



**COMMONWEALTH OF KENTUCKY  
TRANSPORTATION CABINET**  
Frankfort, Kentucky 40622  
[www.transportation.ky.gov/](http://www.transportation.ky.gov/)

**Matthew G. Bevin**  
Governor

**Greg Thomas**  
Secretary

August 21, 2017

CALL NO. 100  
CONTRACT ID NO. 171024  
ADDENDUM # 2

Subject: Jefferson County, TGR 0311 034  
Letting August 25, 2017

- (1) Revised - Plans
- (2) Revised - Table of Contents - Pages 124-125 of 507
- (3) Revised - Note - Page 155 of 507
- (4) Revised - Note - Pages 172-188 of 507
- (5) Revised - Bid Items - Pages 502-507a of 507

Proposal revisions are available at <http://transportation.ky.gov/Construction-Procurement/>.

Plan revisions are available at <http://www.lynnimaging.com/kytransportation/>.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

A handwritten signature in cursive script that reads "Rachel Mills".

Rachel Mills, P.E.  
Director  
Division of Construction Procurement

RM:ks  
Enclosures



An Equal Opportunity Employer M/F/D

**PROEJECT GENERAL SUMMARY**

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	P008

ITEM	DESCRIPTION	UNIT	ROADWAY	BUS STATION	ITS	TRAFFIC	UTILITY - WATER											PROJECT TOTAL
01810	STANDARD CURB AND GUTTER	LF		401														401
01811	STANDARD CURB AND GUTTER MOD	LF	23552	43														23595
01875	STANDARD HEADER CURB	LF		1951														1951
01876	STANDARD HEADER CURB MOD	LF	15783															15783
01877	SPECIAL HEADER CURB	LF		1702														1702
01921	STANDARD BARRIER MEDIAN TYPE 4	SOYD	2662															2662
2134IND	BOLLARDS	EACH	5															5
02014	BARRICADE-TYPE III	EACH	20															20
02015	CEMENT CONCRETE ISLAND	SOYD	466															466
02200	ROADWAY EXCAVATION	CUYD	10956															10956
02545	CLEARING AND GRUBBING	LS	1															1
02562	TEMPORARY SIGNS	SOFT	2400															2400
02568	MOBILIZATION	LS	1															1
02569	DEMOBILIZATION	LS	1															1
02650	MAINTAIN & CONTROL TRAFFIC	LS	1															1
02653	LANE CLOSURE	EACH	12	25														37
02671	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	2															2
02676	MOBILIZATION FOR MILL & TEXT	LS	1															1
02701	TEMP SILT FENCE	LF	5273															5273
02705	SILT TRAP TYPE C	EACH	278															278
02708	CLEAN SILT TRAP TYPE C	EACH	834															834
02720	SIDEWALK-4 IN CONCRETE	SOYD	18542	1481														20023
02726	STAKING	LS	1															1
02775	ARROW PANEL	EACH	4															4
05952	TEMP MULCH	SOYD	52740															52740
05953	TEMP SEEDING AND PROTECTION	SOYD	39555															39555
05990	SODDING	SOYD	11087	98														11185
06407	SBM ALUM SHEET SIGNS .125 IN	SOFT	144	20														164
06510	PAVE STRIPING-TEMP PAINT-4 IN	LF	100000															100000
06514	PAVE STRIPING-PERM PAINT-4 IN	LF	16755	673														17428
06515	PAVE STRIPING-PERM PAINT-6 IN	LF	47807	3621														51428
06530	PAVE STRIPING REMOVAL-4 IN	LF	60000															60000
06531	PAVE STRIPING REMOVAL-6 IN	LF	100000															100000
06550	PAVE STRIPING-TEMP REM TAPE-W	LF	5000															5000
06551	PAVE STRIPING-TEMP REM TAPE-Y	LF	5000															5000
06565	PAVE MARKING-THERMO X-WALK-6 IN	LF	10150															10150
06568	PAVE MARKING-THERMO STOP BAR-24IN	LF	1562	40														1602
06572	PAVE MARKING-DOTTED LANE EXTEN	LF	195															195
06573	PAVE MARKING-THERMO STR ARROW	EACH	7															7
06574	PAVE MARKING-THERMO CURV ARROW	EACH	143	3														146
06575	PAVE MARKING-THERMO COMB ARROW	EACH	20															20
0660INC	PAVE MARKING-PAINT WORDS	EACH	10	8														18
22520EN	PAVE MARKING-THERMO YIELD BAR-36 IN	LF	42															42
23139EN	STRIPING REMOVAL	LF	175000															175000
24935EC	CONCRETE PAINT (MEDIAN)	SOYD	1233															1233
10020NS	FUEL ADJUSTMENT	DOLL	26285															26285
10030NS	ASPHALT ADJUSTMENT	DOLL	48964															48964
20094ES835	TEMP RELOCATION OF SIGNAL HEAD	EACH	375															375
22665EN	REMOVE NON-MOUNTABLE MEDIAN	SOYD	642															642
23158ES505	DETECTABLE WARNINGS	SOFT	2205	871														3076
24489EC	INLAID PAVEMENT MARKER	EACH	1830															1830
02242	WATER	MGAL	1998															1998
24918ES601	CONCRETE-CLASS A (VERGE & MEDIAN)	SOYD	5849	347														6196
23214EC	BRICK-PAVERS FOR ROADWAY (VERGE)	SOYD	150	232														382
20000ES724	TREE (IN TREE GRATE)	EACH	30	42														72
2491IED	STRUCTURAL SOIL VAULT SYSTEM (SSVS)	SOYD	120	218														338
20000ES724	TREE	EACH	6	16														22
20000ES724	TREE (ORNAMENTAL)	EACH	7															7
20001ES724	SHRUB (LARGE SHRUBS MORE THAN 3' TALL)	EACH	33															33

**NOTES:**

- ① THE PROJECT TOTALS INCLUDE THE RESPECTIVE TOTALS FROM THE ROADWAY, BUS STATIONS, ITS, TRAFFIC, AND UTILITY GENERAL SUMMARY SHEETS
- ② NOTES FOR THE ITEMS ARE SHOWN ON THE INDIVIDUAL SHEETS.

FILE NAME: G:\PWORK\ING\PITT\_D1998425\APO0800SU.DGN

USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: P00800SU

Power InRoads v8.11.9.397

PROEJECT GENERAL SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	PO10

ITEM	DESCRIPTION	UNIT	ROADWAY	BUS STATION	ITS	TRAFFIC	UTILITY - WATER											PROJECT TOTAL
01642	JUNCTION BOX-18 IN	EACH			208													208
04792	CONDUIT-1 IN	LF			4645	534												5179
04795	CONDUIT-2 IN	LF	125		7392	1345												8862
04797	CONDUIT-3 IN	LF			3711													3711
04820	TRENCHING AND BACKFILLING	LF	400		4965	1742												7107
04888	MESSENGER-4500 LB	LF			2105													2105
04899	ELECTRICAL SERVICE	EACH			36	1												37
21543EN	BORE AND JACK CONDUIT	LF			5984													5984
24543EC	CLEAN (EXISTING CONDUIT CLEANED)	LF			5800													5800
01650	JUNCTION BOX (CONCRETE 32")	EACH			29													29
24921EC	CONDUIT RISER-2 IN	EACH			73													73
21077ED	FIBER OPTIC CABLE (FIBER OPTIC DROP CABLE, 12 STRAND)	LF			17590													17590
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND)	LF			756													756
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND)	LF			33775													33775
24922EC	FIBER OPTIC SPLICE ENCLOSURE	EACH			42													42
24923EC	CABINET FIBER TERMINATION PANEL	EACH			37													37
24924EC	AIR LINK COMMUNICATION	EACH			2													2
24925EC	LAYER 2 ETHERNET SWITCH-FLD MOUNT-6 PORT	EACH			37													37
24926EC	INTERIOR FIBER OPTIC PATCH PANEL	EACH			2													2
24927EC	LAYER 2 ETHERNET SWITCH - RACK MOUNT	EACH			3													3
24928EC	FIREWALL UNIT - RACK MOUNT	EACH			3													3
24929EC	MICROTRENCHING	LF			20177													20177
24930EC	MICRO-DUCT PATHWAY-2 CELL	LF			17108													17108
24931EC	MICRO-DUCT PATHWAY-3 CELL	LF			12768													12768
24932EC	CONDUIT REPAIR	LF			100													100
24933EC	JUNCTION BOX REPAIRED	EACH			5													5
24901EC	PVC CONDUIT-2 IN-SCHEDULE 80	LF				1881												1881
04723	BRACKET - 10 FEET	EACH				52												52
04780	FUSED CONNECTOR KIT	EACH				104												104
04794	CONDUIT - 1 1/2 IN	LF				40												40
04811	ELECTRICAL JUNCTION BOX TYPE B	EACH				57												57
04830	LOOP WIRE	LF	7100			25525												32625
04832	WIRE-NO. 12	LF				22449												22449
04844	CABLE-NO. 14/5C	LF				28657												28657
04845	CABLE-NO. 14/7C	LF				1650												1650
04850	CABLE-NO. 14/1 PAIR	LF				13919												13919
04885	MESSENGER-10800 LB	LF				3870												3870
04895	LOOP SAW SLOT AND FILL	LF	1800			9799												11599
24908EC	INSTALL SIGNAL CONTROLLER - TY ATC (WITH IC ATC MODULE)	EACH				35												35
04932	INSTALL STEEL STRAIN POLE	EACH				33												33
04950	REMOVE SIGNAL EQUIPMENT	EACH				94												94
06472	INSTALL SPAN MOUNTED SIGN	EACH				38												38
20093NS835	INSTALL PEDESTRIAN HEAD-LED	EACH				84												84
20188NS835	INSTALL LED SIGNAL-3 SECTION, 12 IN (TRANSIT)	EACH				11												11
20188NS835	INSTALL LED SIGNAL-3 SECTION, 12 IN	EACH				116												116
20189NS835	INSTALL LED SIGNAL-5 SECTION, 12 IN	EACH				11												11
20266ES835	INSTALL LED SIGNAL-4 SECTION, 12 IN	EACH				8												8
21743NN	INSTALL PEDESTRIAN DETECTOR	EACH				84												84
23157EN	TRAFFIC SIGNAL POLE BASE	CUYD				145												145
24937EC	INSTALL EXTERNAL UPS SYSTEM CABINET	EACH				2												2
23206EC	INSTALL CONTROLLER CABINET	EACH				6												6
23222EC	INSTALL SIGNAL PEDESTAL	EACH				26												26
24589ED	LED LUMINAIRE	EACH				52												52
24919EC	MULTIMODE PHASE SELECTOR (WITH POLE MOUNTED ANTENNA)	EACH				32												32
24916ED	SYSTEM INTEGRATION	LS				1												1
24941EC	LED TRANSIT SIGNAL MODULE	EACH				33												33
22939ND	INSTALL LUMINARE POLE	EACH				2												2

NOTES:

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- ② NOTES FOR THE ITEMS ARE SHOWN ON THE INDIVIDUAL SHEETS.

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DATE PLOTTED: August 17, 2017

E-SHEET NAME: PO1000SU

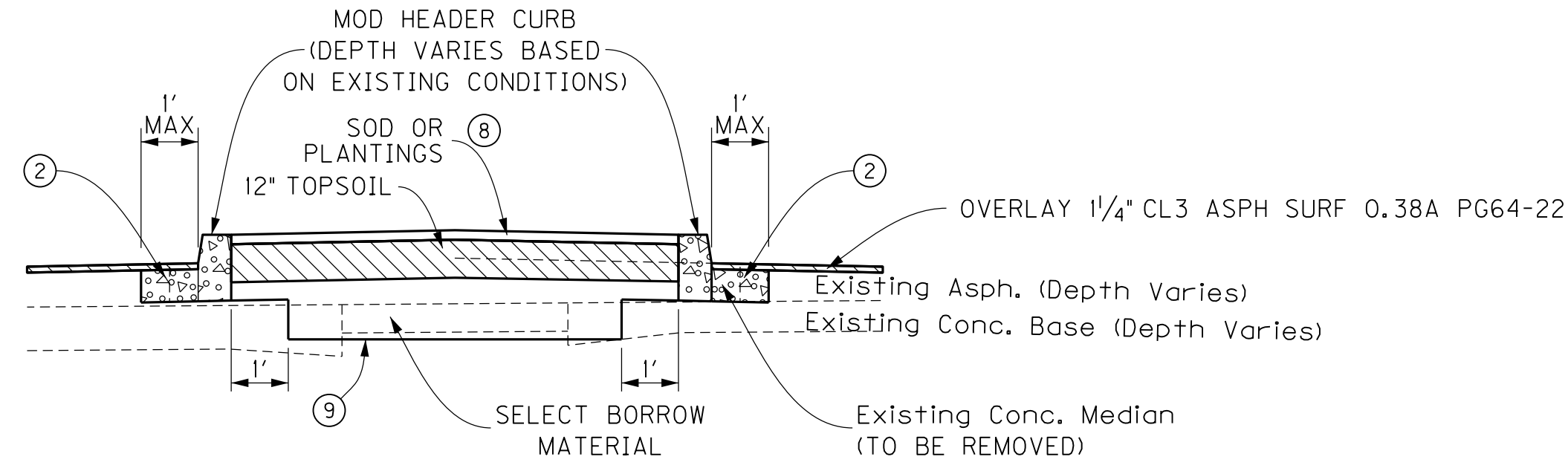
Power InRoads v8.11.9.397

# ROADWAY TYPICAL SECTIONS

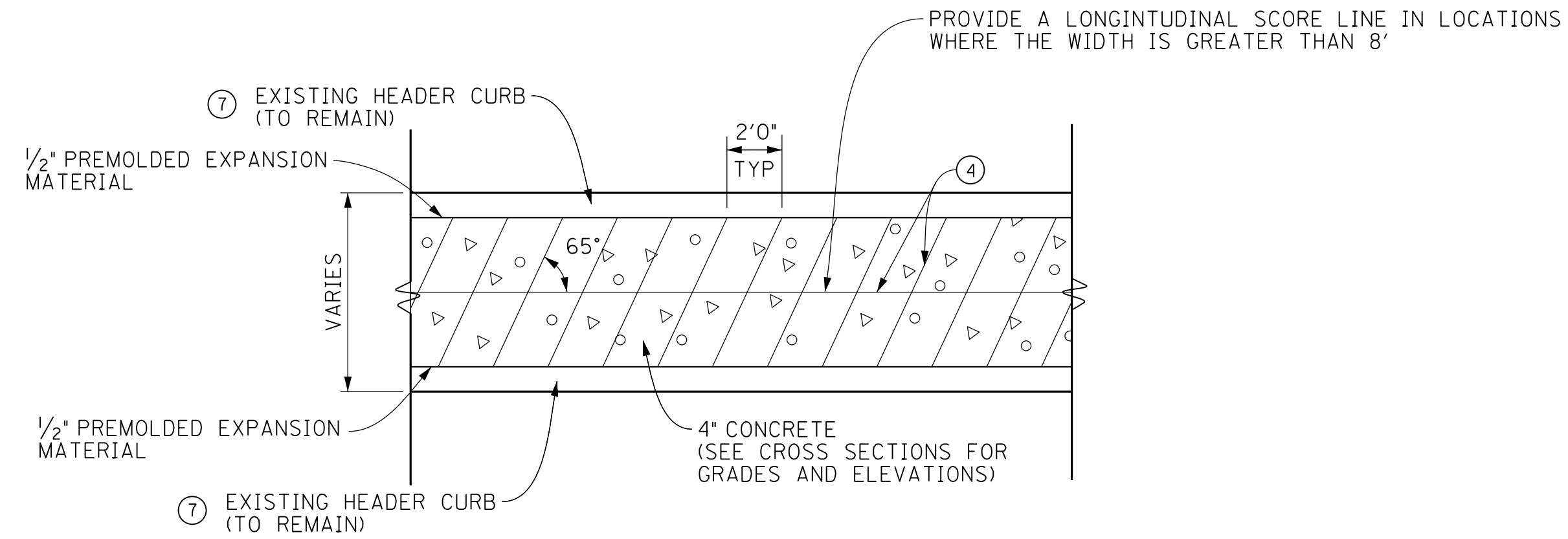
COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	ROOIB

## GENERAL NOTES

- ① SOD ALL DISTURBED AREAS.
- ② REMOVE EXISTING ASPHALT TO EXISTING CONCRETE BASE. REFILL WITH CLASS A CONCRETE TO WITHIN 1/4" OF PROPOSED SURFACE. INCIDENTAL TO CURB AND GUTTER CONSTRUCTION.
- ③ CONTRACTION JOINTS 10' ON CENTER (1" DEPTH). AN ATTEMPT SHOULD BE MADE TO ALIGN WITH THE CURB JOINT LOCATIONS.
- ④ 1/4" DEEP SCORED JOINT.
- ⑤ 1/2" EXPANSION JOINT MATERIAL REQUIRED WHERE ABUTTING FIXED STRUCTURES, AT LOCATIONS IDENTIFIED ON RPM-152-08, AND AT ALL COLD JOINT LOCATIONS.
- ⑥ ALL JOINTS WILL BE TOOLED. NO SAW CUTTING PERMITTED.
- ⑦ EXISTING HEADER CURB TO REMAIN ONLY IN LIMITS STATED IN DETAIL I.
- ⑧ SEE ROADWAY PLAN SHEETS FOR LOCATIONS FOR EITHER CONCRETE, SOD, OR PLANTINGS IN THE MEDIAN.
- ⑨ REMOVE EXISTING MATERIAL TO SOIL LIMITS. ADDITIONAL DEPTH REQUIRED IN PLANTING AREAS, SEE LANDSCAPE DETAILS SHEET R138.

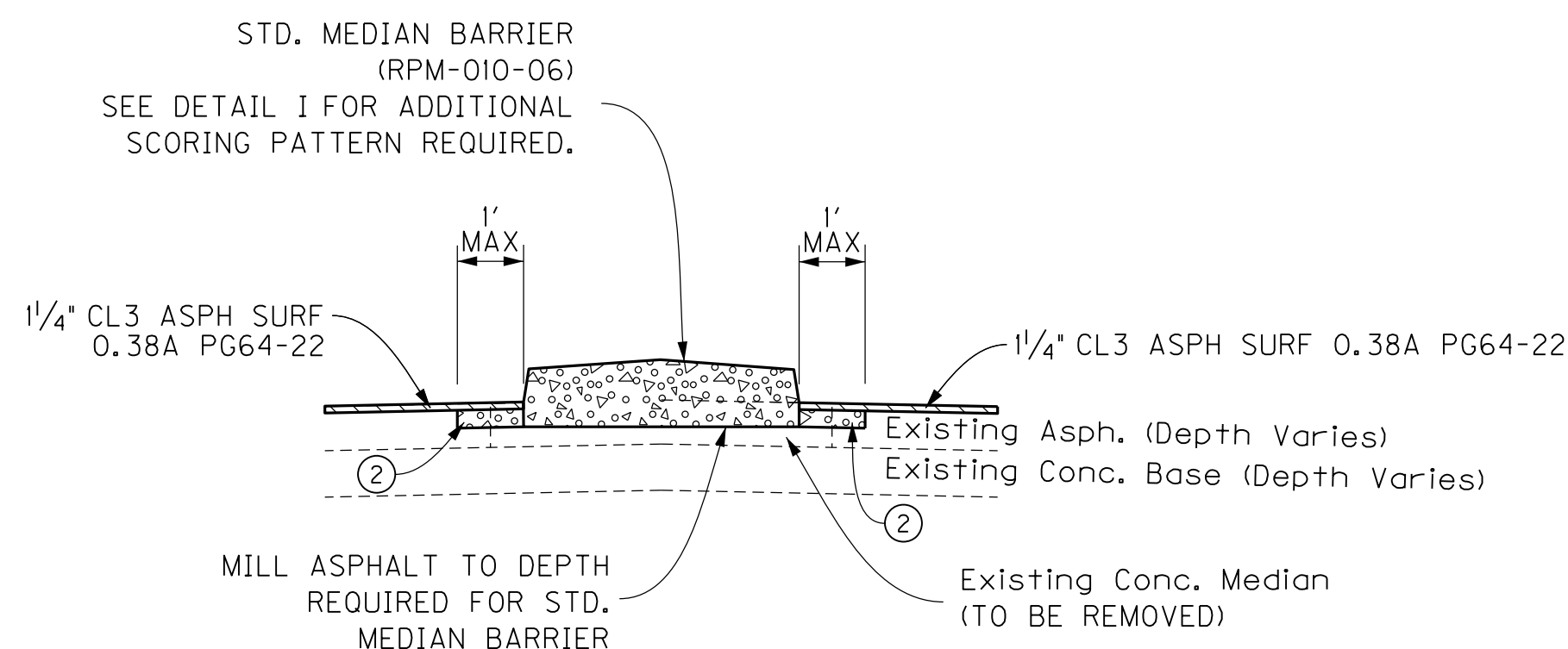


**DETAIL E**

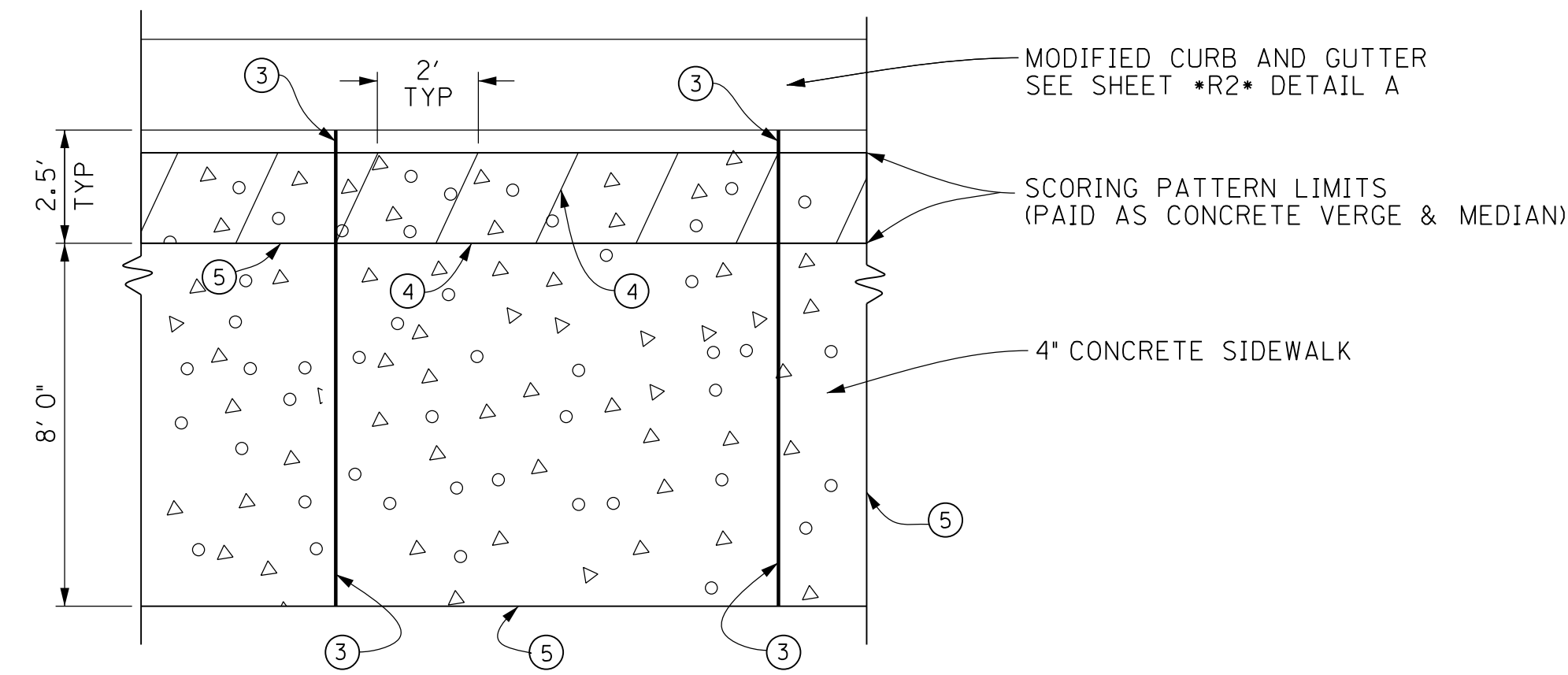


**MEDIAN CONCRETE SCORING PATTERN**

**DETAIL I**

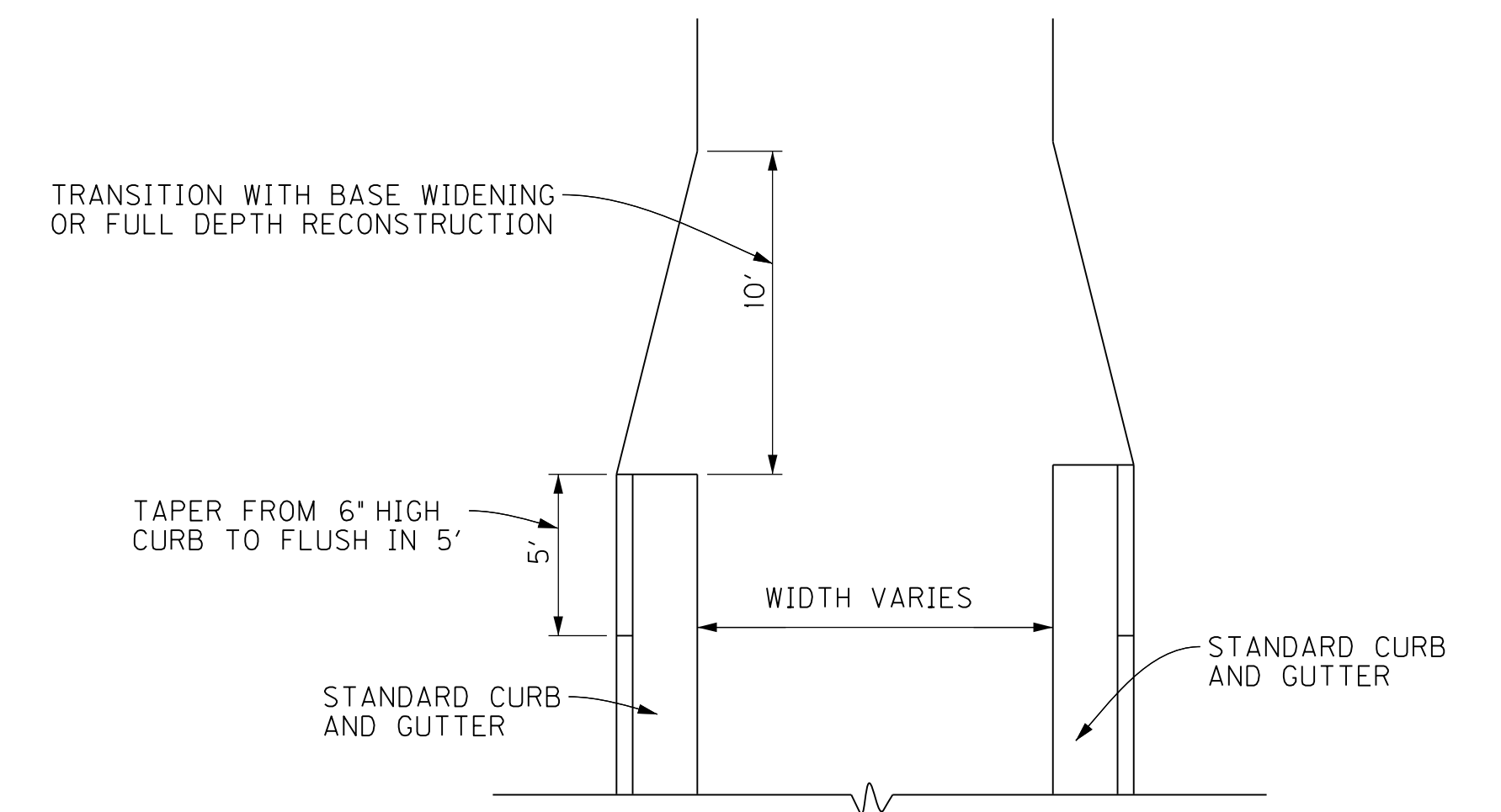


**DETAIL F**



**CONCRETE AND VERGE SCORING PATTERN ENLARGEMENT**

**DETAIL J**



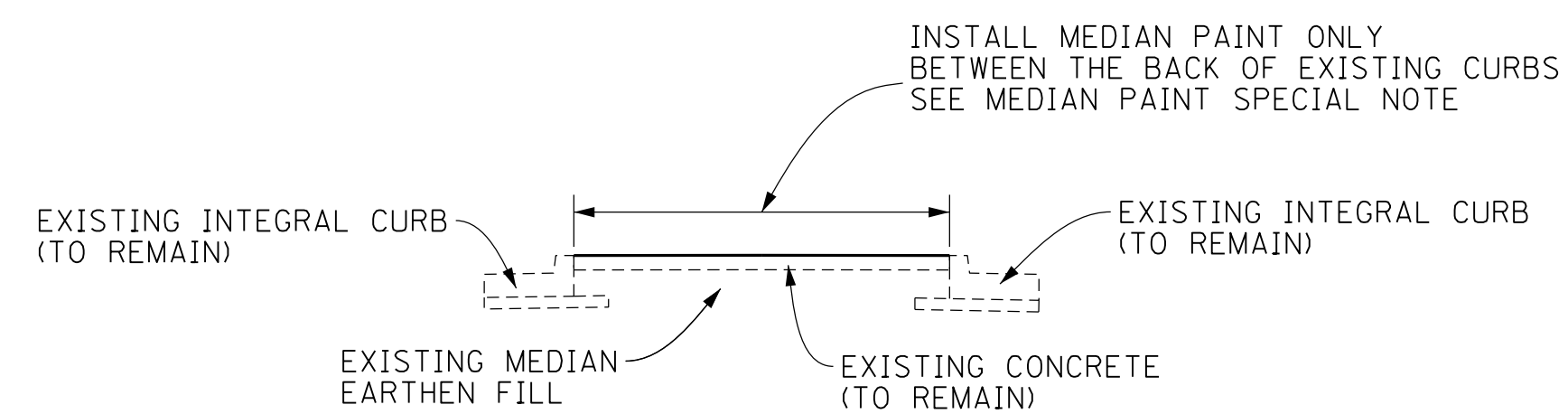
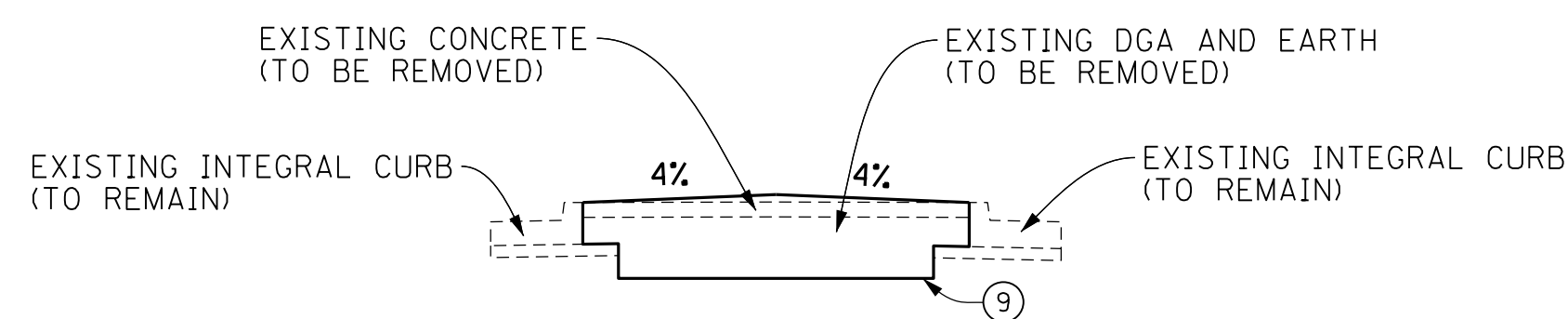
**CURB AND PAVEMENT TRANSITIONS**

**DETAIL K**

## CONCRETE MEDIAN REMOVAL WITH LANDSCAPE REPLACEMENT DETAIL

**STA. 654 + 55 – STA. 665 + 28**

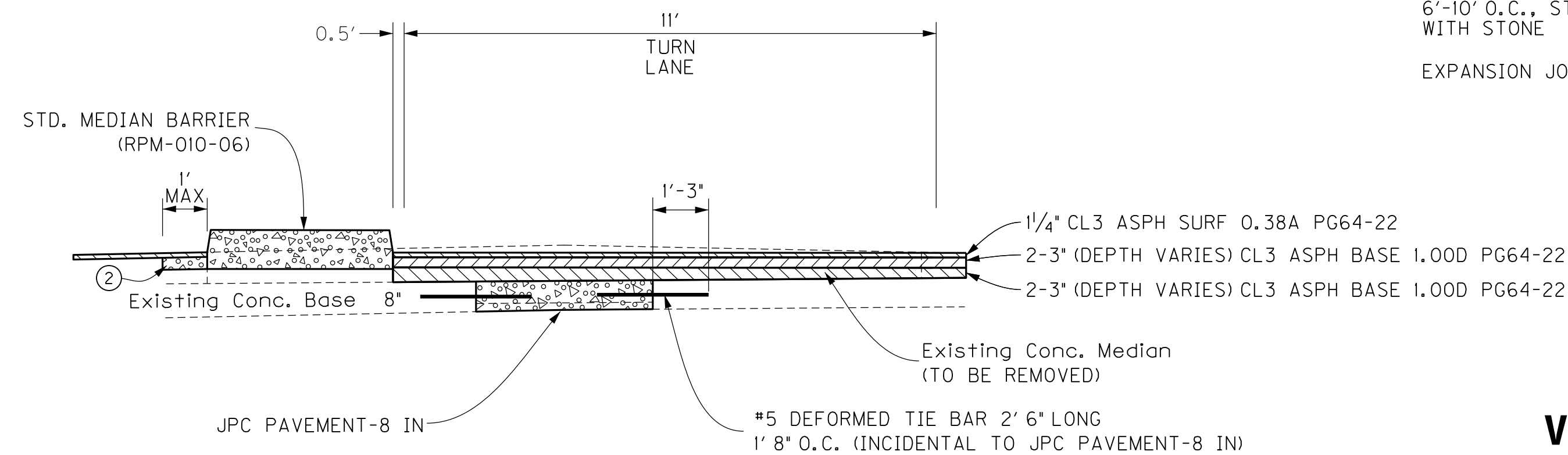
**DETAIL G**



## MEDIAN PAINT DETAIL

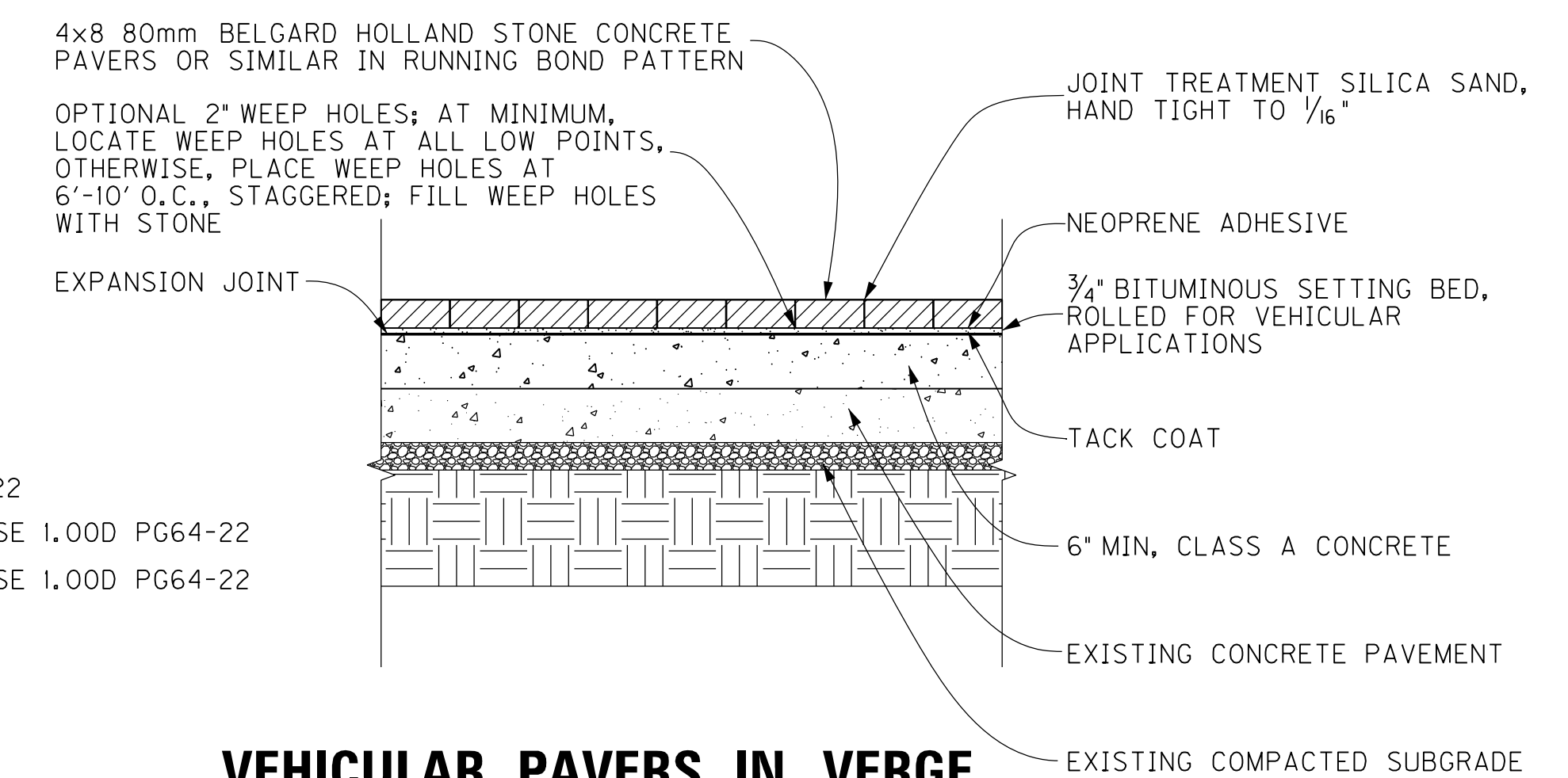
**STA. 665 + 28 – STA. 677 + 38**

**DETAIL H**



**FULL DEPTH PAVEMENT TURN LANE**

**DETAIL L**



**VEHICULAR PAVERS IN VERGE**

**DETAIL M**

TRANSFORMING DIXIE HIGHWAY  
MEDIAN AND PAVEMENT DETAILS

SCALE: 1"=NTS

FILE NAME: G:\P\WORKING\N\PI\TT\DI998425\ROOIB\T.S.DGN

USER: ppoffen  
DATE PLOTTED: August 17, 2017

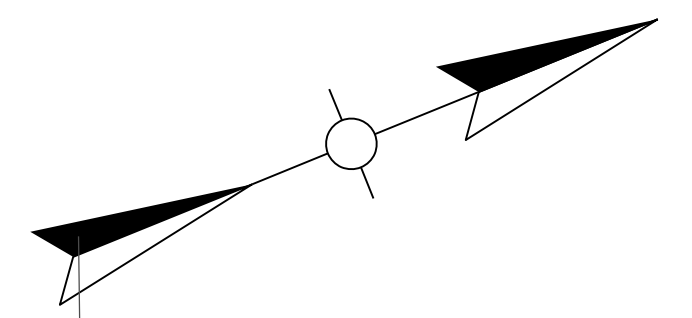
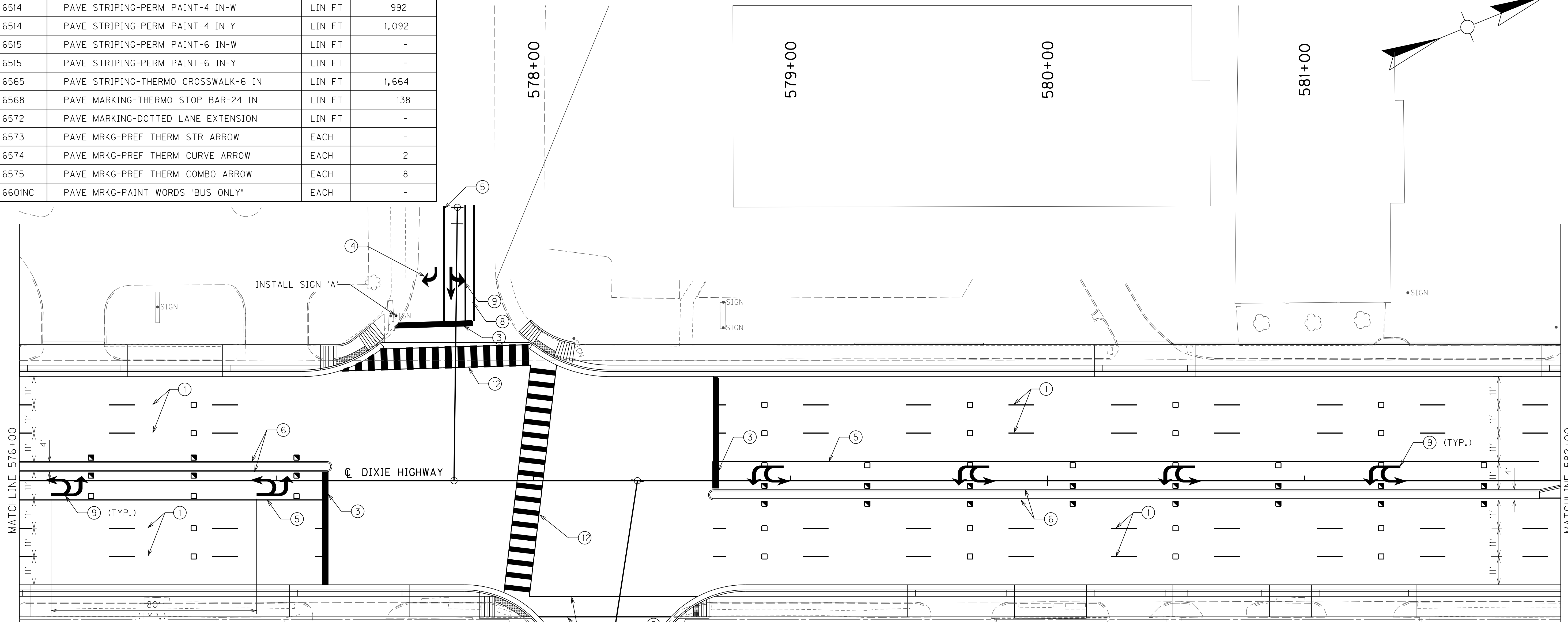
E-SHEET NAME: ROOIB\T.S.

MicroStation v8.11.9.832



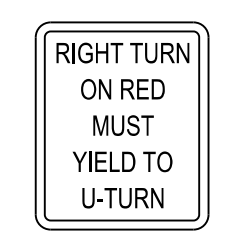


PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	992
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	1,092
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	1,664
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	138
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	-
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	2
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	8
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-



FILE NAME: C:\PWORKING\PI\TT\1998425\R08700DS.DGN  
 USER: ppoffen  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: R08700DS  
 MicroStation v8.11.9.832

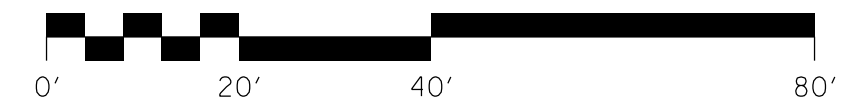
- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
- ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
- ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
- ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
- ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
- ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
- ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
- ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
- ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
- ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
- ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"
- ⑫ PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 24 INCH WHITE, 36 INCH GAP (8' WIDTH)



SIGN 'A'  
R10-30  
30" x 36"

NOTE: SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	□	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	31
6590	■	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	22

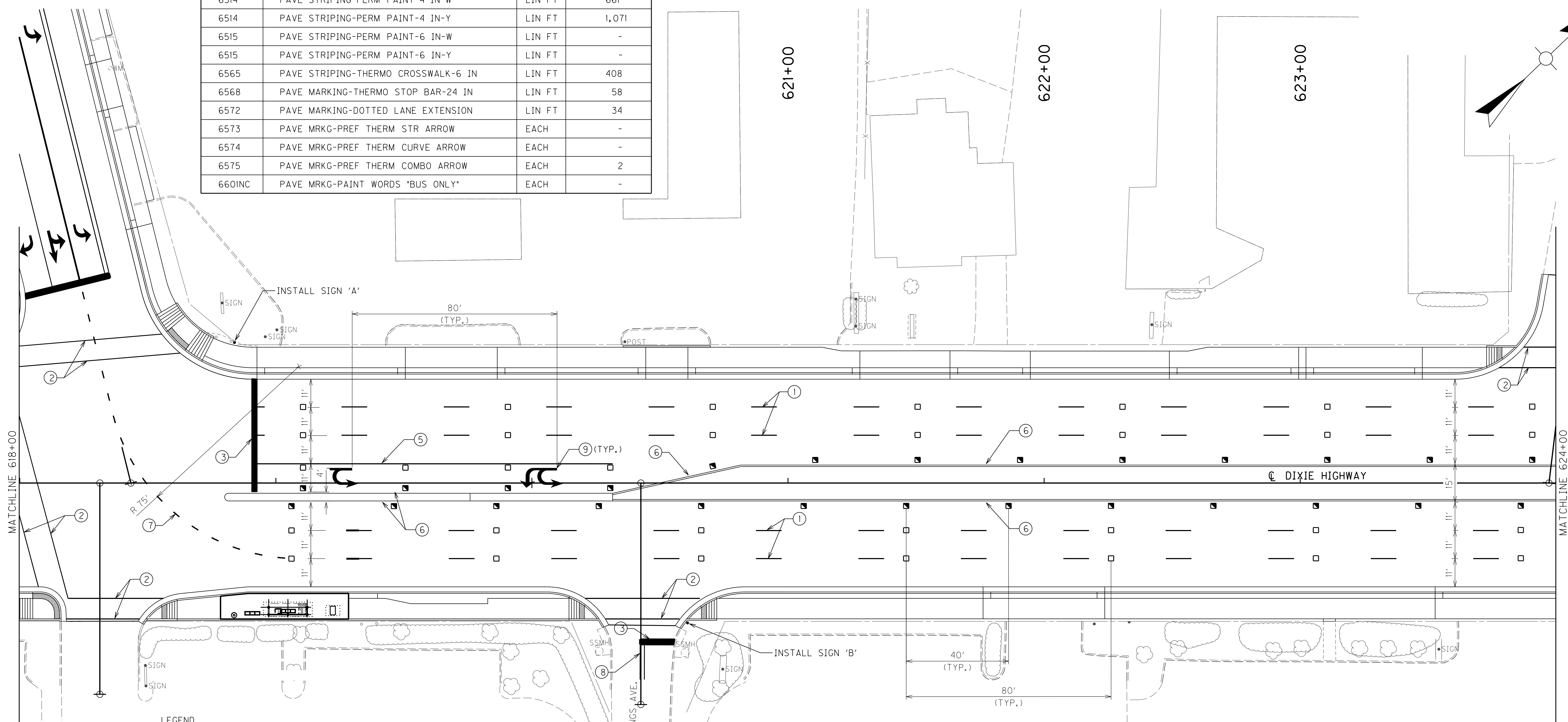


SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 576+00 TO STA. 582+00

FOR THE CONTINUATION OF  
ROCKFORD LANE &  
QUANTITIES SEE SHEET R108

PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	661
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	1,071
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	408
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	58
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	34
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	-
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	2
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-



LEGEND

- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
- ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
- ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
- ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
- ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
- ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
- ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
- ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
- ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
- ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
- ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

East Rockford Lane

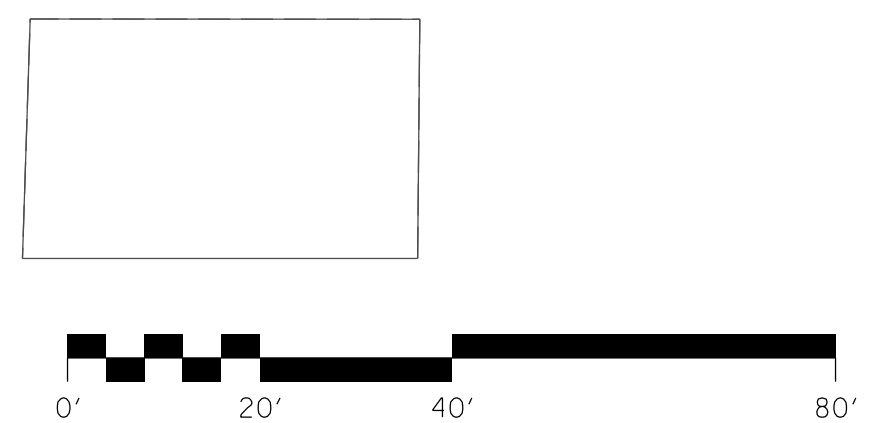
Stallings Avenue

SIGN 'A'  
SERIES C  
(12" UPPER CASE)  
18" x 96"

SIGN 'B'  
SERIES C  
(12" UPPER CASE)  
18" x 90"

NOTE: SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	□	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	32
6590	■	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	26



SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 618+00 TO STA. 624+00

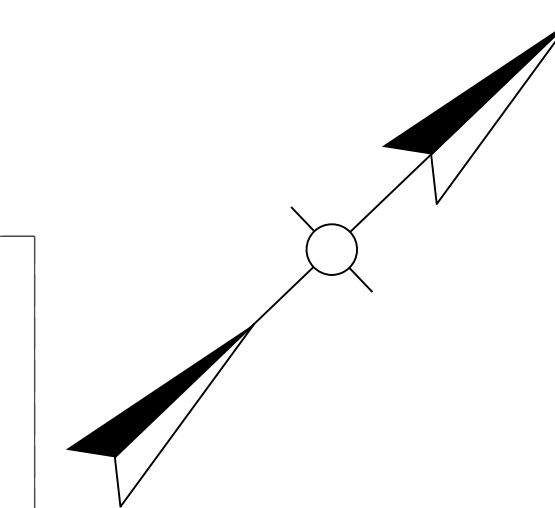
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USER: ppfoffen  
DATE PLOTTED: August 17, 2017

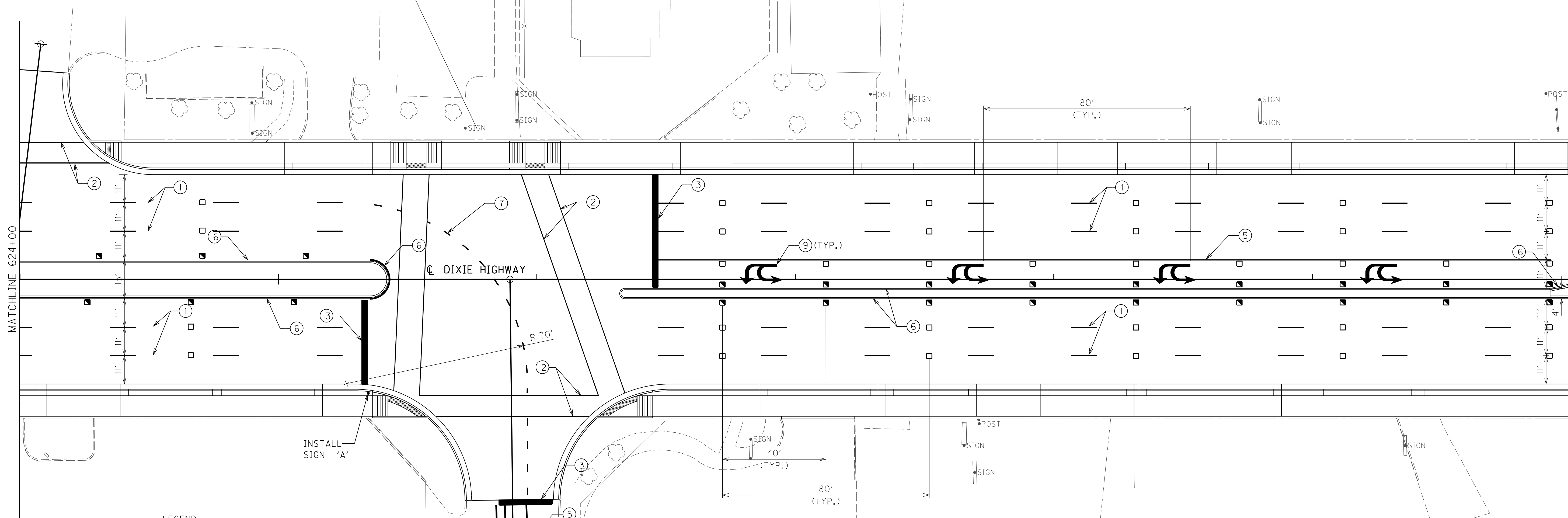
E-SHEET NAME: R094000S

MicroStation v8.11.9.832





PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	896
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	1,115
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	533
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	98
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	30
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	1
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	5
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-



LEGEND

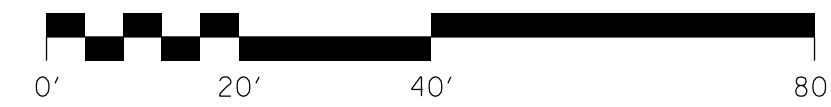
- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
- ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
- ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
- ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
- ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
- ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
- ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
- ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
- ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
- ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
- ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	□	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	33
6590	■	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	24

Gagel Avenue

SIGN 'A'  
SERIES C  
(12" UPPER CASE)  
18" x 90"

NOTE: SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.



SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 624+00 TO STA. 630+00

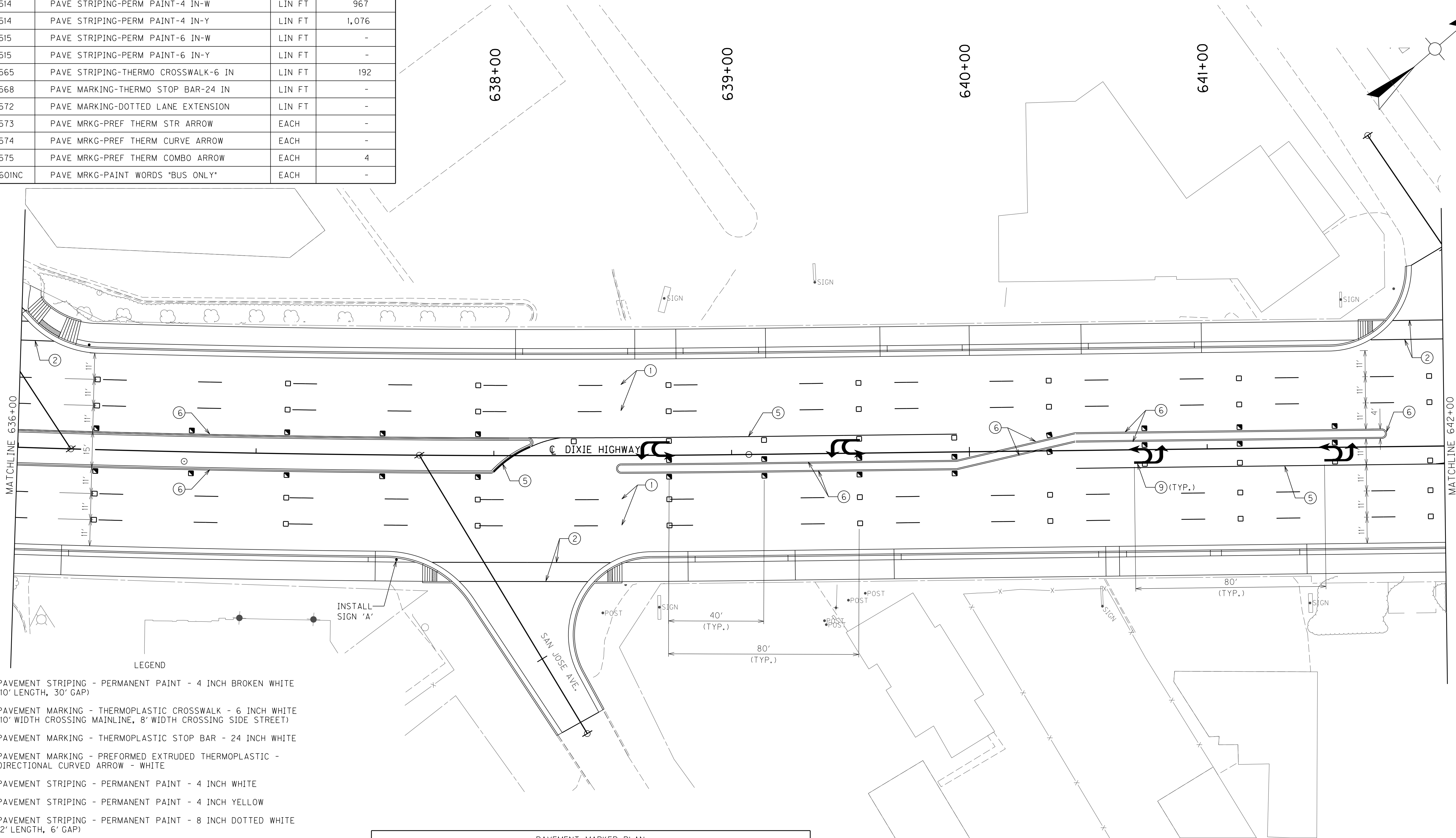
FILE NAME: C:\PWORKING\PI\TT\DI998425\AR095000S.DGN

USER: ppforffen  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: R095000S

MicroStation v8.11.9.832

PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	967
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	1,076
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	192
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	-
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	-
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	-
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	4
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-



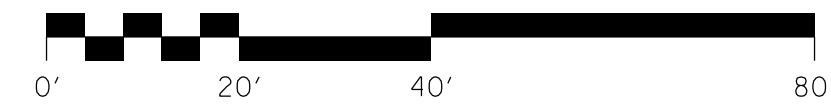
- LEGEND
- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
  - ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
  - ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
  - ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
  - ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
  - ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
  - ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
  - ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
  - ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
  - ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
  - ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	□	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	41
6590	■	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	26

**San Jose Avenue**

SIGN 'A'  
SERIES C  
(12" UPPER CASE)  
18" x 96"

NOTE: SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.

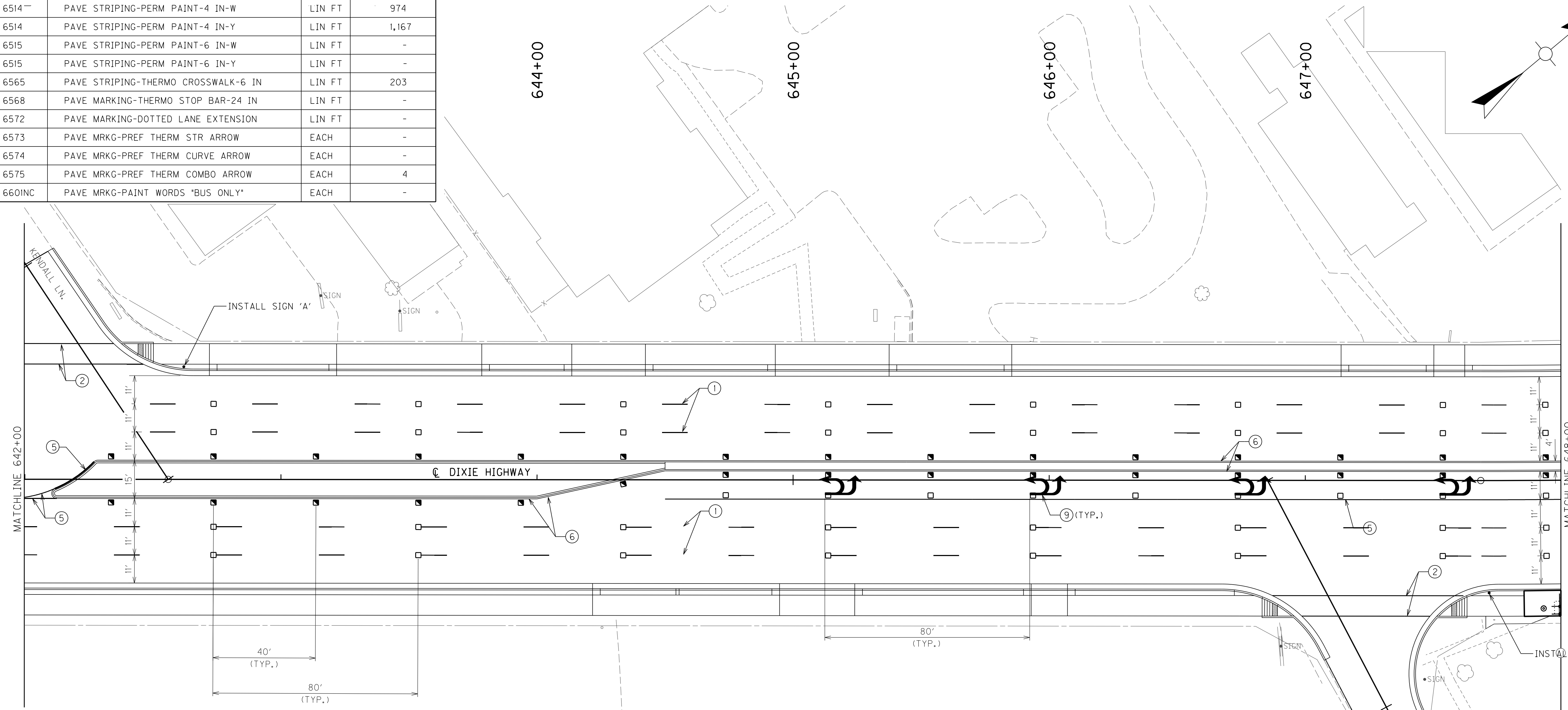


SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 636+00 TO STA. 642+00

FILE NAME: G:\PWORKING\PI\TT\_D1998425\AR097000S.DGN  
 USER: ppfoffen  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: R097000S  
 MicroStation v8.11.9.832

PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	974
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	1,167
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	203
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	-
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	-
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	-
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	4
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-



LEGEND

- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
- ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
- ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
- ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
- ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
- ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
- ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
- ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
- ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
- ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
- ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

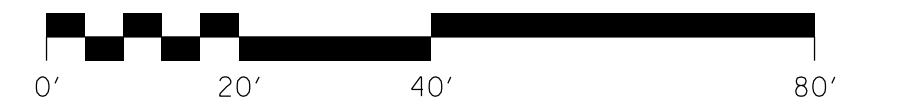
**Kendall Lane**      **Stewart Avenue**

SIGN 'A'  
SERIES C  
(12" UPPER CASE)  
18" x 90"

SIGN 'B'  
SERIES C  
(12" UPPER CASE)  
18" x 96"

NOTE: SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	□	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	41
6590	■	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	30

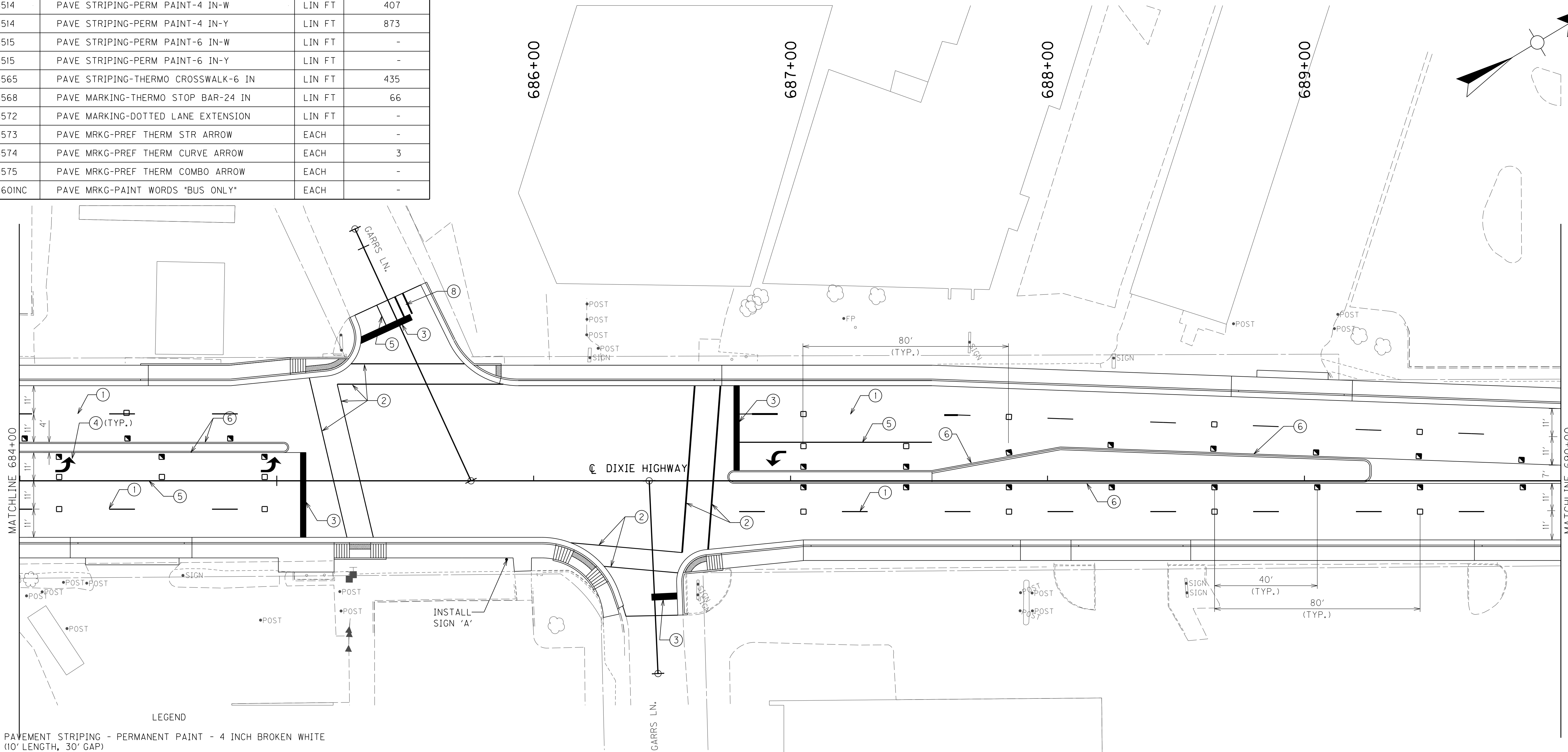
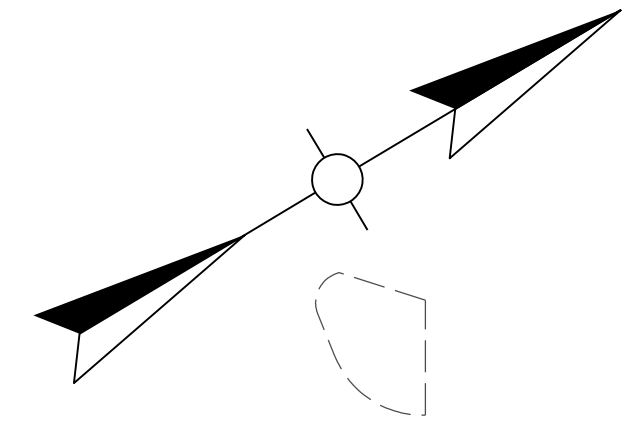


SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 642+00 TO STA. 648+00

FILE NAME: C:\PWORKING\PI\TT\DI998425\AR09800DS.DGN  
 USER: ppoffen  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: R09800DS  
 MicroStation v8.11.9.832

PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	407
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	873
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	435
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	66
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	-
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	3
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	-
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-



LEGEND

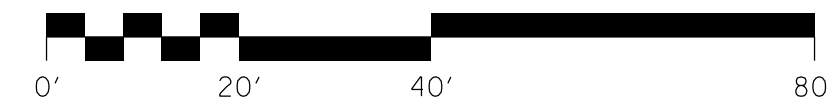
- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
- ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
- ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
- ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
- ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
- ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
- ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
- ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
- ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
- ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
- ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

Garrs Lane

SIGN 'A'  
SERIES C  
(12" UPPER CASE)  
18' x 72"

NOTE: SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	□	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	16
6590	■	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	21



SCALE: 1"=20'

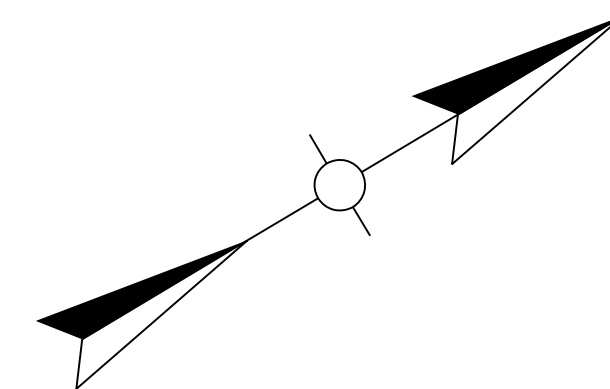
DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 684+00 TO STA. 690+00

FILE NAME: C:\PWORKING\PI\TT\DI998425\RI050005.DGN

USER: ppoffen  
DATE PLOTTED: August 17, 2017

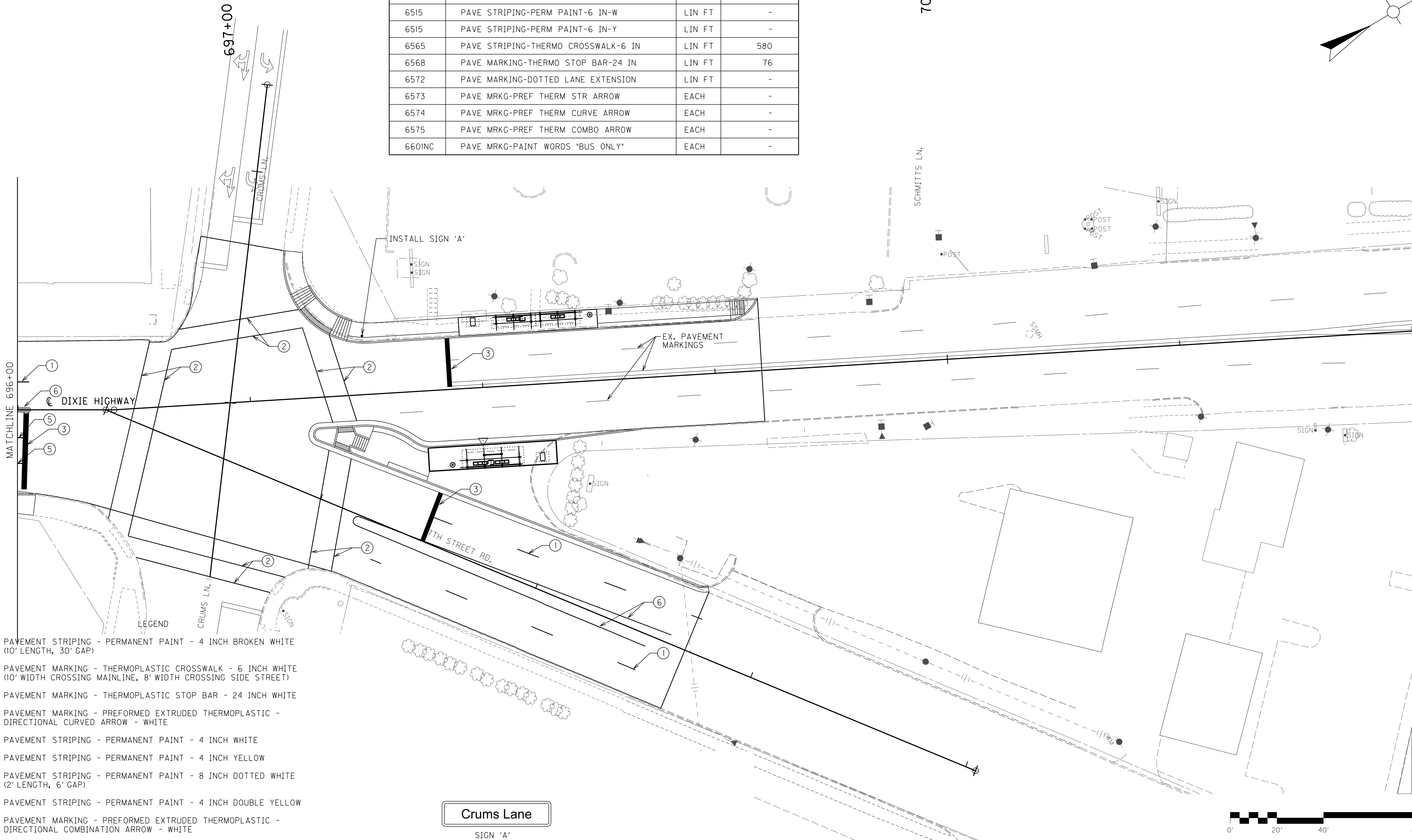
E-SHEET NAME: RI050005

MicroStation v8.11.9.832



PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM-PAINT-4 IN-W	LIN FT	80
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	297
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	580
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	76
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	-
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	-
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	-
660INC	PAVE MRKG-PAINT WORDS 'BUS ONLY'	EACH	-

FILE NAME: C:\PWORKING\PI\TT\_D1998425\RI070005.DGN  
 USER: ccrabor  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: RI070005  
 MicroStation v8.11.9.832

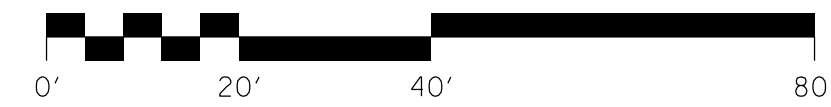


- LEGEND
- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
  - ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
  - ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
  - ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
  - ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
  - ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
  - ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
  - ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
  - ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
  - ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
  - ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

**Crums Lane**

SIGN 'A'  
 SERIES C  
 (12" UPPER CASE)  
 18" x 90"

NOTE: SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.



SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
 PAVEMENT MARKING SHEET  
 STA. 696+00 TO STA. 702+00



## ITS SUB SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	1002

ITEM	DESCRIPTION	UNIT	I016	I017	I018	I019	I020	I021	I022	I023	I024	I025	I026	I027	I028	I029	TOTALS CARRIED TO FINAL GEN. SUM.
01642	JUNCTION BOX-18 IN	EACH	1	6	14	1	1	13		13	1	17	1	10	3	1	82
04792	CONDUIT-1 IN	LF		77	140			195		160		345		254			1171
04795	CONDUIT-2 IN	LF	22	220	485	18	66	570	16	375	21	490	51	138	204	12	2688
04797	CONDUIT-3 IN	LF															0
04820	TRENCHING AND BACKFILLING	LF	22	220	548	18	66	133	16	140	21	242	51	176	69	12	1734
04899	ELECTRICAL SERVICE	EACH		1	2			2		2		2		2			11
21543EN	BORE AND JACK CONDUIT	LF			131			162		90		81			135		599
24543EC	CLEAN (EXISTING CONDUIT CLEANED)	LF															0
01650	JUNCTION BOX (CONCRETE 32")	EACH															0
24921EC	CONDUIT RISER-2 IN	EACH	1	3	5	1	1	4	1	5	1	5	1	5	2	1	36
21077ED	FIBER OPTIC CABLE (FIBER OPTIC DROP CABLE, 12 STRAND)	LF	170	640	980	310	200	520	150	920	140	1080	60	870	480	100	6620
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND)	LF															0
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND)	LF															0
24922EC	FIBER OPTIC SPLICE ENCLOSURE	EACH	1	1	1	1	1	1	1	1	1	1	1	1	2	1	15
24923EC	CABINET FIBER TERMINATION PANEL	EACH	1	1	1	1	1	1	1	1	1	1	1	1	2	1	15
24924EC	AIR LINK COMMUNICATION	EACH															0
24925EC	LAYER 2 ETHERNET SWITCH-FLD MOUNT-6 PORT	EACH	1	1	1	1	1	1	1	1	1	1	1	1	2	1	15
24926EC	INTERIOR FIBER OPTIC PATCH PANEL	EACH															0
24927EC	LAYER 2 ETHERNET SWITCH • RACK MOUNT	EACH															0
24928EC	FIREWALL UNIT • RACK MOUNT	EACH															0
24929EC	MICROTRENCHING	LF															0
24930EC	MICRO-DUCT PATHWAY-2 CELL	LF															0
24931EC	MICRO-DUCT PATHWAY-3 CELL	LF															0
24932EC	CONDUIT REPAIR	LF															0
24933EC	JUNCTION BOX REPAIRED	EACH															0
04888	MESSENGER - 4500 LB	LF	12	194	102	111	10	13	7	211	5	113	5	308	5	5	1101

**NOTES:**

- ① ITS SUMMARY TOTALS CARRIED TO PROJECT GENERAL SUMMARY SHEETS.
- ② ALL NOTES FOR SPECIAL ITS AND TRAFFIC PAY ITEMS - SEE THE ITS SPECIAL NOTES.
- ③ ALL UNDERGROUND CONDUIT FROM THE PYLON TO SHELTER AND CONDUIT FOR FUTURE USE SHALL BE 1".
- ④ ALL UNDERGROUND CONDUIT FOR 12 FIBER DROP CABLE TO PYLON OR SIGNAL CABINET SHALL BE 2".
- ⑤ ALL UNDERGROUND CONDUIT FOR ELECTRIC FROM POWER SOURCE TO PYLON SHALL TO BE 2".
- ⑥ ALL UNDERGROUND CONDUIT FOR 144 FIBER SHALL BE 3" UNLESS NOTED AS MICRO TRENCH. (9TH STREET)
- ⑦ ALL UNDERGROUND CONDUIT SHALL BE INSTALLED IN OPEN TRENCHING UNLESS OTHERWISE NOTED.
- ⑧ ALL UNDERGROUND CONDUIT UNDER ROADWAYS SHALL BE RIGID STEEL. OTHER CONDUITS TO BE PVC SCHEDULE 80.
- ⑨ ALL QUANTITIES SHOWN UNDER "PROJECT ENGINEER APPROVED" TO BE APPROVED ON AN AS NEEDED BASIS IN THE FIELD BY THE PROJECT ENGINEER.
- ⑩ UNLESS SPECIFIC LOCATION INFORMATION IS PROVIDED, CONTRACTOR SHALL FIELD LOCATE JUNCTION BOXES TO THE SATISFACTION OF THE PROJECT ENGINEER ON SITE.
- ⑪ UNLESS OTHERWISE NOTED, ALL MICRO TRENCHING FOR 144 FIBER SHALL BE CUT ALONG THE EAST SIDE OF DIXIE HIGHWAY, GENERALLY CENTERED IN THE OUTSIDE LANE AND PARALLEL TO THE CURB/EOP. EXTRA CARE SHALL BE TAKEN TO AVOID TRENCHING IN WHEEL PATHS AND TO PROVIDE ADEQUATE CLEARANCE TO ALL EXISTING MANHOLES AND VALVES.

FILE NAME: C:\PWORKING\PIIT\0190603\100200SU.DGN

USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: 100200SU

Power InRoads v8.11.9.397

## ITS SUB SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	1003

ITEM	DESCRIPTION	UNIT	I030	I031	I032	I033	I034	I035	I036	I037	I038	I039	I040	I041	I042	I043	TOTALS CARRIED TO FINAL GEN. SUM.
01642	JUNCTION BOX-18 IN	EACH	1	1	3	13	10	1	12		11						52
04792	CONDUIT-1 IN	LF				223	248		198		158						827
04795	CONDUIT-2 IN	LF	12	12	206	553	283	9	342	3	552	6	9				1987
04797	CONDUIT-3 IN	LF													80		80
04820	TRENCHING AND BACKFILLING	LF	12	12	14	341	40	9	342	3	495	6	9				1283
04899	ELECTRICAL SERVICE	EACH				2	2		2		2						8
21543EN	BORE AND JACK CONDUIT	LF			184	217	50				70				80		601
24543EC	CLEAN (EXISTING CONDUIT CLEANED)	LF															0
01650	JUNCTION BOX (CONCRETE 32")	EACH											1	1	2	1	5
24921EC	CONDUIT RISER-2 IN	EACH	1	1	1	4	5	1	5	1	5	1					25
21077ED	FIBER OPTIC CABLE (FIBER OPTIC DROP CABLE, 12 STRAND)	LF	180	150	380	980	940	120	1230	140	830	160	130	120		120	5480
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND)	LF															0
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND)	LF											1172	1350	1425	1350	5297
24922EC	FIBER OPTIC SPLICE ENCLOSURE	EACH	1	1	1	1	1	1	1	1	1	1	1	1		1	13
24923EC	CABINET FIBER TERMINATION PANEL	EACH	1	1	1	1	1	1	1	1	1	1	1	1		1	13
24924EC	AIR LINK COMMUNICATION	EACH															0
24925EC	LAYER 2 ETHERNET SWITCH-FLD MOUNT-6 PORT	EACH	1	1	1	1	1	1	1	1	1	1	1	1		1	13
24926EC	INTERIOR FIBER OPTIC PATCH PANEL	EACH															0
24927EC	LAYER 2 ETHERNET SWITCH • RACK MOUNT	EACH															0
24928EC	FIREWALL UNIT • RACK MOUNT	EACH															0
24929EC	MICROTRENCHING	LF											1022	1213	1120	1218	4573
24930EC	MICRO-DUCT PATHWAY-2 CELL	LF												13		18	31
24931EC	MICRO-DUCT PATHWAY-3 CELL	LF											1022	1200	1120	1200	4542
24932EC	CONDUIT REPAIR	LF															0
24933EC	JUNCTION BOX REPAIRED	EACH															0
04888	MESSENGER - 4500 LB	LF	5	5	5	196	185	5	402	5	191	5					1004

**NOTES:**

- ① ITS SUMMARY TOTALS CARRIED TO PROJECT GENERAL SUMMARY SHEETS.
- ② ALL NOTES FOR SPECIAL ITS AND TRAFFIC PAY ITEMS - SEE THE ITS SPECIAL NOTES.
- ③ ALL UNDERGROUND CONDUIT FROM THE PYLON TO SHELTER AND CONDUIT FOR FUTURE USE SHALL BE 1".
- ④ ALL UNDERGROUND CONDUIT FOR 12 FIBER DROP CABLE TO PYLON OR SIGNAL CABINET SHALL BE 2".
- ⑤ ALL UNDERGROUND CONDUIT FOR ELECTRIC FROM POWER SOURCE TO PYLON SHALL TO BE 2".
- ⑥ ALL UNDERGROUND CONDUIT FOR 144 FIBER SHALL BE 3" UNLESS NOTED AS MICRO TRENCH. (9TH STREET)
- ⑦ ALL UNDERGROUND CONDUIT SHALL BE INSTALLED IN OPEN TRENCHING UNLESS OTHERWISE NOTED.
- ⑧ ALL UNDERGROUND CONDUIT UNDER ROADWAYS SHALL BE RIGID STEEL. OTHER CONDUITS TO BE PVC SCHEDULE 80.
- ⑨ ALL QUANTITIES SHOWN UNDER "PROJECT ENGINEER APPROVED" TO BE APPROVED ON AN AS NEEDED BASIS IN THE FIELD BY THE PROJECT ENGINEER.
- ⑩ UNLESS SPECIFIC LOCATION INFORMATION IS PROVIDED, CONTRACTOR SHALL FIELD LOCATE JUNCTION BOXES TO THE SATISFACTION OF THE PROJECT ENGINEER ON SITE.
- ⑪ UNLESS OTHERWISE NOTED, ALL MICRO TRENCHING FOR 144 FIBER SHALL BE CUT ALONG THE EAST SIDE OF DIXIE HIGHWAY, GENERALLY CENTERED IN THE OUTSIDE LANE AND PARALLEL TO THE CURB/EOP. EXTRA CARE SHALL BE TAKEN TO AVOID TRENCHING IN WHEEL PATHS AND TO PROVIDE ADEQUATE CLEARANCE TO ALL EXISTING MANHOLES AND VALVES.

FILE NAME: C:\PWORKING\PI\100300SU.DGN

USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: 100300SU

Power InRoads v8.11.9.397



## ITS SUB SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	1004

ITEM	DESCRIPTION	UNIT	I044	I045	I046	I047	I048	I049	I050	I051	I052	I053	I054	I055	I056	I057	TOTALS CARRIED TO FINAL GEN. SUM.
01642	JUNCTION BOX-18 IN	EACH		8	6		8		11		1	9			3	6	52
04792	CONDUIT-1 IN	LF		80	66		70		134			202			80	84	716
04795	CONDUIT-2 IN	LF		216	97		153		222		23	132			100	599	1542
04797	CONDUIT-3 IN	LF												64		97	161
04820	TRENCHING AND BACKFILLING	LF		135	82		170		255		23	214			93	239	1211
04899	ELECTRICAL SERVICE	EACH		1	1		1		2			2			1	1	9
21543EN	BORE AND JACK CONDUIT	LF		87	52				40			50		64		291	584
24543EC	CLEAN (EXISTING CONDUIT CLEANED)	LF														1210	1210
01650	JUNCTION BOX (CONCRETE 32")	EACH	1	2	1	1	1	1	1	1	2	1	1	3	2		18
24921EC	CONDUIT RISER-2 IN	EACH		2			1		2			2				2	9
21077ED	FIBER OPTIC CABLE (FIBER OPTIC DROP CABLE, 12 STRAND)	LF		680	140		390		800		170	700		140	310	570	3900
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND)	LF															0
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND)	LF	1350	1360	1340	1350	1350	1375	1350	1350	1500	1350	1350	1500	1431	1459	19415
24922EC	FIBER OPTIC SPLICE ENCLOSURE	EACH		1	1		1		1		1	1		1		1	8
24923EC	CABINET FIBER TERMINATION PANEL	EACH		1	1		1		1		1	1		1		1	8
24924EC	AIR LINK COMMUNICATION	EACH															0
24925EC	LAYER 2 ETHERNET SWITCH-FLD MOUNT-6 PORT	EACH		1	1		1		1		1	1		1		1	8
24926EC	INTERIOR FIBER OPTIC PATCH PANEL	EACH															0
24927EC	LAYER 2 ETHERNET SWITCH • RACK MOUNT	EACH															0
24928EC	FIREWALL UNIT • RACK MOUNT	EACH															0
24929EC	MICROTRENCHING	LF	1200	1277	1322	1200	1335	1225	1279	1200	1229	1268	1200	1181	433		15349
24930EC	MICRO-DUCT PATHWAY-2 CELL	LF		300	132		304		457		29	338		45	216		1821
24931EC	MICRO-DUCT PATHWAY-3 CELL	LF	1200	1210	1190	1200	1200	1225	1200	1200	1200	1200	1200	1136	1131	1309	16801
24932EC	CONDUIT REPAIR	LF															0
24933EC	JUNCTION BOX REPAIRED	EACH															0
04888	MESSENGER - 4500 LB	LF															0

**NOTES:**

- ① ITS SUMMARY TOTALS CARRIED TO PROJECT GENERAL SUMMARY SHEETS.
- ② ALL NOTES FOR SPECIAL ITS AND TRAFFIC PAY ITEMS - SEE THE ITS SPECIAL NOTES.
- ③ ALL UNDERGROUND CONDUIT FROM THE PYLON TO SHELTER AND CONDUIT FOR FUTURE USE SHALL BE 1".
- ④ ALL UNDERGROUND CONDUIT FOR 12 FIBER DROP CABLE TO PYLON OR SIGNAL CABINET SHALL BE 2".
- ⑤ ALL UNDERGROUND CONDUIT FOR ELECTRIC FROM POWER SOURCE TO PYLON SHALL TO BE 2".
- ⑥ ALL UNDERGROUND CONDUIT FOR 144 FIBER SHALL BE 3" UNLESS NOTED AS MICRO TRENCH. (9TH STREET)
- ⑦ ALL UNDERGROUND CONDUIT SHALL BE INSTALLED IN OPEN TRENCHING UNLESS OTHERWISE NOTED.
- ⑧ ALL UNDERGROUND CONDUIT UNDER ROADWAYS SHALL BE RIGID STEEL. OTHER CONDUITS TO BE PVC SCHEDULE 80.
- ⑨ ALL QUANTITIES SHOWN UNDER "PROJECT ENGINEER APPROVED" TO BE APPROVED ON AN AS NEEDED BASIS IN THE FIELD BY THE PROJECT ENGINEER.
- ⑩ UNLESS SPECIFIC LOCATION INFORMATION IS PROVIDED, CONTRACTOR SHALL FIELD LOCATE JUNCTION BOXES TO THE SATISFACTION OF THE PROJECT ENGINEER ON SITE.
- ⑪ UNLESS OTHERWISE NOTED, ALL MICRO TRENCHING FOR 144 FIBER SHALL BE CUT ALONG THE EAST SIDE OF DIXIE HIGHWAY, GENERALLY CENTERED IN THE OUTSIDE LANE AND PARALLEL TO THE CURB/EOP. EXTRA CARE SHALL BE TAKEN TO AVOID TRENCHING IN WHEEL PATHS AND TO PROVIDE ADEQUATE CLEARANCE TO ALL EXISTING MANHOLES AND VALVES.

FILE NAME: G:\PWORKING\PI\TT\DI910603\100400SU.DGN

USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: 100400SU

Power InRoads v8.11.9.397

## ITS SUB SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	1005

ITEM	DESCRIPTION	UNIT	I058	I059	I060	I061	I062	I063	I064	I065	I066	PROJECT ENGINEER APPROVED	SHEET TOTAL	SUB SUMMARY SHEET 1	SUB SUMMARY SHEET 2	SUB SUMMARY SHEET 3	GRAND TOTAL
01642	JUNCTION BOX-18 IN	EACH			10		9	3					22	82	52	52	208
04792	CONDUIT-1 IN	LF			148		146	70		22	28		414	2688	827	716	4645
04795	CONDUIT-2 IN	LF			490		414	133		30	108		1175	2688	1987	1542	7392
04797	CONDUIT-3 IN	LF			90	1200	1202	978					3470	0	80	161	3711
04820	TRENCHING AND BACKFILLING	LF			351		160	71		30	125		737	1734	1283	1211	4965
04899	ELECTRICAL SERVICE	EACH			2		2	1		1	2		8	11	8	9	36
21543EN	BORE AND JACK CONDUIT	LF			304	1200	1504	1077	115				4200	599	601	584	5984
24543EC	CLEAN (EXISTING CONDUIT CLEANED)	LF	1200	1200	712			165	1126	187			4590	0	0	1210	5800
01650	JUNCTION BOX (CONCRETE 32")	EACH			2	1	1	2					6	0	5	18	29
24921EC	CONDUIT RISER-2 IN	EACH			3								3	36	25	9	73
21077ED	FIBER OPTIC CABLE (FIBER OPTIC DROP CABLE, 12 STRAND)	LF			890		360	220		120			1590	6620	5480	3900	17590
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND)	LF			756								756	0	0	0	756
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND)	LF	1200	1200	1124	1275	1277	1368	1157	462			9063	0	5297	19415	33775
24922EC	FIBER OPTIC SPLICE ENCLOSURE	EACH			2		1	2		1			6	15	13	8	42
24923EC	CABINET FIBER TERMINATION PANEL	EACH			1								1	15	13	8	37
24924EC	AIR LINK COMMUNICATION	EACH									2		2	0	0	0	2
24925EC	LAYER 2 ETHERNET SWITCH-FLD MOUNT-6 PORT	EACH			1								1	15	13	8	37
24926EC	INTERIOR FIBER OPTIC PATCH PANEL	EACH			1						1		2	0	0	0	2
24927EC	LAYER 2 ETHERNET SWITCH • RACK MOUNT	EACH			2						1		3	0	0	0	3
24928EC	FIREWALL UNIT • RACK MOUNT	EACH			2						1		3	0	0	0	3
24929EC	MICROTRENCHING	LF			17			194					211	0	4573	15349	20133
24930EC	MICRO-DUCT PATHWAY-2 CELL	LF					162	99		15			276	0	31	16801	17108
24931EC	MICRO-DUCT PATHWAY-3 CELL	LF	1200	1200	824	1200	1202	1143	1226	187			8182	0	4542	0	12724
24932EC	CONDUIT REPAIR	LF										100	100	0	0	0	100
24933EC	JUNCTION BOX REPAIRED	EACH										5	5	0	0	0	5
04888	MESSENGER - 4500 LB	LF											0	1101	1004	0	2105

**NOTES:**

- ① ITS SUMMARY TOTALS CARRIED TO PROJECT GENERAL SUMMARY SHEETS.
- ② ALL NOTES FOR SPECIAL ITS AND TRAFFIC PAY ITEMS - SEE THE ITS SPECIAL NOTES.
- ③ ALL UNDERGROUND CONDUIT FROM THE PYLON TO SHELTER AND CONDUIT FOR FUTURE USE SHALL BE 1".
- ④ ALL UNDERGROUND CONDUIT FOR 12 FIBER DROP CABLE TO PYLON OR SIGNAL CABINET SHALL BE 2".
- ⑤ ALL UNDERGROUND CONDUIT FOR ELECTRIC FROM POWER SOURCE TO PYLON SHALL TO BE 2".
- ⑥ ALL UNDERGROUND CONDUIT FOR 144 FIBER SHALL BE 3" UNLESS NOTED AS MICRO TRENCH. (9TH STREET)
- ⑦ ALL UNDERGROUND CONDUIT SHALL BE INSTALLED IN OPEN TRENCHING UNLESS OTHERWISE NOTED.
- ⑧ ALL UNDERGROUND CONDUIT UNDER ROADWAYS SHALL BE RIGID STEEL. OTHER CONDUITS TO BE PVC SCHEDULE 80.
- ⑨ ALL QUANTITIES SHOWN UNDER "PROJECT ENGINEER APPROVED" TO BE APPROVED ON AN AS NEEDED BASIS IN THE FIELD BY THE PROJECT ENGINEER.
- ⑩ UNLESS SPECIFIC LOCATION INFORMATION IS PROVIDED, CONTRACTOR SHALL FIELD LOCATE JUNCTION BOXES TO THE SATISFACTION OF THE PROJECT ENGINEER ON SITE.
- ⑪ UNLESS OTHERWISE NOTED, ALL MICRO TRENCHING FOR 144 FIBER SHALL BE CUT ALONG THE EAST SIDE OF DIXIE HIGHWAY, GENERALLY CENTERED IN THE OUTSIDE LANE AND PARALLEL TO THE CURB/EOP. EXTRA CARE SHALL BE TAKEN TO AVOID TRENCHING IN WHEEL PATHS AND TO PROVIDE ADEQUATE CLEARANCE TO ALL EXISTING MANHOLES AND VALVES.

FILE NAME: C:\PWORKING\PI\100500SU.DGN

USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: 100500SU

Power InRoads v8.11.9.397



# TRAFFIC SUB SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	T002

ITEM	DESCRIPTION	UNIT	T005	T006	T007	T008	T009	T010	T011	T012	T013	T014	T015	T016	T017	T018	SUB SHEET TOTALS
2490IEC	PVC CONDUIT-2 IN-SCHEDULE 80	LF											100	57	92	100	349
04723	BRACKET - 10 FEET	EACH											4	4	4	4	16
04780	FUSED CONNECTOR KIT	EACH											8	8	8	8	32
04792	CONDUIT-1 IN	LF											51	42	48	14	155
04794	CONDUIT-1 1/2 IN	LF															0
04795	CONDUIT-2 IN	LF											55	90	90	41	276
04811	ELECTRICAL JUNCTION BOX TYPE B	EACH											4	4	3	3	14
04820	TRENCHING AND BACKFILLING	LF											181	85	139	80	485
04830	LOOP WIRE	LF											1632	2498	1694	966	6790
04832	WIRE-NO. 12	LF											1360	2047	2029	1678	7114
04844	CABLE-NO. 14/5C	LF			310	150	300	240	320	40	270		3436	430	2906	1370	9772
04845	CABLE-NO. 14/7C	LF			280	160	300	200	330	70	310						1650
04850	CABLE-NO. 14/1 PAIR	LF											1125	1221	770	715	3831
04885	MESSENGER-10800 LB	LF											425	0	430	300	1155
04895	LOOP SAW SLOT AND FILL	LF											619	775	658	370	2422
04899	ELECTRICAL SERVICE	EACH											0	0	0	0	0
24908EC	INSTALL SIGNAL CONTROLLER - TY ATC (WITH IC ATC MODULE)	EACH	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
04932	INSTALL STEEL STRAIN POLE	EACH											4	0	2	2	8
04950	REMOVE SIGNAL EQUIPMENT	EACH	3	3	5	4	4	4	5	4	5	4	1	0	1	1	44
06472	INSTALL SPAN MOUNTED SIGN ②	EACH			4	2	2	2	4	2	4	2	2	2	2	1	29
20093NS835	INSTALL PEDESTRIAN HEAD-LED	EACH											6	6	8	6	26
20188NS835	INSTALL LED SIGNAL-3 SECTION 12 IN (TRANSIT)	EACH			2	1	1	1	2	1	2		0	1	0	0	11
20188NS835	INSTALL LED SIGNAL-3 SECTION 12 IN	EACH											12	0	11	9	32
20189NS835	INSTALL LED SIGNAL-5 SECTION 12 IN	EACH			2	1	1	1	2	1	2		0	1	0	0	11
20266ES835	INSTALL LED SIGNAL-4 SECTION 12 IN	EACH											0	0	0	0	0
21743NN	INSTALL PEDESTRIAN DETECTOR	EACH											6	6	8	6	26
23157EN	TRAFFIC SIGNAL POLE BASE	CUYD											18	0	9	8	35
24937EC	INSTALL EXTERNAL UPS SYSTEM CABINET	EACH							1		1		0	0	0	0	2
23206EC	INSTALL CONTROLLER CABINET	EACH											0	0	0	0	0
23222EC	INSTALL SIGNAL PEDESTAL	EACH											2	3	2	1	8
24589ED	LED LUMINAIRE	EACH											4	4	4	4	16
24919EC	MULTIMODE PHASE SELECTOR (WITH POLE MOUNTED ANTENNA)	EACH	1			1	1	1	1	1	1	1	1	1	1	1	12
24916ED	SYSTEM INTEGRATION	LS															0
2494IEC	LED TRANSIT SIGNAL MODULE	EACH			6	3	3	3	6	3	6			3			33
22939ND	INSTALL LUMINAIRE POLE	EACH															0

**NOTES:**

- ① TRAFFIC SUB SUMMARY TOTALS CARRIED TO TRAFFIC GENERAL SUMMARY SHEETS.
- ② SPAN MOUNTED SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.

FILE NAME: G:\PWORK\INC\PITT\_D\1998425\T00200SU.DGN

USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: T00200SU

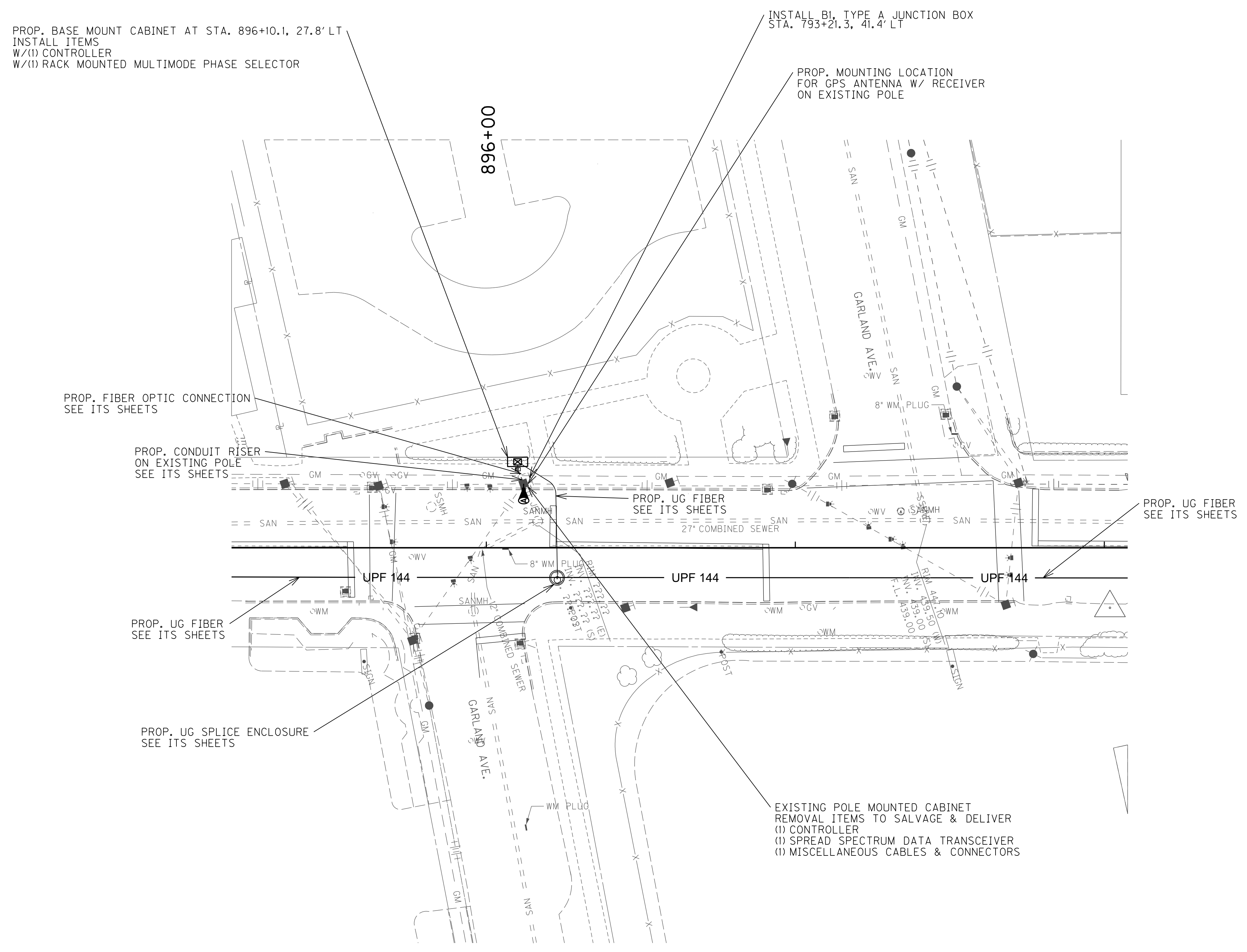
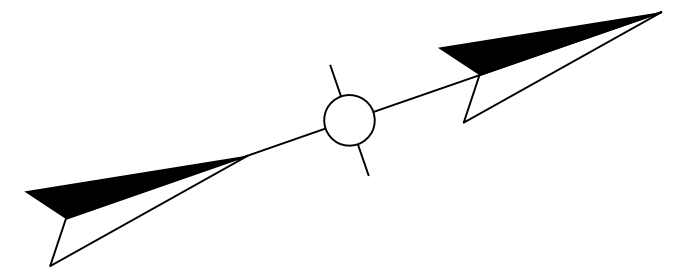
MicroStation v8.11.9.832





CROSS REFERENCES	
I016-I066	ITS AND ELEC. PLAN SHEETS
I067-I083	SPLICING PLAN SHEETS

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	T038



- NOTES:
1. THE GPS INSTALLATION CABLE SHALL BE INSTALLED FROM THE MOUNTING GPS ANTENNA WITH RECEIVER TO THE CABINET THROUGH EXISTING CONDUIT UNLESS THE EXISTING CONDUIT DOES NOT HAVE CAPACITY OR REPRESENTATIVE FROM METRO TRAFFIC SPECIFIES OTHERWISE.  
IF EXISTING CONDUIT IS DETERMINED TO NOT HAVE THE CAPACITY FOR THE GPS INSTALLATION CABLE, CONDUIT SHALL BE INSTALLED FROM THE CONDUIT RISER OR ENTRANCE BODY TO THE MAIN PULL BOX FOR THE INTERSECTION. NEW CONDUIT SHALL NOT ENTER AN EXISTING GROUND MOUNTED CONTROL CABINET. METRO TRAFFIC SHALL HAVE THE FINAL APPROVAL OF ANY NEW CONDUIT INSTALLED INVOLVING THE GPS INSTALLATION CABLE'S ROUTE TO THE CONTROL CABINET.  
NEW CONDUIT SHALL BE INSTALLED AND IS INCIDENTAL TO INSTALLATION OF THE GPS ANTENNA WITH RECEIVER. SEE ITS AND TRAFFIC DETAILS SHEETS.
  2. INSTALL TYPE 170 CONTROLLER IN MODEL 332 BASE MOUNT CABINET. INSTALL 2" RIGID STEEL CONDUIT FROM NEW CONTROLLER TO BI. EXTEND EXISTING CONDUIT RISERS ON EXISTING WOOD SIGNAL POLE TO BI.
  3. SPLICING OF SIGNAL CABLE IS PROHIBITED. IF EXISTING CABLES WILL NOT REACH THE NEW SIGNAL CABINET CONTRACTOR SHALL REPLACE EXISTING SIGNAL CABLES FROM EXISTING TERMINATION POINT (I.E., SIGNAL HEAD, EXISTING LOOP SPLICE) WITH EQUIVALENT CABLE OF ADEQUATE LENGTH TO REACH SIGNAL CABINET.

WIRING SCHEDULE

CABLE	ORIGIN	ENDING	CONNECTING
GPS CABLE	MULTIMODE PHASE SELECTOR	GPS ANTENNA W/ RECEIVER	GPS ANTENNA W/ RECEIVER

EXISTING CABLES TO BE REPLACED WITH MATCHING TYPE TO EXTEND CIRCUITS TO NEW CONTROLLER.

LEGEND	
	BASE MOUNTED CONTROLLER
	JUNCTION BOXES TYPES A, B, & C (AS DESIGNATED)
	1/4" RIGID STEEL CONDUIT (UNLESS OTHERWISE NOTED)



TRANSFORMING DIXIE HIGHWAY  
GARLAND AVENUE @ DIXIE HIGHWAY  
TRAFFIC SIGNAL SHEET

FILE NAME: C:\PWORKING\N\PITT\_D1998425\T03800PL.DGN  
 USER: TBALLARD  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: T03800PL  
 MicroStation v8.11.9.832

CROSS REFERENCES	
1016-1066	ITS AND ELEC. PLAN SHEETS
1067-1083	SPLICING PLAN SHEETS

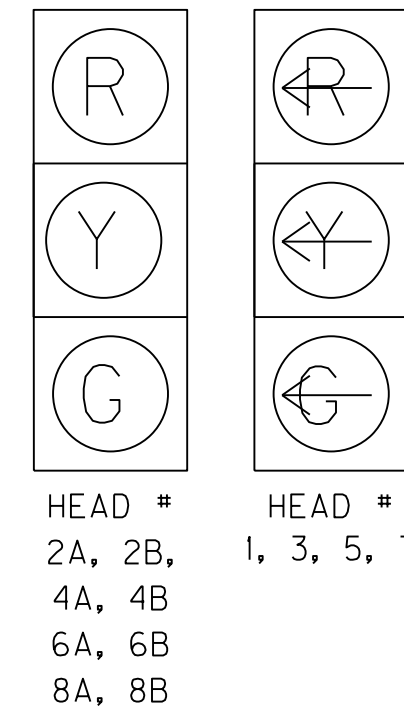
STEEL STRAIN POLES

POLE	HEIGHT	SPAN	ATT. HT.	CALC. SERV. MOMENT	SAG
A	30'	A-B	26'	70.59	5%
B	30'	B-A	26'	141.28	5%
C	30'	C-B	28'	152.49	5%
D	30'	D-C	26'	97.31	5%

WIRING SCHEDULE

CABLE	ORIGIN	ENDING	CONNECTING
1-#14/5C	CONTROLLER	SH 1	SH 1
1-#14/5C	CONTROLLER	SH 2B	SH 2A & 2B
1-#14/5C	CONTROLLER	SH 3	SH 3
1-#14/5C	CONTROLLER	SH 4B	SH 4A & 4B
1-#14/5C	CONTROLLER	SH 5	SH 5
1-#14/5C	CONTROLLER	SH 6A	SH 6A & 6B
1-#14/5C	CONTROLLER	PH 7	PH 7
1-#14/5C	CONTROLLER	PH 8B	SH 8A & 8B
1-#14/5C	CONTROLLER	PH 4A	PH 4A & 1 PED DETECTOR
1-#14/5C	CONTROLLER	PH 2B	PH 2B & 1 PED DETECTOR
1-#14/5C	CONTROLLER	PH 8A	PH 8A & 1 PED DETECTOR
1-#14/5C	CONTROLLER	PH 6B	PH 6B & 1 PED DETECTOR
1-#14/1 PAIR	CONTROLLER	JB 3	LOOP 1
1-#14/1 PAIR	CONTROLLER	JB 4	LOOP 3
3-#14/1 PAIR	CONTROLLER	JB 1	LOOP 4A & 4B & 4C
1-#14/1 PAIR	CONTROLLER	JB 2	LOOP 5
1-#14/1 PAIR	CONTROLLER	JB 1	LOOP 7
3-#14/1 PAIR	CONTROLLER	JB 4	LOOP 8A & 8B & 8C

SIGNAL HEADS



ALL COUNTDOWN PEDESTRIAN SIGNALS

LOOP SCHEDULE

LOOP	PHASE	SLOT	CHANNEL	SIZE	# OF TURNS	DIST. FROM STOP BAR
1	1	I1	1	6X30	2	0
3	3	I5	1	6X30	2	0
4A	4	I6	1	6X30	2	0
4B	4	I6	2	6X30	2	0
4C	4	I7	1	6X30	2	0
5	5	J1	1	6X30	2	0
7	7	J5	1	6X30	2	0
8A	8	J6	1	6X30	2	0
8B	8	J6	2	6X30	2	0
8C	8	J7	1	6X30	2	0

\*LOOP SPACING ASSUMES 1% GRADE EB AND -1% GRADE WB.  
CONTRACTOR TO VERIFY IN FIELD WITH ENGINEER  
ALL 6 X 30 FOOT LOOPS SHALL BE QUADRA-POLE

- INSTALL STEEL STRAIN POLE B AT STA. 147+79.84 53.43' LT.
- EXISTING BASE MOUNTED CABINET TO REMAIN.
- INSTALL 3-2" RIGID STEEL CONDUITS FROM CONTROLLER TO POLE B.
- SPLICE LOOP WIRES TO FOUR 1-PAIR LOOP LEAD-INS INSIDE 32" JB - SEE ITS SHEET FOR DETAILS
- USE 2" CONDUIT PROVIDED IN ITS SHEETS FOR TRANSITION OF LOOPS IN THE PAVEMENT 32" JB

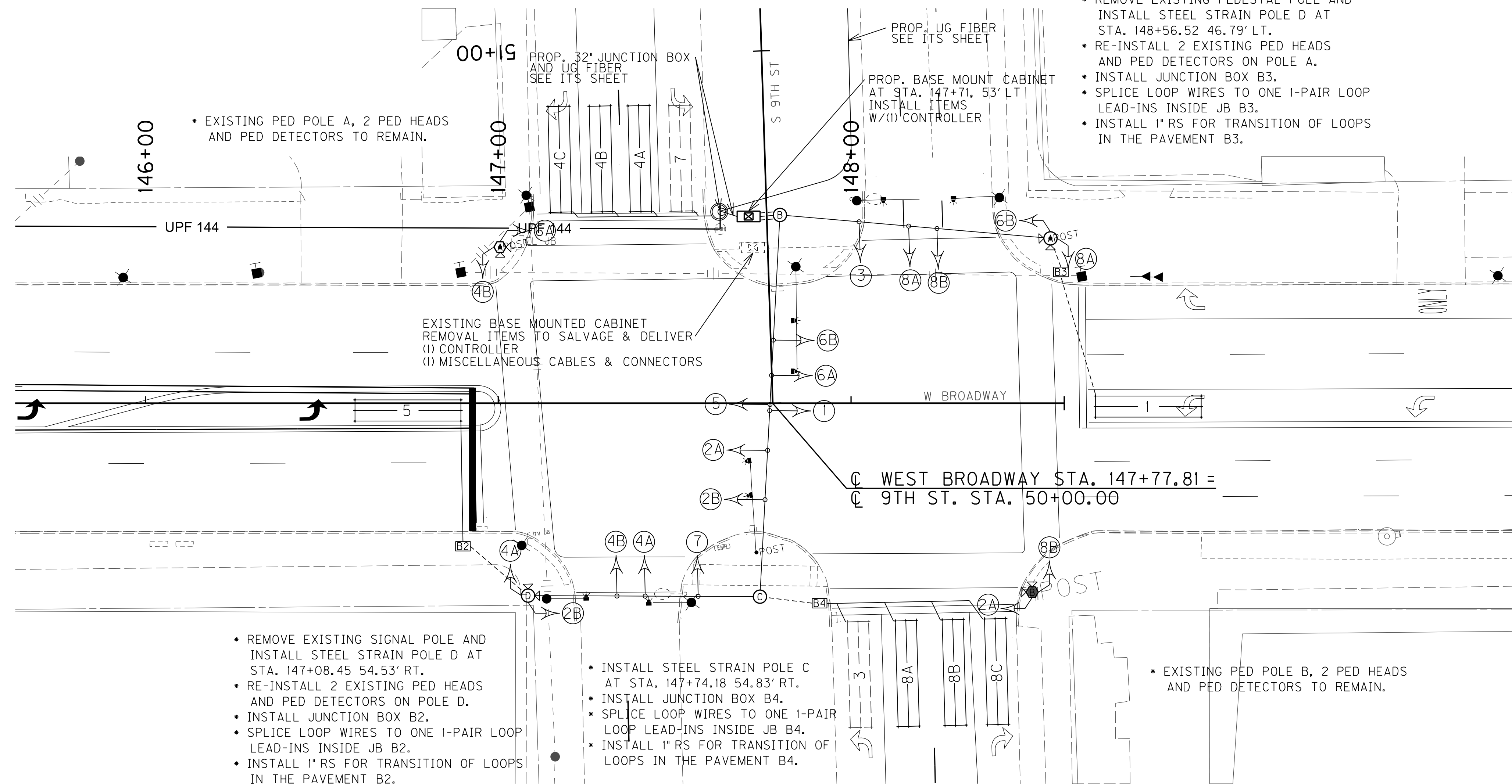
- REMOVE EXISTING PEDESTAL POLE AND INSTALL STEEL STRAIN POLE D AT STA. 148+56.52 46.79' LT.
- RE-INSTALL 2 EXISTING PED HEADS AND PED DETECTORS ON POLE A.
- INSTALL JUNCTION BOX B3.
- SPLICE LOOP WIRES TO ONE 1-PAIR LOOP LEAD-INS INSIDE JB B3.
- INSTALL 1" RS FOR TRANSITION OF LOOPS IN THE PAVEMENT B3.

FILE NAME: G:\PWORKING\ING\PITT\_D1998425\T03900PL.DGN

USER: crabar  
DATE PLOTTED: January 1, 0001

E-SHEET NAME: T03900PL

MicroStation v8.11.9.832



• EXISTING PED POLE A, 2 PED HEADS AND PED DETECTORS TO REMAIN.

EXISTING BASE MOUNTED CABINET  
REMOVAL ITEMS TO SALVAGE & DELIVER  
(1) CONTROLLER  
(1) MISCELLANEOUS CABLES & CONNECTORS

- REMOVE EXISTING SIGNAL POLE AND INSTALL STEEL STRAIN POLE D AT STA. 147+08.45 54.53' RT.
- RE-INSTALL 2 EXISTING PED HEADS AND PED DETECTORS ON POLE D.
- INSTALL JUNCTION BOX B2.
- SPLICE LOOP WIRES TO ONE 1-PAIR LOOP LEAD-INS INSIDE JB B2.
- INSTALL 1" RS FOR TRANSITION OF LOOPS IN THE PAVEMENT B2.

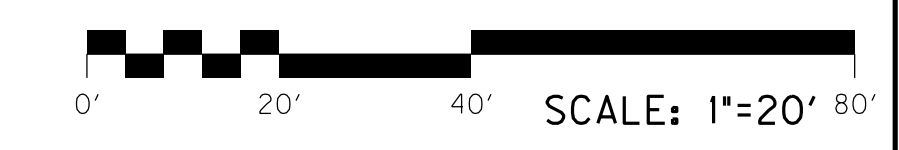
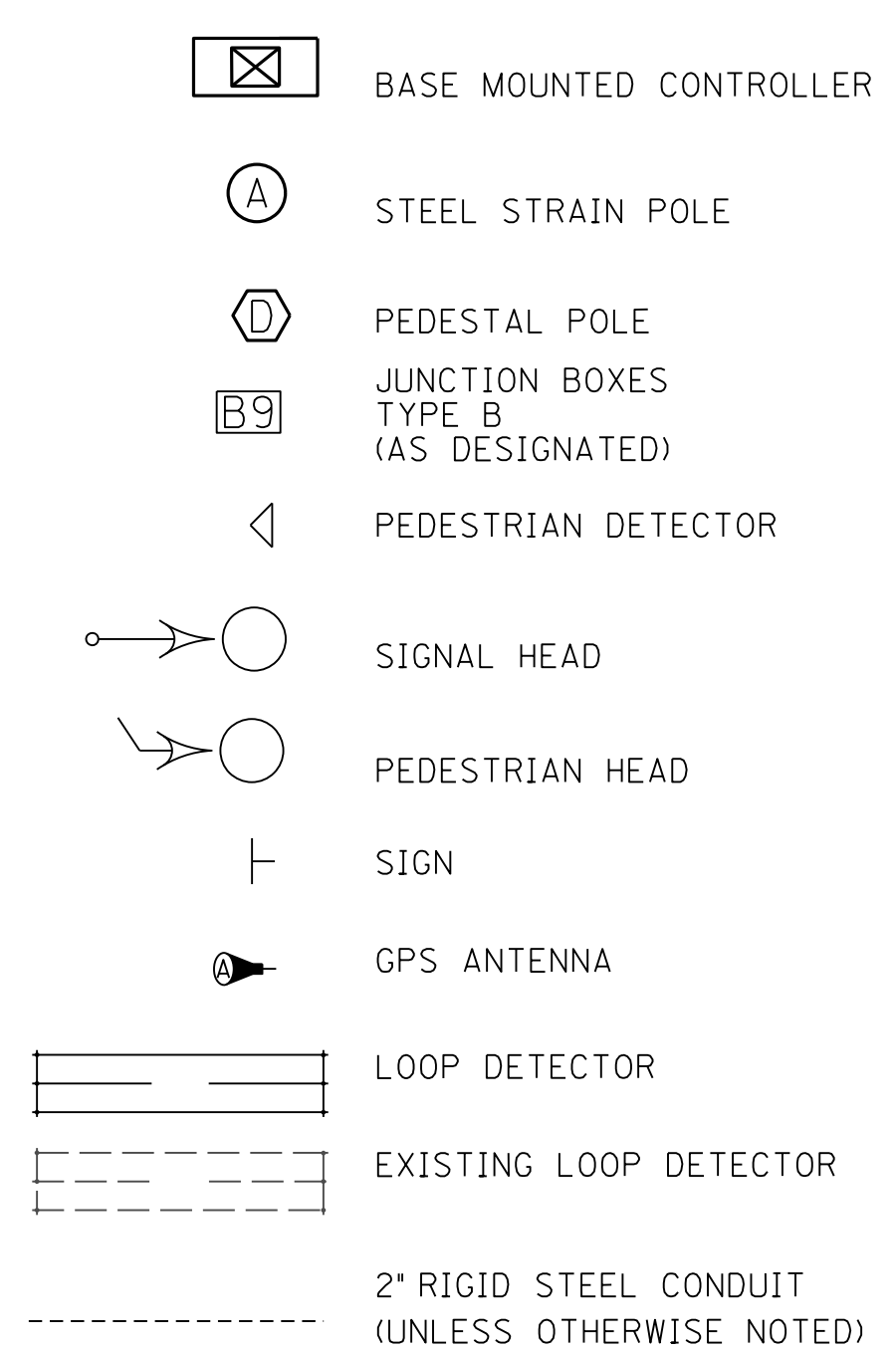
- INSTALL STEEL STRAIN POLE C AT STA. 147+74.18 54.83' RT.
- INSTALL JUNCTION BOX B4.
- SPLICE LOOP WIRES TO ONE 1-PAIR LOOP LEAD-INS INSIDE JB B4.
- INSTALL 1" RS FOR TRANSITION OF LOOPS IN THE PAVEMENT B4.

• EXISTING PED POLE B, 2 PED HEADS AND PED DETECTORS TO REMAIN.

NOTES:

1. PEDESTRIAN DETECTORS SHOULD BE INSTALLED A MAXIMUM OF 10" FROM SIDEWALK FOR ADA COMPLIANCE.
2. REMOVE ALL SIGNAL HEADS, SIGNAL POLES AND MAST ARMS TO SALVAGE AND DELIVER
3. THE CABINET SHALL SUPPLY CLAMP ASSEMBLIES FOR MESSENGER CABLE ATTACHMENTS BASED ON THE PRELIMINARY DESIGN OF THE POLES. IF THE ATTACHMENT LOCATIONS FOR CLAMP ASSEMBLIES ARE MORE THAN 2 FEET FROM THE TOP OF THE POLE, THE CONTRACTOR SHALL PROVIDE REPLACEMENT CLAMP ASSEMBLIES THAT WILL FACILITATE THE INSTALLATION. CONTRACTOR SUPPLIED CLAMP ASSEMBLIES SHALL BE INCIDENTAL TO THE INSTALLATION OF THE STEEL STRAIN POLE. CONTRACTOR SUPPLIED CLAMP ASSEMBLIES SHALL CONFORM TO THE SPECIFICATIONS STATED ON THE POLE BASE/SIGNAL HEAD DETAILS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE REPLACEMENT ASSEMBLIES TO THE DIVISION OF TRAFFIC OPERATIONS FOR APPROVAL.
4. COORDINATE LOCATION OF TURN ARROWS SHOWN ON PAVEMENT MARKING SHEETS WITH ENGINEER TO MINIMIZE PLACEMENT OF ARROWS ON TRAFFIC DETECTOR LOOPS.

LEGEND



TRANSFORMING DIXIE HIGHWAY  
W. BROADWAY @ S. 9TH ST.

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	T039





PROEJECT GENERAL SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	P008

ITEM	DESCRIPTION	UNIT	ROADWAY	BUS STATION	ITS	TRAFFIC	UTILITY - WATER											PROJECT TOTAL
01810	STANDARD CURB AND GUTTER	LF		401														401
01811	STANDARD CURB AND GUTTER MOD	LF	23552	43														23595
01875	STANDARD HEADER CURB	LF		1951														1951
01876	STANDARD HEADER CURB MOD	LF	15783															15783
01877	SPECIAL HEADER CURB	LF		1702														1702
01921	STANDARD BARRIER MEDIAN TYPE 4	SOYD	2662															2662
2134IND	BOLLARDS	EACH	5															5
02014	BARRICADE-TYPE III	EACH	20															20
02015	CEMENT CONCRETE ISLAND	SOYD	466															466
02200	ROADWAY EXCAVATION	CUYD	10956															10956
02545	CLEARING AND GRUBBING	LS	1															1
02562	TEMPORARY SIGNS	SOFT	2400															2400
02568	MOBILIZATION	LS	1															1
02569	DEMOBILIZATION	LS	1															1
02650	MAINTAIN & CONTROL TRAFFIC	LS	1															1
02653	LANE CLOSURE	EACH	12	25														37
02671	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	2															2
02676	MOBILIZATION FOR MILL & TEXT	LS	1															1
02701	TEMP SILT FENCE	LF	5273															5273
02705	SILT TRAP TYPE C	EACH	278															278
02708	CLEAN SILT TRAP TYPE C	EACH	834															834
02720	SIDEWALK-4 IN CONCRETE	SOYD	18542	1481														20023
02726	STAKING	LS	1															1
02775	ARROW PANEL	EACH	4															4
05952	TEMP MULCH	SOYD	52740															52740
05953	TEMP SEEDING AND PROTECTION	SOYD	39555															39555
05990	SODDING	SOYD	11087	98														11185
06407	SBM ALUM SHEET SIGNS .125 IN	SOFT	144	20														164
06510	PAVE STRIPING-TEMP PAINT-4 IN	LF	10000															10000
06514	PAVE STRIPING-PERM PAINT-4 IN	LF	16755	673														17428
06515	PAVE STRIPING-PERM PAINT-6 IN	LF	47807	3621														51428
06530	PAVE STRIPING REMOVAL-4 IN	LF	60000															60000
06531	PAVE STRIPING REMOVAL-6 IN	LF	100000															100000
06550	PAVE STRIPING-TEMP REM TAPE-W	LF	5000															5000
06551	PAVE STRIPING-TEMP REM TAPE-Y	LF	5000															5000
06565	PAVE MARKING-THERMO X-WALK-6 IN	LF	10150															10150
06568	PAVE MARKING-THERMO STOP BAR-24IN	LF	1562	40														1602
06572	PAVE MARKING-DOTTED LANE EXTEN	LF	195															195
06573	PAVE MARKING-THERMO STR ARROW	EACH	7															7
06574	PAVE MARKING-THERMO CURV ARROW	EACH	143	3														146
06575	PAVE MARKING-THERMO COMB ARROW	EACH	20															20
0660INC	PAVE MARKING-PAINT WORDS	EACH	10	8														18
22520EN	PAVE MARKING-THERMO YIELD BAR-36 IN	LF	42															42
23139EN	STRIPING REMOVAL	LF	175000															175000
24935EC	CONCRETE PAINT (MEDIAN)	SOYD	1233															1233
10020NS	FUEL ADJUSTMENT	DOLL	26285															26285
10030NS	ASPHALT ADJUSTMENT	DOLL	48964															48964
20094ES835	TEMP RELOCATION OF SIGNAL HEAD	EACH	375															375
22665EN	REMOVE NON-MOUNTABLE MEDIAN	SOYD	642															642
23158ES505	DETECTABLE WARNINGS	SOFT	2205	871														3076
24489EC	INLAID PAVEMENT MARKER	EACH	1830															1830
02242	WATER	MGAL	1998															1998
24918ES601	CONCRETE-CLASS A (VERGE & MEDIAN)	SOYD	5849	347														6196
23214EC	BRICK-PAVERS FOR ROADWAY (VERGE)	SOYD	150	232														382
20000ES724	TREE (IN TREE GRATE)	EACH	30	42														72
2491IED	STRUCTURAL SOIL VAULT SYSTEM (SSVS)	SOYD	120	218														338
20000ES724	TREE	EACH	6	16														22
20000ES724	TREE (ORNAMENTAL)	EACH	7															7
2000IES724	SHRUB (LARGE SHRUBS MORE THAN 3' TALL)	EACH	33															33

NOTES:

- ① THE PROJECT TOTALS INCLUDE THE RESPECTIVE TOTALS FROM THE ROADWAY, BUS STATIONS, ITS, TRAFFIC, AND UTILITY GENERAL SUMMARY SHEETS
- ② NOTES FOR THE ITEMS ARE SHOWN ON THE INDIVIDUAL SHEETS.

FILE NAME: G:\PWORK\INC\PITT\_D1998425\APO0800SU.DGN  
 USER: cr@bar  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: P00800SU  
 Power InRoads v8.11.9.397

PROEJECT GENERAL SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	P010

ITEM	DESCRIPTION	UNIT	ROADWAY	BUS STATION	ITS	TRAFFIC	UTILITY - WATER											PROJECT TOTAL
01642	JUNCTION BOX-18 IN	EACH			208													208
04792	CONDUIT-1 IN	LF			4645	534												5179
04795	CONDUIT-2 IN	LF	125		7392	1345												8862
04797	CONDUIT-3 IN	LF			3711													3711
04820	TRENCHING AND BACKFILLING	LF	400		4965	1742												7107
04888	MESSENGER-4500 LB	LF			2105													2105
04899	ELECTRICAL SERVICE	EACH			36	1												37
21543EN	BORE AND JACK CONDUIT	LF			5984													5984
24543EC	CLEAN (EXISTING CONDUIT CLEANED)	LF			5800													5800
01650	JUNCTION BOX (CONCRETE 32")	EACH			29													29
24921EC	CONDUIT RISER-2 IN	EACH			73													73
21077ED	FIBER OPTIC CABLE (FIBER OPTIC DROP CABLE, 12 STRAND)	LF			17590													17590
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND)	LF			756													756
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND)	LF			33775													33775
24922EC	FIBER OPTIC SPLICE ENCLOSURE	EACH			42													42
24923EC	CABINET FIBER TERMINATION PANEL	EACH			37													37
24924EC	AIR LINK COMMUNICATION	EACH			2													2
24925EC	LAYER 2 ETHERNET SWITCH-FLD MOUNT-6 PORT	EACH			37													37
24926EC	INTERIOR FIBER OPTIC PATCH PANEL	EACH			2													2
24927EC	LAYER 2 ETHERNET SWITCH - RACK MOUNT	EACH			3													3
24928EC	FIREWALL UNIT - RACK MOUNT	EACH			3													3
24929EC	MICROTRENCHING	LF			20177													20177
24930EC	MICRO-DUCT PATHWAY-2 CELL	LF			17108													17108
24931EC	MICRO-DUCT PATHWAY-3 CELL	LF			12768													12768
24932EC	CONDUIT REPAIR	LF			100													100
24933EC	JUNCTION BOX REPAIRED	EACH			5													5
24901EC	PVC CONDUIT-2 IN-SCHEDULE 80	LF				1881												1881
04723	BRACKET - 10 FEET	EACH				52												52
04780	FUSED CONNECTOR KIT	EACH				104												104
04794	CONDUIT - 1 1/2 IN	LF				40												40
04811	ELECTRICAL JUNCTION BOX TYPE B	EACH				57												57
04830	LOOP WIRE	LF	7100			25525												32625
04832	WIRE-NO. 12	LF				22449												22449
04844	CABLE-NO. 14/5C	LF				28657												28657
04845	CABLE-NO. 14/7C	LF				1650												1650
04850	CABLE-NO. 14/1 PAIR	LF				13919												13919
04885	MESSENGER-10800 LB	LF				3870												3870
04895	LOOP SAW SLOT AND FILL	LF	1800			9799												11599
24908EC	INSTALL SIGNAL CONTROLLER - TY ATC (WITH IC ATC MODULE)	EACH				35												35
04932	INSTALL STEEL STRAIN POLE	EACH				33												33
04950	REMOVE SIGNAL EQUIPMENT	EACH				34												34
06472	INSTALL SPAN MOUNTED SIGN	EACH				38												38
20093NS835	INSTALL PEDESTRIAN HEAD-LED	EACH				84												84
20188NS835	INSTALL LED SIGNAL-3 SECTION, 12 IN (TRANSIT)	EACH				11												11
20188NS835	INSTALL LED SIGNAL-3 SECTION, 12 IN	EACH				116												116
20189NS835	INSTALL LED SIGNAL-5 SECTION, 12 IN	EACH				11												11
20266ES835	INSTALL LED SIGNAL-4 SECTION, 12 IN	EACH				8												8
21743NN	INSTALL PEDESTRIAN DETECTOR	EACH				84												84
23157EN	TRAFFIC SIGNAL POLE BASE	CUYD				145												145
24937EC	INSTALL EXTERNAL UPS SYSTEM CABINET	EACH				2												2
23206EC	INSTALL CONTROLLER CABINET	EACH				6												6
23222EC	INSTALL SIGNAL PEDESTAL	EACH				26												26
24589ED	LED LUMINAIRE	EACH				32												32
24919EC	MULTIMODE PHASE SELECTOR (WITH POLE MOUNTED ANTENNA)	EACH				1												1
24916ED	SYSTEM INTEGRATION	LS				1												1
24941EC	LED TRANSIT SIGNAL MODULE	EACH				33												33
22939ND	INSTALL LUMINARE POLE	EACH				2												2

NOTES:

- ① THE PROJECT TOTALS INCLUDE THE RESPECTIVE TOTALS FROM THE ROADWAY, BUS STATIONS, ITS, TRAFFIC, AND UTILITY GENERAL SUMMARY SHEETS
- ② NOTES FOR THE ITEMS ARE SHOWN ON THE INDIVIDUAL SHEETS.

FILE NAME: G:\PWORKING\PI\TT\DI93380\N\_SUM\_GEN.DGN

USER: crabar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: P01000SU

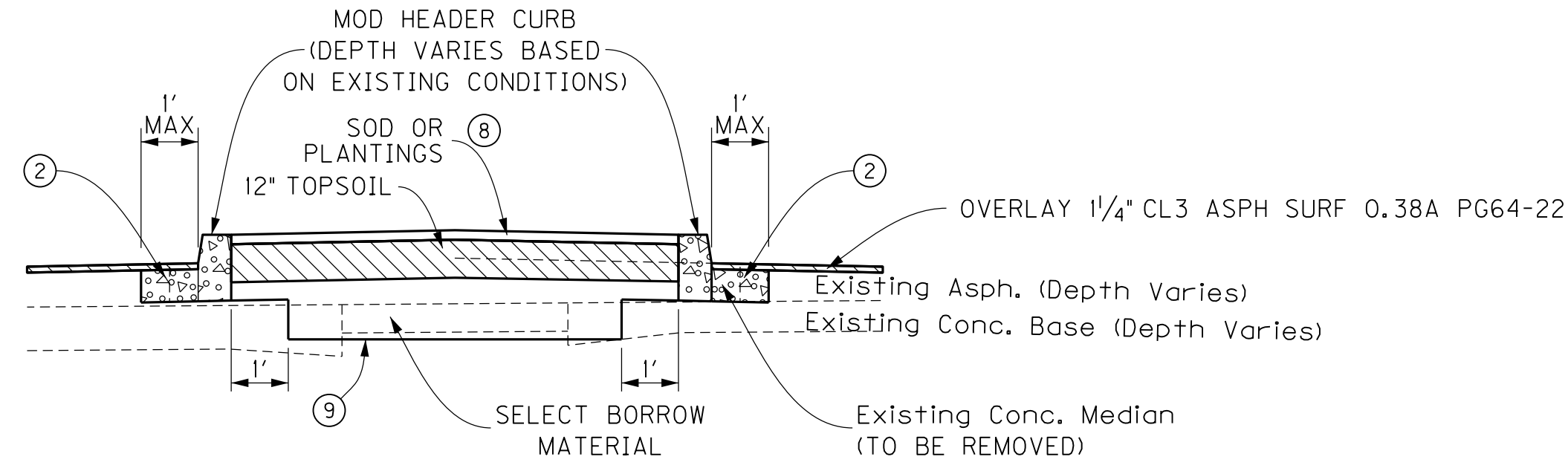
Power InRoads v8.11.9.397

# ROADWAY TYPICAL SECTIONS

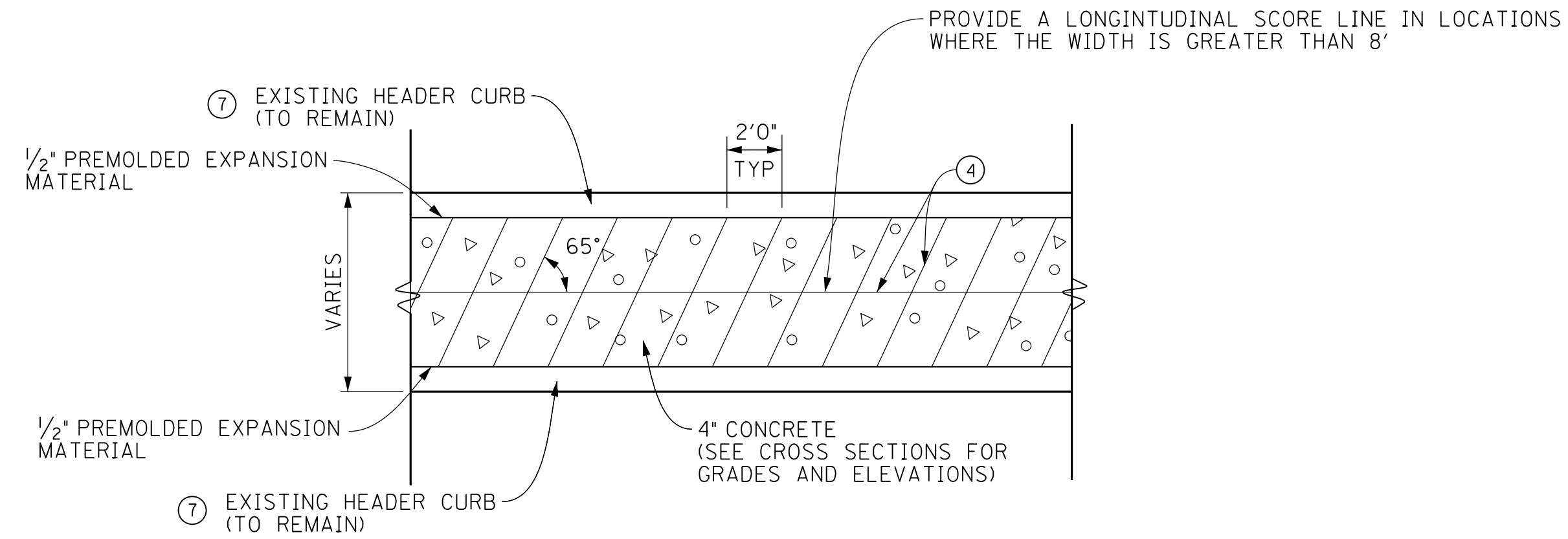
COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	ROOIB

## GENERAL NOTES

- ① SOD ALL DISTURBED AREAS.
- ② REMOVE EXISTING ASPHALT TO EXISTING CONCRETE BASE. REFILL WITH CLASS A CONCRETE TO WITHIN 1/4" OF PROPOSED SURFACE. INCIDENTAL TO CURB AND GUTTER CONSTRUCTION.
- ③ CONTRACTION JOINTS 10' ON CENTER (1" DEPTH). AN ATTEMPT SHOULD BE MADE TO ALIGN WITH THE CURB JOINT LOCATIONS.
- ④ 1/4" DEEP SCORED JOINT.
- ⑤ 1/2" EXPANSION JOINT MATERIAL REQUIRED WHERE ABUTTING FIXED STRUCTURES, AT LOCATIONS IDENTIFIED ON RPM-152-08, AND AT ALL COLD JOINT LOCATIONS.
- ⑥ ALL JOINTS WILL BE TOOLED. NO SAW CUTTING PERMITTED.
- ⑦ EXISTING HEADER CURB TO REMAIN ONLY IN LIMITS STATED IN DETAIL I.
- ⑧ SEE ROADWAY PLAN SHEETS FOR LOCATIONS FOR EITHER CONCRETE, SOD, OR PLANTINGS IN THE MEDIAN.
- ⑨ REMOVE EXISTING MATERIAL TO SOIL LIMITS. ADDITIONAL DEPTH REQUIRED IN PLANTING AREAS, SEE LANDSCAPE DETAILS SHEET R138.

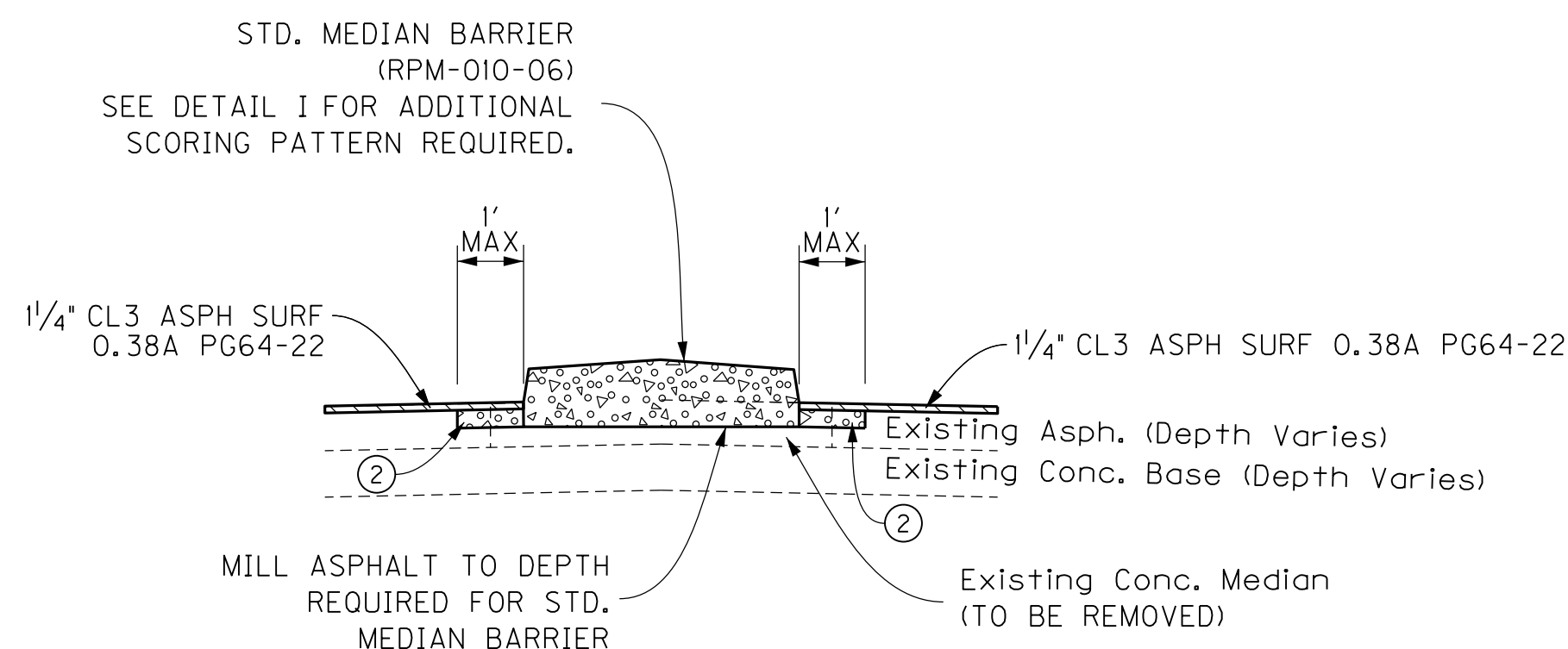


**DETAIL E**

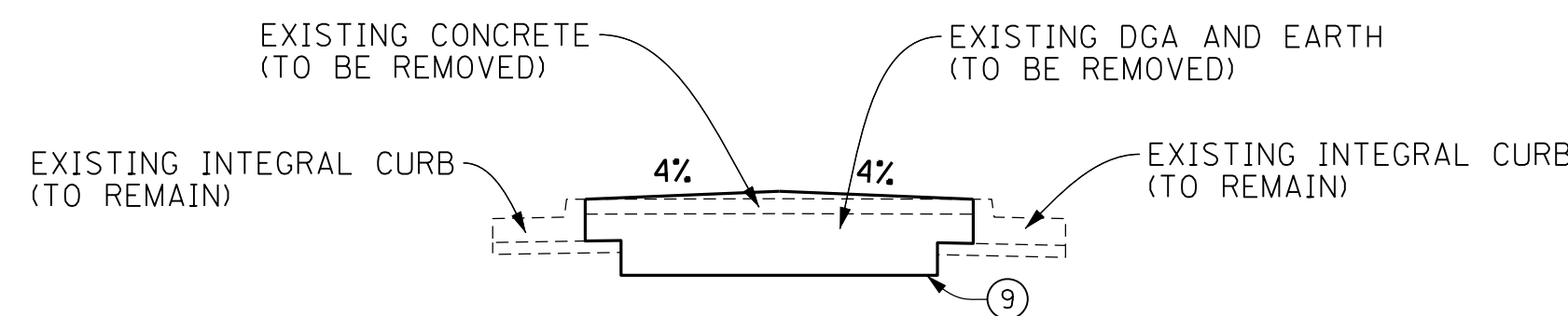


**MEDIAN CONCRETE SCORING PATTERN**

**DETAIL I**



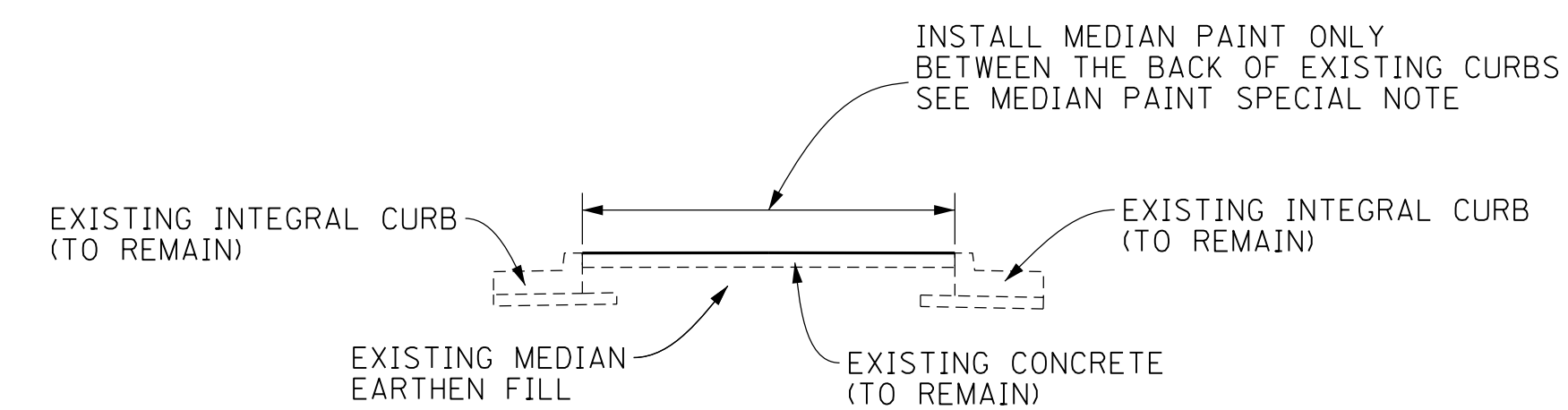
**DETAIL F**



**CONCRETE MEDIAN REMOVAL WITH LANDSCAPE REPLACEMENT DETAIL**

**STA. 654 + 55 – STA. 665 + 28**

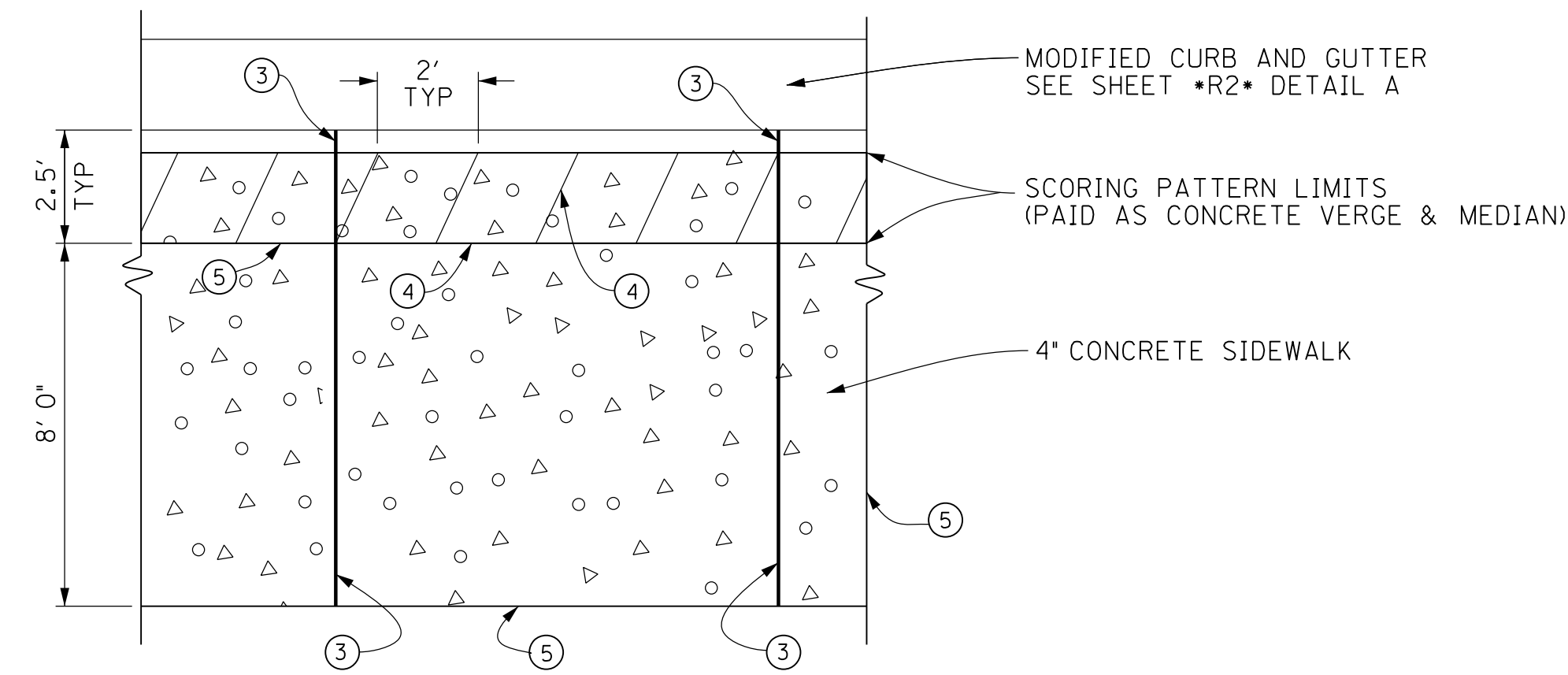
**DETAIL G**



**MEDIAN PAINT DETAIL**

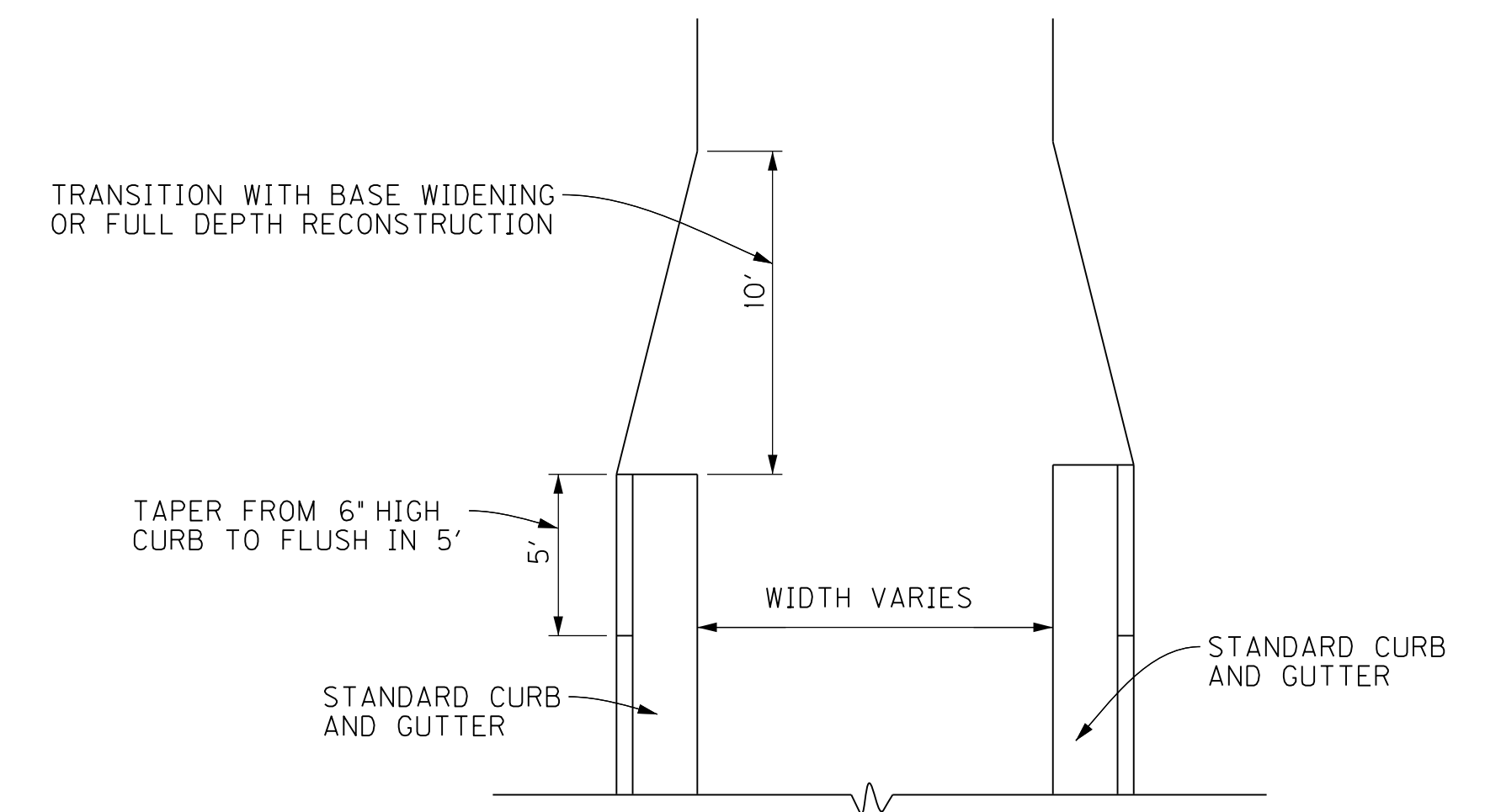
**STA. 665 + 28 – STA. 677 + 38**

**DETAIL H**



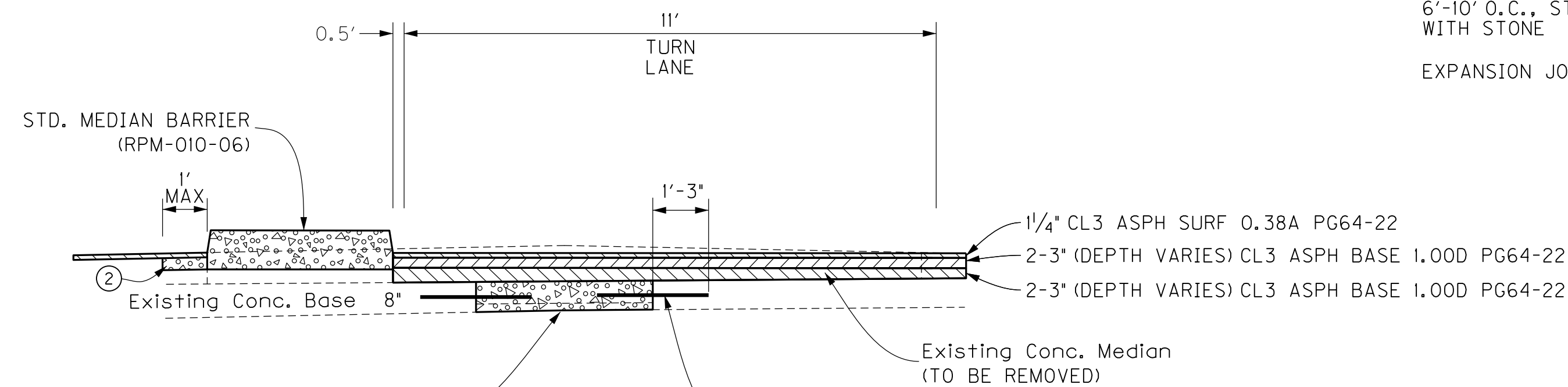
**CONCRETE AND VERGE SCORING PATTERN ENLARGEMENT**

**DETAIL J**



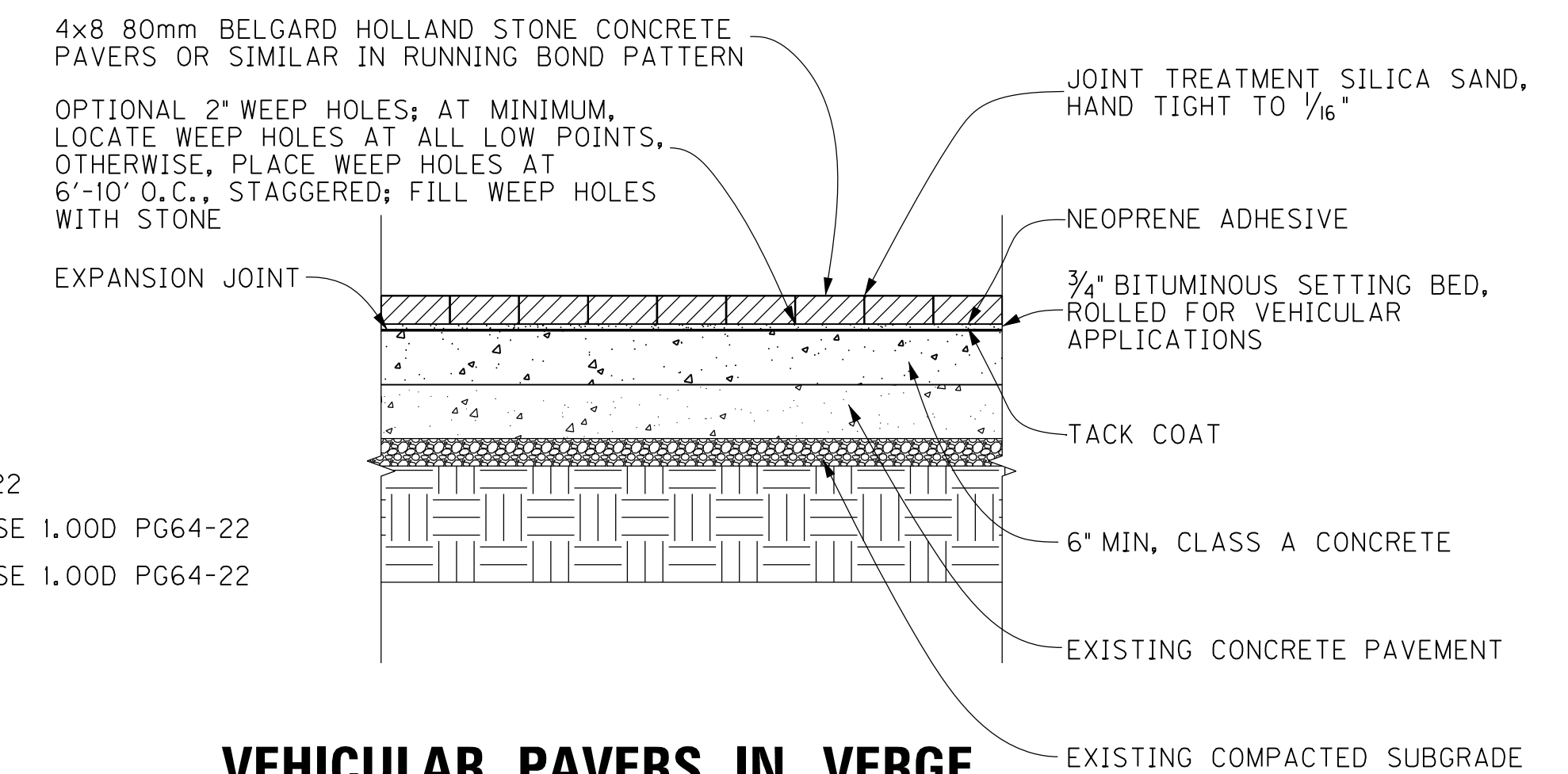
**CURB AND PAVEMENT TRANSITIONS**

**DETAIL K**



**FULL DEPTH PAVEMENT TURN LANE**

**DETAIL L**



**VEHICULAR PAVERS IN VERGE**

**DETAIL M**

TRANSFORMING DIXIE HIGHWAY  
MEDIAN AND PAVEMENT DETAILS

SCALE: 1"=NTS

FILE NAME: G:\P\WORKING\N\PI\TT\DI998425\ROOIB\T.S.DGN

USER: ppoffen  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: ROOIB\T.S.

MicroStation v8.11.9.832

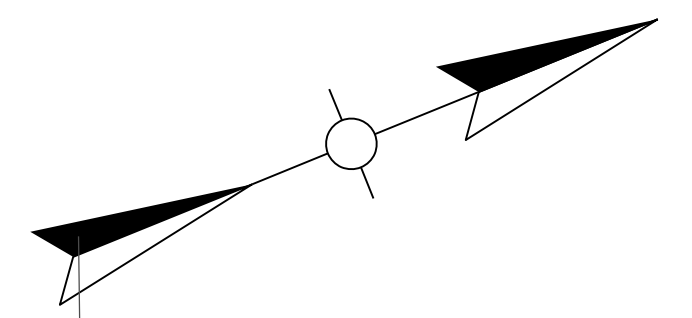
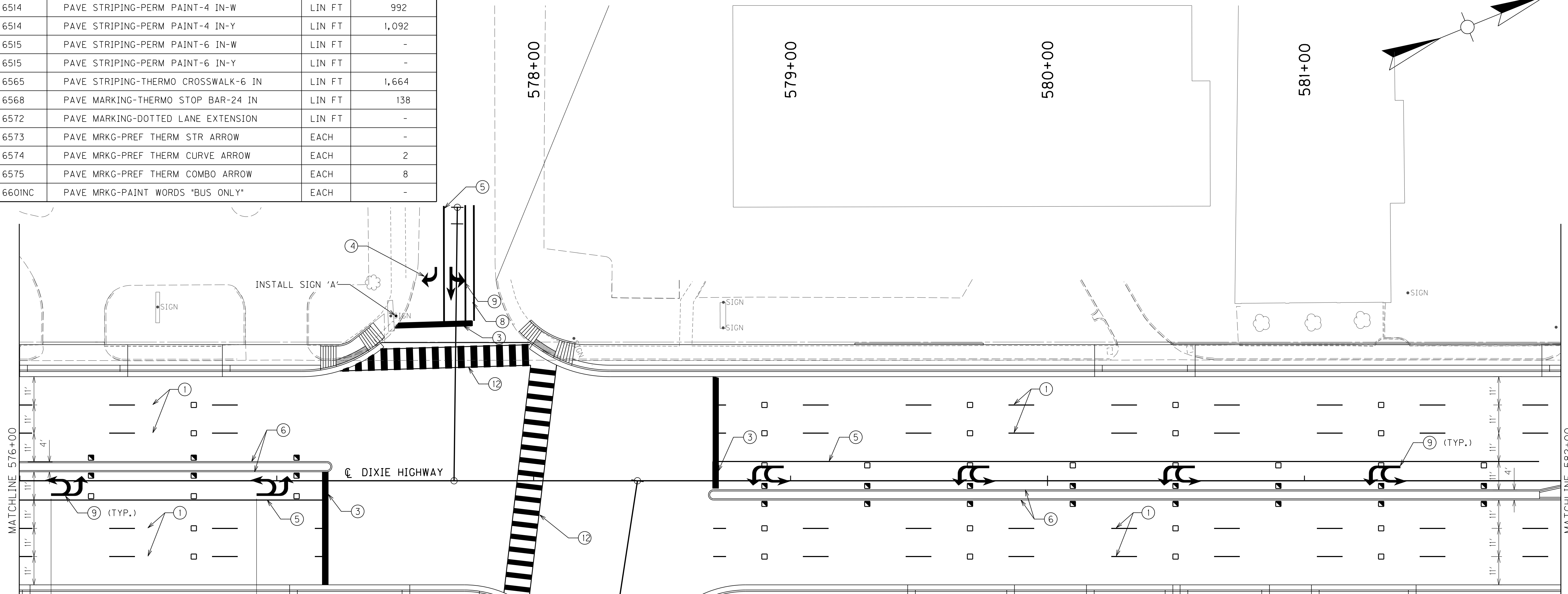


# PIPE DRAINAGE SUMMARY

SHEET NO.	ITEM CODE	DESIGN pH LEVEL	SLOTTED DRAIN PIPE-12 IN	STORM SEWER PIPE-12 IN	STORM SEWER PIPE-15 IN	STORM SEWER PIPE-18 IN	STORM SEWER PIPE-24 IN	STORM SEWER PIPE-27 IN	STORM SEWER PIPE-30 IN	STORM SEWER PIPE-33 IN	STORM SEWER PIPE-36 IN	CURB BOX INLET TYPE A	CURB BOX INLET TYPE A MOD	CURB BOX INLET TYPE B	CURB BOX INLET TYPE B MODIFIED	CURB BOX INLET TYPE F	CURB BOX INLET TYPE F MOD	DROP BOX INLET TYPE II	DROP BOX INLET TYPE II MOD	DROP BOX INLET TY I3C(MOD)	CAP CURB BOX INLET	JUNCTION BOX	CONCRETE-CLASS A	REMARKS
	UNIT TO BID		LF	LF	LF	LF	LF	LF	LF	LF	LF	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	CUYD	
R244	641+19 TO 643+34	M						4	8		4	3		1									5.3	
R245	644+97 TO 648+95	M					4	8				1		2									7.3	
R246	649+26 TO 652+27	M			19							2			1							1		
R247	652+63 TO 681+42	M			6	4							2					1		1	2		2.2	
R248	683+87 TO 687+24	M	42	16	49												4		1		2	1	0.9	
R249	689+40 TO 691+00	M			136												1						0.9	
R250	691+58 TO 48+76	M			10																2			
R251	49+20 TO 51+15	M										1		1			1							
SHEET 1 TOTALS			1387	1959	339	8	0	0	7	8	8	98	38	5	2	8	1	2	0	2	36	6	19.6	
SHEET 2 TOTALS			42	16	220	4	4	8	4	0	4	7	7	4	2	0	7	1	1	1	7	1	16.5	
TOTAL PROJECT			1429	1975	559	12	4	8	11	8	12	105	45	9	4	8	8	3	1	3	43	7	36.1	

FILE NAME: C:\PWORKING\N\PITT\_D1998425\AR0020DSU.DGN  
 USER: ppoffen  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: RO020DSU  
 MicroStation v8.11.9.832

PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	992
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	1,092
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	1,664
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	138
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	-
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	2
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	8
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-



FILE NAME: C:\PWORKING\PI\TT\_D1998425\R08700DS.DGN  
 USER: ppoffen  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: R08700DS  
 MicroStation v8.11.9.832

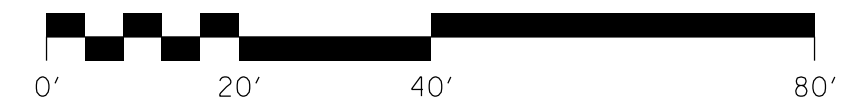
- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
- ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
- ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
- ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
- ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
- ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
- ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
- ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
- ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
- ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
- ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"
- ⑫ PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 24 INCH WHITE, 36 INCH GAP (8' WIDTH)

RIGHT TURN  
ON RED  
MUST  
YIELD TO  
U-TURN

SIGN 'A'  
R10-30  
30" x 36"

NOTE: SIGNS TO BE PROVIDED BY KYTC  
AND INSTALLED BY CONTRACTOR.

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	◻	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	31
6590	◼	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	22

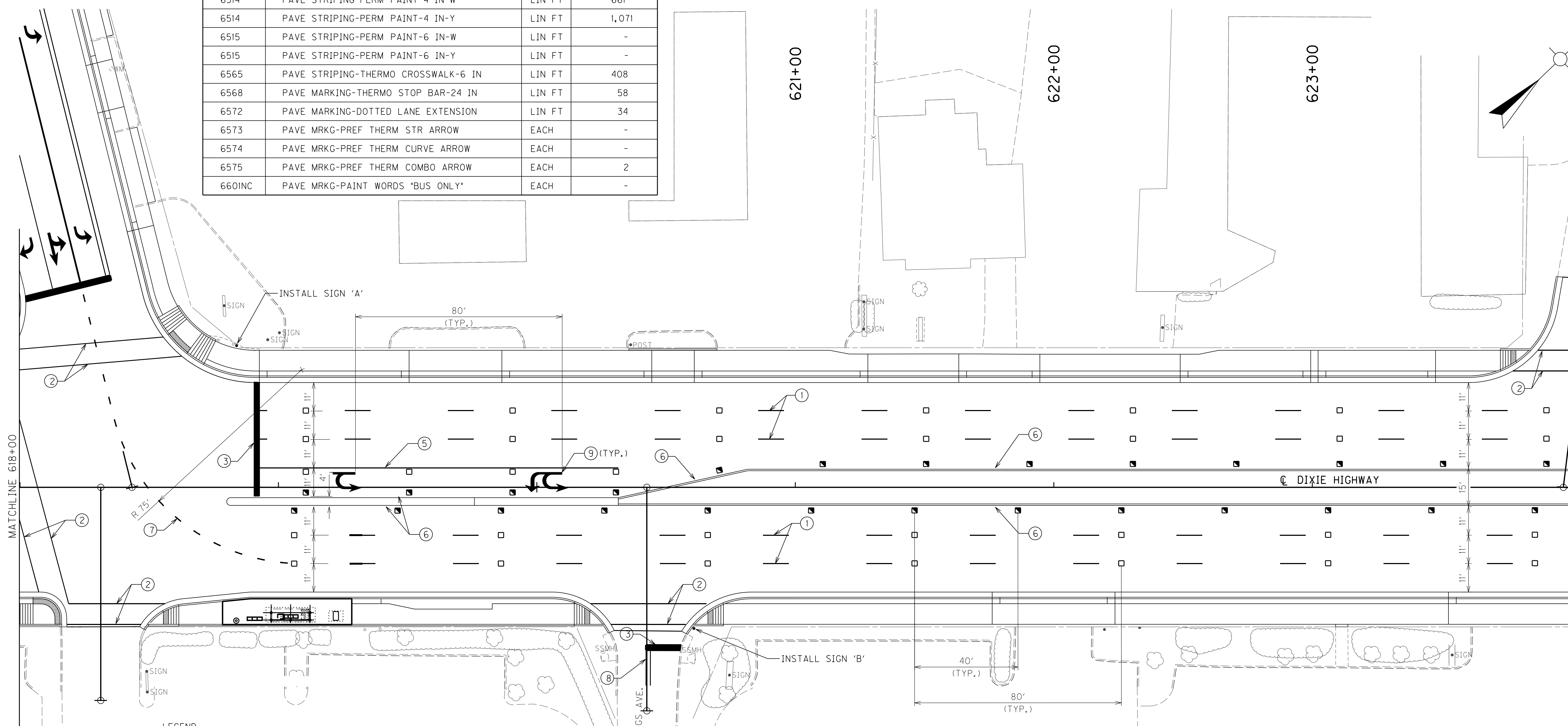


SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
 PAVEMENT MARKING SHEET  
 STA. 576+00 TO STA. 582+00

FOR THE CONTINUATION OF  
ROCKFORD LANE &  
QUANTITIES SEE SHEET R108

PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	661
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	1,071
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	408
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	58
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	34
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	-
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	2
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-



LEGEND

- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
- ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
- ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
- ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
- ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
- ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
- ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
- ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
- ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
- ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
- ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

East Rockford Lane

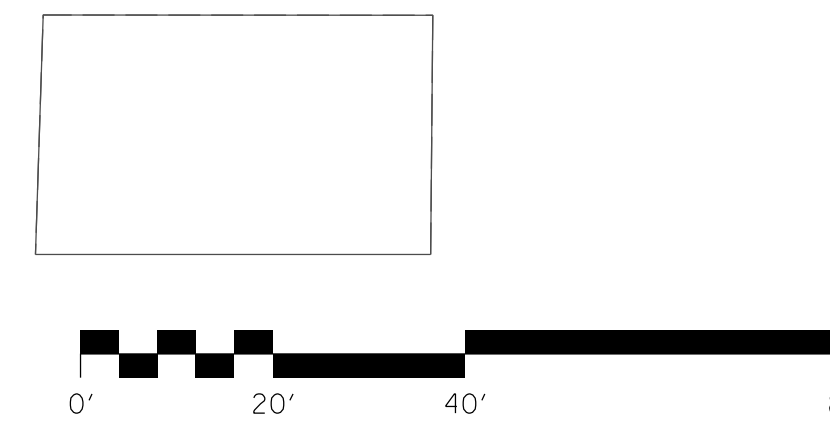
Stallings Avenue

SIGN 'A'  
SERIES C  
(12" UPPER CASE)  
18" x 96"

SIGN 'B'  
SERIES C  
(12" UPPER CASE)  
18" x 90"

NOTE: SIGNS TO BE PROVIDED BY KYTC  
AND INSTALLED BY CONTRACTOR.

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	□	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	32
6590	■	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	26



SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 618+00 TO STA. 624+00

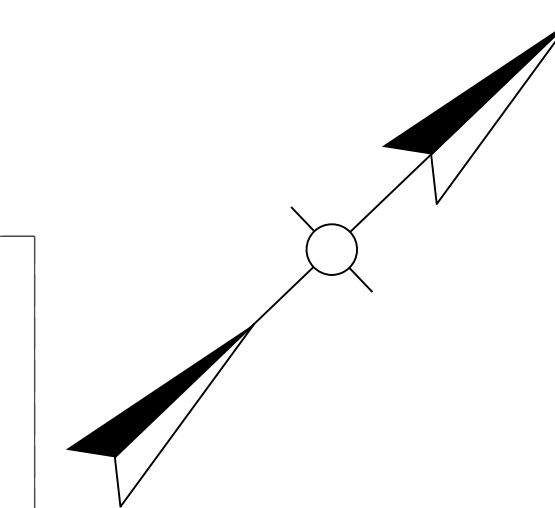
FILE NAME: C:\PWORKING\PI\TT\_D1998425\R094000S.DGN

USER: ppfoffen  
DATE PLOTTED: August 17, 2017

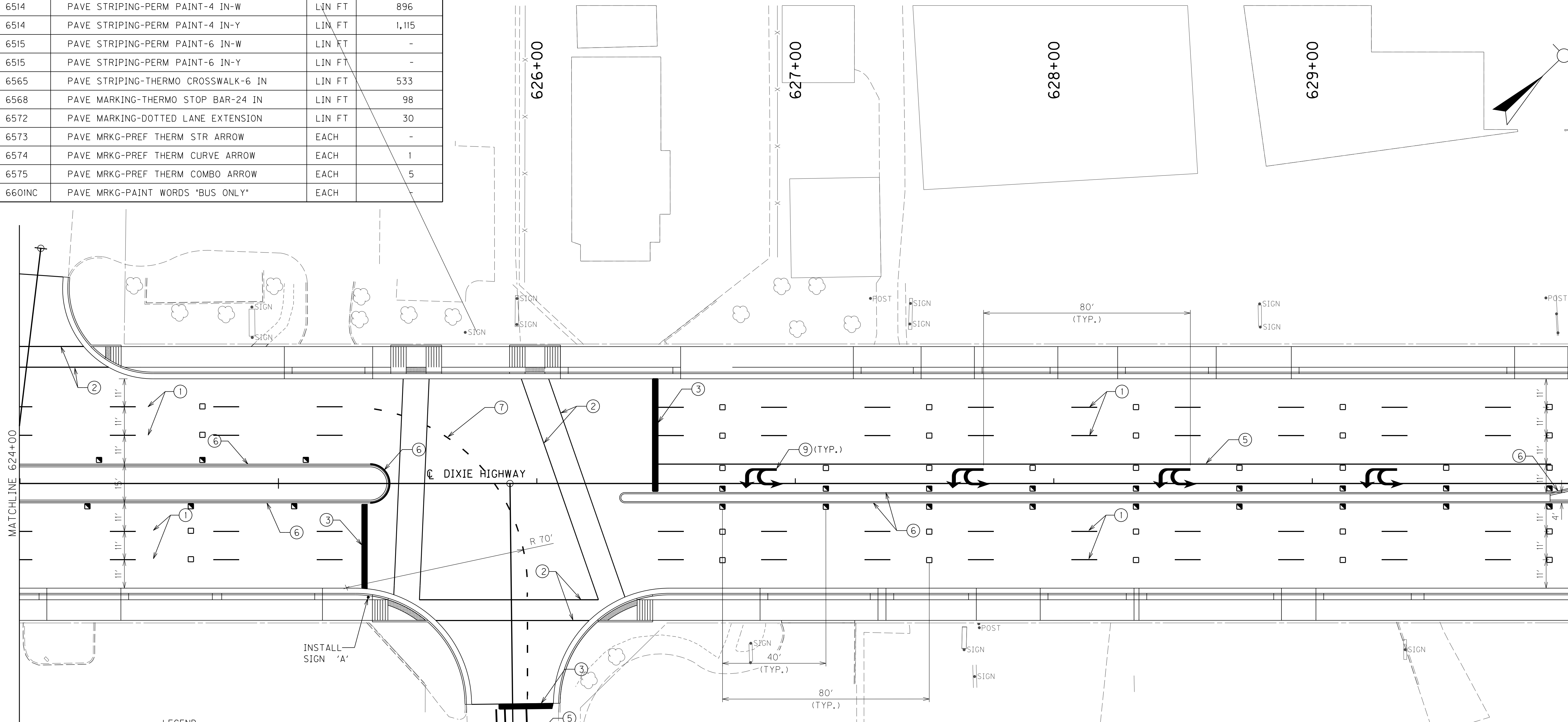
E-SHEET NAME: R094000S

MicroStation v8.11.9.832





PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	896
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	1,115
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	533
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	98
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	30
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	1
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	5
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-



LEGEND

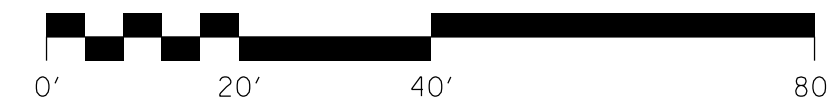
- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
- ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
- ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
- ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
- ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
- ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
- ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
- ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
- ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
- ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
- ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	□	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	33
6590	■	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	24

**Gagel Avenue**

SIGN 'A'  
SERIES C  
(12" UPPER CASE)  
18" x 90"

NOTE: SIGNS TO BE PROVIDED BY KYTC  
AND INSTALLED BY CONTRACTOR.

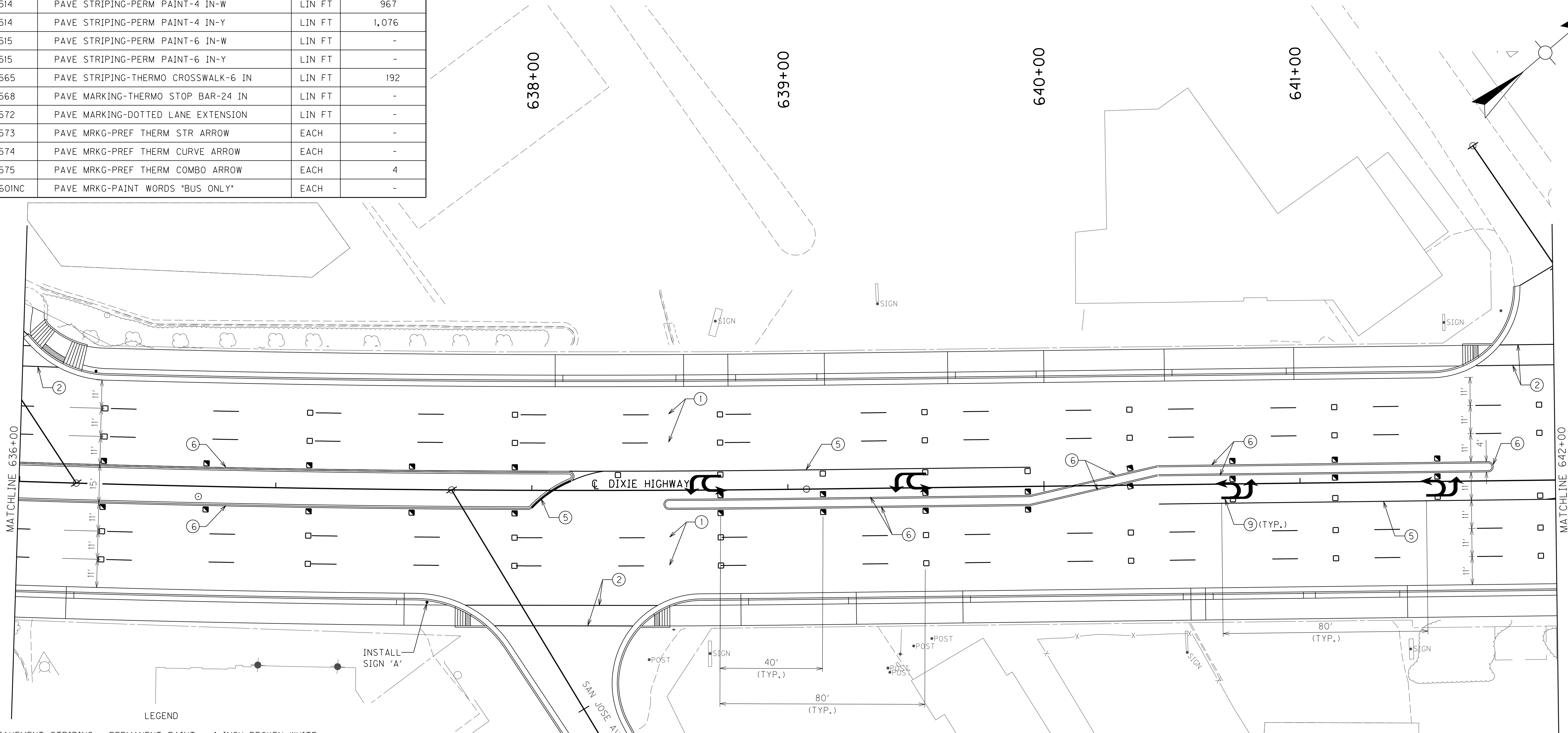


SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 624+00 TO STA. 630+00

FILE NAME: C:\PWORKING\PI\TT\DI998425\AR095000S.DGN  
 USER: ppforffen  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: R095000S  
 MicroStation v8.11.9.832

PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	967
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	1,076
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	192
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	-
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	-
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	-
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	4
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-

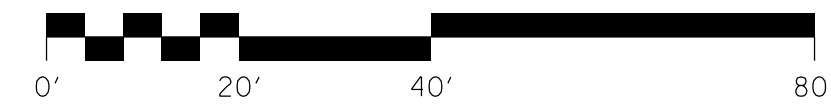


- LEGEND
- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
  - ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
  - ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
  - ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
  - ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
  - ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
  - ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
  - ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
  - ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
  - ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
  - ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	□	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	11
6590	■	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	26

**San Jose Avenue**

SIGN 'A'  
SERIES C  
(12" UPPER CASE)  
18' x 96"  
NOTE: SIGNS TO BE PROVIDED BY KYTC  
AND INSTALLED BY CONTRACTOR.

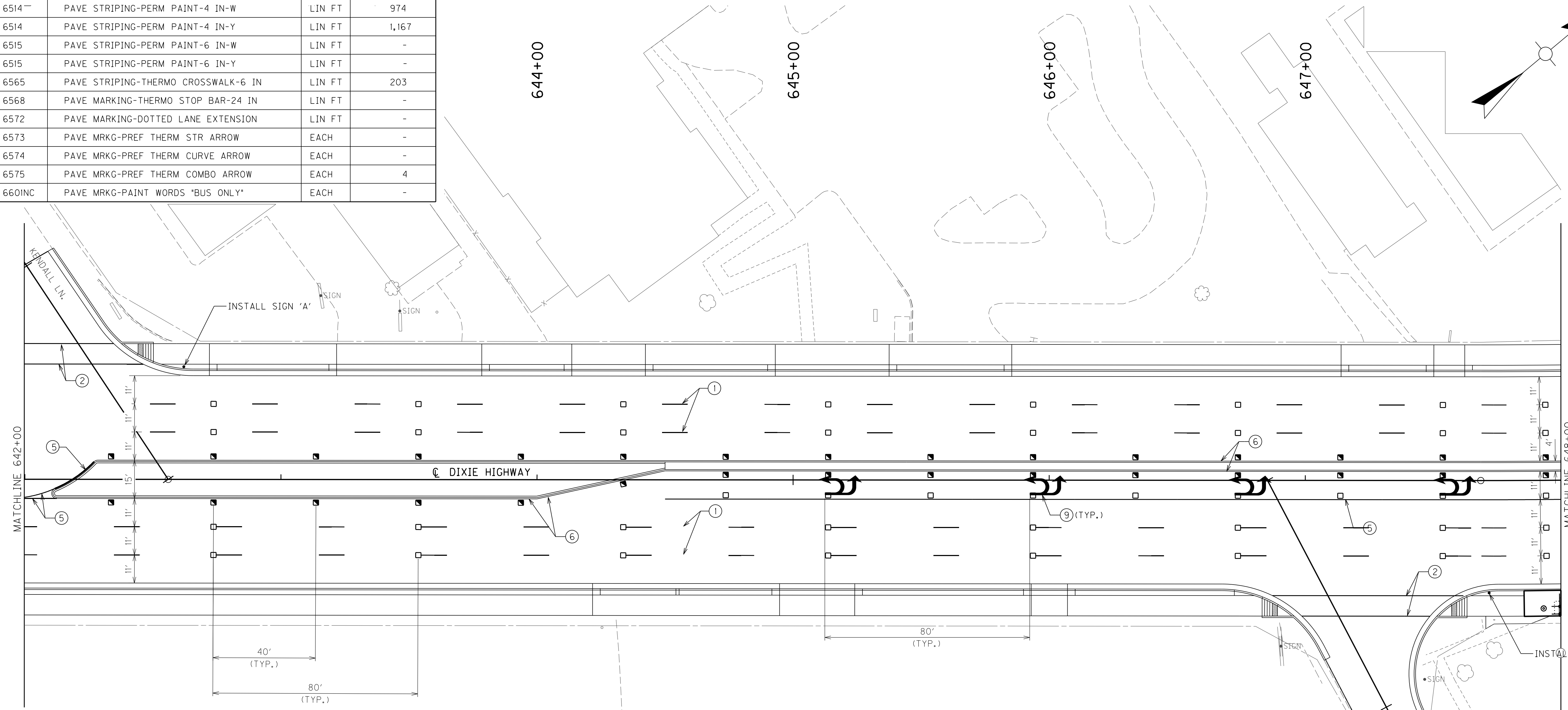


SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 636+00 TO STA. 642+00

FILE NAME: G:\PWORKING\PI\TT\DI998425\AR097000S.DGN  
 USER: ppoffen  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: R097000S  
 MicroStation v8.11.9.832

PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	974
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	1,167
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	203
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	-
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	-
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	-
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	4
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-

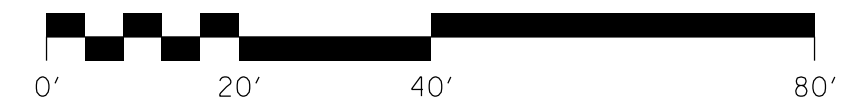


LEGEND

- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
- ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
- ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
- ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
- ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
- ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
- ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
- ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
- ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
- ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
- ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

Kendall Lane	Stewart Avenue
SIGN 'A' SERIES C (12" UPPER CASE) 18" x 90"	SIGN 'B' SERIES C (12" UPPER CASE) 18" x 96"
NOTE: SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.	

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	□	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	41
6590	■	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	30

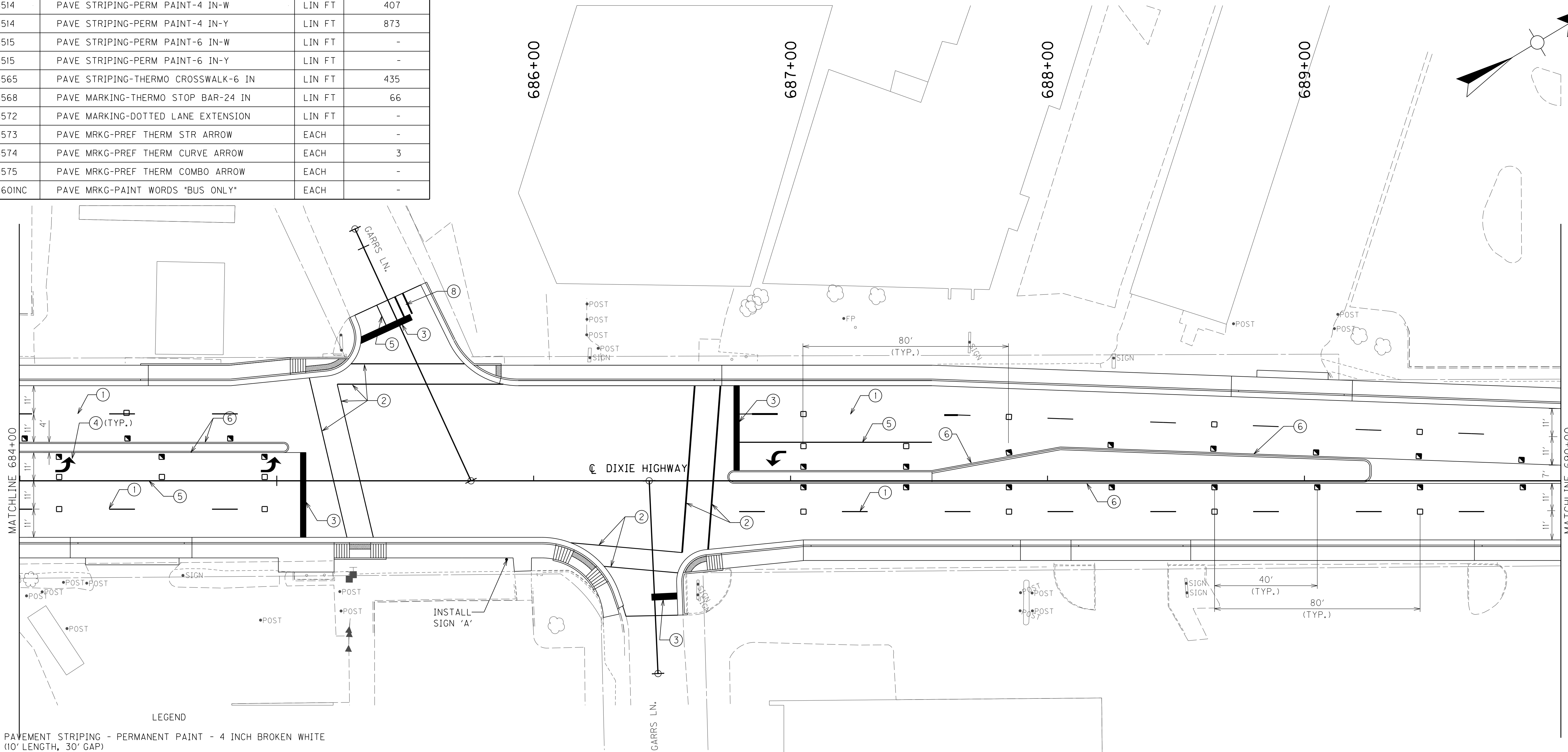
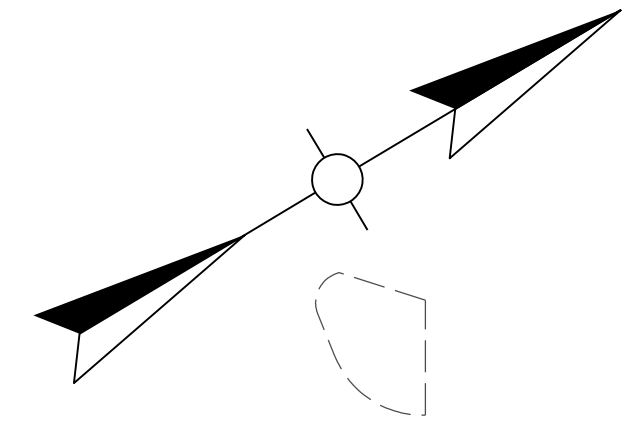


SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 642+00 TO STA. 648+00

FILE NAME: G:\PWORKING\PI\TT\DI998425\AR09800DS.DGN  
 USER: poffen  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: R09800DS  
 MicroStation v8.11.9.832

PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM PAINT-4 IN-W	LIN FT	407
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	873
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	435
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	66
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	-
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	3
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	-
660INC	PAVE MRKG-PAINT WORDS "BUS ONLY"	EACH	-



LEGEND

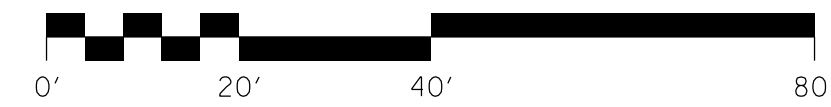
- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
- ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
- ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
- ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
- ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
- ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
- ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
- ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
- ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
- ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
- ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

Garrs Lane

SIGN 'A'  
SERIES C  
(12" UPPER CASE)  
18' x 72"

NOTE: SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.

PAVEMENT MARKER PLAN				
BID ITEM	SYMBOL	DESCRIPTION	UNIT	QUANTITY
6589	□	INLAID TYPE V MONO-DIRECTIONAL (WHITE)	EACH	16
6590	■	INLAID TYPE V MONO-DIRECTIONAL (YELLOW)	EACH	21



SCALE: 1"=20'

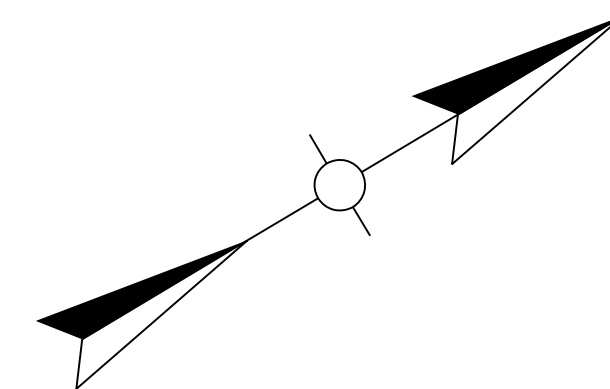
DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 684+00 TO STA. 690+00

FILE NAME: C:\PWORKING\PI\TT\_D1998425\RI050005.DGN

USER: ppoffen  
DATE PLOTTED: August 17, 2017

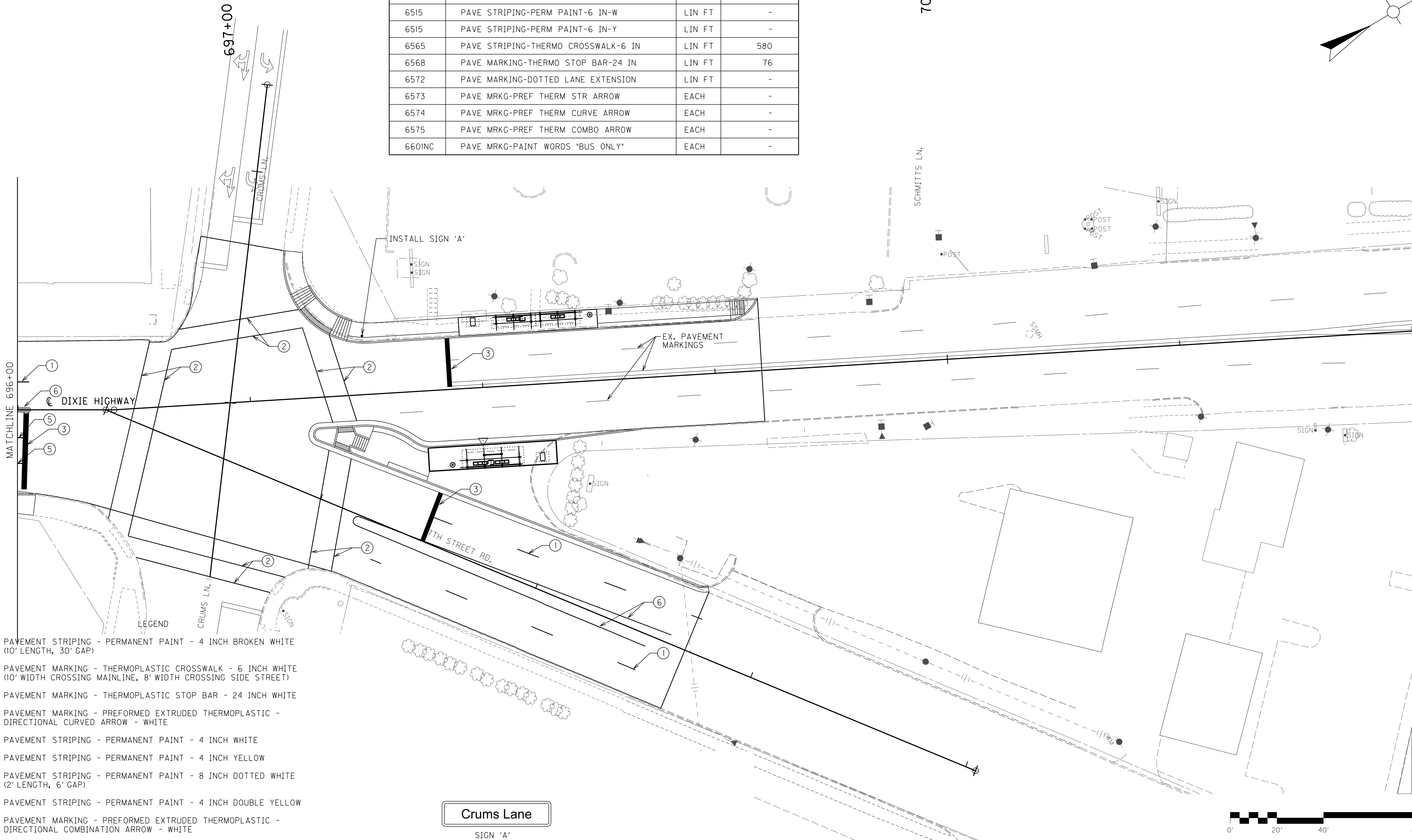
E-SHEET NAME: RI050005

MicroStation v8.11.9.832



PAVEMENT MARKING PLAN			
BID ITEM	DESCRIPTION	UNIT	QUANTITY
6514	PAVE STRIPING-PERM-PAINT-4 IN-W	LIN FT	80
6514	PAVE STRIPING-PERM PAINT-4 IN-Y	LIN FT	297
6515	PAVE STRIPING-PERM PAINT-6 IN-W	LIN FT	-
6515	PAVE STRIPING-PERM PAINT-6 IN-Y	LIN FT	-
6565	PAVE STRIPING-THERMO CROSSWALK-6 IN	LIN FT	580
6568	PAVE MARKING-THERMO STOP BAR-24 IN	LIN FT	76
6572	PAVE MARKING-DOTTED LANE EXTENSION	LIN FT	-
6573	PAVE MRKG-PREF THERM STR ARROW	EACH	-
6574	PAVE MRKG-PREF THERM CURVE ARROW	EACH	-
6575	PAVE MRKG-PREF THERM COMBO ARROW	EACH	-
660INC	PAVE MRKG-PAINT WORDS 'BUS ONLY'	EACH	-

FILE NAME: C:\PWORKING\PI\TT\_D1998425\RI070005.DGN  
 USER: ccrabar  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: RI070005  
 MicroStation v8.11.9.832

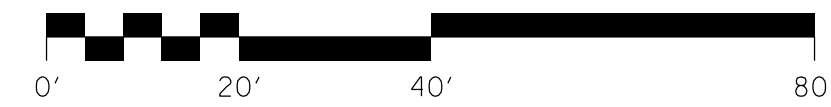


- ① PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH BROKEN WHITE (10' LENGTH, 30' GAP)
- ② PAVEMENT MARKING - THERMOPLASTIC CROSSWALK - 6 INCH WHITE (10' WIDTH CROSSING MAINLINE, 8' WIDTH CROSSING SIDE STREET)
- ③ PAVEMENT MARKING - THERMOPLASTIC STOP BAR - 24 INCH WHITE
- ④ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL CURVED ARROW - WHITE
- ⑤ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH WHITE
- ⑥ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH YELLOW
- ⑦ PAVEMENT STRIPING - PERMANENT PAINT - 8 INCH DOTTED WHITE (2' LENGTH, 6' GAP)
- ⑧ PAVEMENT STRIPING - PERMANENT PAINT - 4 INCH DOUBLE YELLOW
- ⑨ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL COMBINATION ARROW - WHITE
- ⑩ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - DIRECTIONAL STRAIGHT ARROW - WHITE
- ⑪ PAVEMENT MARKING - PREFORMED EXTRUDED THERMOPLASTIC - "BUS ONLY"

Crums Lane

SIGN 'A'  
SERIES C  
(12" UPPER CASE)  
18" x 90"

NOTE: SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.



SCALE: 1"=20'

TRANSFORMING DIXIE HIGHWAY  
PAVEMENT MARKING SHEET  
STA. 696+00 TO STA. 702+00



## ITS SUB SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	1002

ITEM	DESCRIPTION	UNIT	I016	I017	I018	I019	I020	I021	I022	I023	I024	I025	I026	I027	I028	I029	TOTALS CARRIED TO FINAL GEN. SUM.
01642	JUNCTION BOX-18 IN	EACH	1	6	14	1	1	13		13	1	17	1	10	3	1	82
04792	CONDUIT-1 IN	LF		77	140			195		160		345		254			1171
04795	CONDUIT-2 IN	LF	22	220	485	18	66	570	16	375	21	490	51	138	204	12	2688
04797	CONDUIT-3 IN	LF															0
04820	TRENCHING AND BACKFILLING	LF	22	220	548	18	66	133	16	140	21	242	51	176	69	12	1734
04899	ELECTRICAL SERVICE	EACH		1	2			2		2		2		2			11
21543EN	BORE AND JACK CONDUIT	LF			131			162		90		81			135		599
24543EC	CLEAN (EXISTING CONDUIT CLEANED)	LF															0
01650	JUNCTION BOX (CONCRETE 32")	EACH															0
24921EC	CONDUIT RISER-2 IN	EACH	1	3	5	1	1	4	1	5	1	5	1	5	2	1	36
21077ED	FIBER OPTIC CABLE (FIBER OPTIC DROP CABLE, 12 STRAND)	LF	170	640	980	310	200	520	150	920	140	1080	60	870	480	100	6620
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND)	LF															0
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND)	LF															0
24922EC	FIBER OPTIC SPLICE ENCLOSURE	EACH	1	1	1	1	1	1	1	1	1	1	1	1	2	1	15
24923EC	CABINET FIBER TERMINATION PANEL	EACH	1	1	1	1	1	1	1	1	1	1	1	1	2	1	15
24924EC	AIR LINK COMMUNICATION	EACH															0
24925EC	LAYER 2 ETHERNET SWITCH-FLD MOUNT-6 PORT	EACH	1	1	1	1	1	1	1	1	1	1	1	1	2	1	15
24926EC	INTERIOR FIBER OPTIC PATCH PANEL	EACH															0
24927EC	LAYER 2 ETHERNET SWITCH • RACK MOUNT	EACH															0
24928EC	FIREWALL UNIT • RACK MOUNT	EACH															0
24929EC	MICROTRENCHING	LF															0
24930EC	MICRO-DUCT PATHWAY-2 CELL	LF															0
24931EC	MICRO-DUCT PATHWAY-3 CELL	LF															0
24932EC	CONDUIT REPAIR	LF															0
24933EC	JUNCTION BOX REPAIRED	EACH															0
04888	MESSENGER - 4500 LB	LF	12	194	102	111	10	13	7	211	5	113	5	308	5	5	1101

**NOTES:**

- ① ITS SUMMARY TOTALS CARRIED TO PROJECT GENERAL SUMMARY SHEETS.
- ② ALL NOTES FOR SPECIAL ITS AND TRAFFIC PAY ITEMS - SEE THE ITS SPECIAL NOTES.
- ③ ALL UNDERGROUND CONDUIT FROM THE PYLON TO SHELTER AND CONDUIT FOR FUTURE USE SHALL BE 1".
- ④ ALL UNDERGROUND CONDUIT FOR 12 FIBER DROP CABLE TO PYLON OR SIGNAL CABINET SHALL BE 2".
- ⑤ ALL UNDERGROUND CONDUIT FOR ELECTRIC FROM POWER SOURCE TO PYLON SHALL TO BE 2".
- ⑥ ALL UNDERGROUND CONDUIT FOR 144 FIBER SHALL BE 3" UNLESS NOTED AS MICRO TRENCH. (9TH STREET)
- ⑦ ALL UNDERGROUND CONDUIT SHALL BE INSTALLED IN OPEN TRENCHING UNLESS OTHERWISE NOTED.
- ⑧ ALL UNDERGROUND CONDUIT UNDER ROADWAYS SHALL BE RIGID STEEL. OTHER CONDUITS TO BE PVC SCHEDULE 80.
- ⑨ ALL QUANTITIES SHOWN UNDER "PROJECT ENGINEER APPROVED" TO BE APPROVED ON AN AS NEEDED BASIS IN THE FIELD BY THE PROJECT ENGINEER.
- ⑩ UNLESS SPECIFIC LOCATION INFORMATION IS PROVIDED, CONTRACTOR SHALL FIELD LOCATE JUNCTION BOXES TO THE SATISFACTION OF THE PROJECT ENGINEER ON SITE.
- ⑪ UNLESS OTHERWISE NOTED, ALL MICRO TRENCHING FOR 144 FIBER SHALL BE CUT ALONG THE EAST SIDE OF DIXIE HIGHWAY, GENERALLY CENTERED IN THE OUTSIDE LANE AND PARALLEL TO THE CURB/EOP. EXTRA CARE SHALL BE TAKEN TO AVOID TRENCHING IN WHEEL PATHS AND TO PROVIDE ADEQUATE CLEARANCE TO ALL EXISTING MANHOLES AND VALVES.

FILE NAME: C:\PWORKING\PI\100200SU.DGN

USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: 100200SU

Power InRoads v8.11.9.397

## ITS SUB SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	1003

ITEM	DESCRIPTION	UNIT	I030	I031	I032	I033	I034	I035	I036	I037	I038	I039	I040	I041	I042	I043	TOTALS CARRIED TO FINAL GEN. SUM.
01642	JUNCTION BOX-18 IN	EACH	1	1	3	13	10	1	12		11						52
04792	CONDUIT-1 IN	LF				223	248		198		158						827
04795	CONDUIT-2 IN	LF	12	12	206	553	283	9	342	3	552	6	9				1987
04797	CONDUIT-3 IN	LF													80		80
04820	TRENCHING AND BACKFILLING	LF	12	12	14	341	40	9	342	3	495	6	9				1283
04899	ELECTRICAL SERVICE	EACH				2	2		2		2						8
21543EN	BORE AND JACK CONDUIT	LF			184	217	50				70				80		601
24543EC	CLEAN (EXISTING CONDUIT CLEANED)	LF															0
01650	JUNCTION BOX (CONCRETE 32")	EACH											1	1	2	1	5
24921EC	CONDUIT RISER-2 IN	EACH	1	1	1	4	5	1	5	1	5	1					25
21077ED	FIBER OPTIC CABLE (FIBER OPTIC DROP CABLE, 12 STRAND)	LF	180	150	380	980	940	120	1230	140	830	160	130	120		120	5480
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND)	LF															0
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND)	LF											1172	1350	1425	1350	5297
24922EC	FIBER OPTIC SPLICE ENCLOSURE	EACH	1	1	1	1	1	1	1	1	1	1	1	1		1	13
24923EC	CABINET FIBER TERMINATION PANEL	EACH	1	1	1	1	1	1	1	1	1	1	1	1		1	13
24924EC	AIR LINK COMMUNICATION	EACH															0
24925EC	LAYER 2 ETHERNET SWITCH-FLD MOUNT-6 PORT	EACH	1	1	1	1	1	1	1	1	1	1	1	1		1	13
24926EC	INTERIOR FIBER OPTIC PATCH PANEL	EACH															0
24927EC	LAYER 2 ETHERNET SWITCH • RACK MOUNT	EACH															0
24928EC	FIREWALL UNIT • RACK MOUNT	EACH															0
24929EC	MICROTRENCHING	LF											1022	1213	1120	1218	4573
24930EC	MICRO-DUCT PATHWAY-2 CELL	LF												13		18	31
24931EC	MICRO-DUCT PATHWAY-3 CELL	LF											1022	1200	1120	1200	4542
24932EC	CONDUIT REPAIR	LF															0
24933EC	JUNCTION BOX REPAIRED	EACH															0
04888	MESSENGER - 4500 LB	LF	5	5	5	196	185	5	402	5	191	5					1004

**NOTES:**

- ① ITS SUMMARY TOTALS CARRIED TO PROJECT GENERAL SUMMARY SHEETS.
- ② ALL NOTES FOR SPECIAL ITS AND TRAFFIC PAY ITEMS - SEE THE ITS SPECIAL NOTES.
- ③ ALL UNDERGROUND CONDUIT FROM THE PYLON TO SHELTER AND CONDUIT FOR FUTURE USE SHALL BE 1".
- ④ ALL UNDERGROUND CONDUIT FOR 12 FIBER DROP CABLE TO PYLON OR SIGNAL CABINET SHALL BE 2".
- ⑤ ALL UNDERGROUND CONDUIT FOR ELECTRIC FROM POWER SOURCE TO PYLON SHALL TO BE 2".
- ⑥ ALL UNDERGROUND CONDUIT FOR 144 FIBER SHALL BE 3" UNLESS NOTED AS MICRO TRENCH. (9TH STREET)
- ⑦ ALL UNDERGROUND CONDUIT SHALL BE INSTALLED IN OPEN TRENCHING UNLESS OTHERWISE NOTED.
- ⑧ ALL UNDERGROUND CONDUIT UNDER ROADWAYS SHALL BE RIGID STEEL. OTHER CONDUITS TO BE PVC SCHEDULE 80.
- ⑨ ALL QUANTITIES SHOWN UNDER "PROJECT ENGINEER APPROVED" TO BE APPROVED ON AN AS NEEDED BASIS IN THE FIELD BY THE PROJECT ENGINEER.
- ⑩ UNLESS SPECIFIC LOCATION INFORMATION IS PROVIDED, CONTRACTOR SHALL FIELD LOCATE JUNCTION BOXES TO THE SATISFACTION OF THE PROJECT ENGINEER ON SITE.
- ⑪ UNLESS OTHERWISE NOTED, ALL MICRO TRENCHING FOR 144 FIBER SHALL BE CUT ALONG THE EAST SIDE OF DIXIE HIGHWAY, GENERALLY CENTERED IN THE OUTSIDE LANE AND PARALLEL TO THE CURB/EOP. EXTRA CARE SHALL BE TAKEN TO AVOID TRENCHING IN WHEEL PATHS AND TO PROVIDE ADEQUATE CLEARANCE TO ALL EXISTING MANHOLES AND VALVES.

FILE NAME: C:\PWORKING\PI\100300SU.DGN

USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: 100300SU

Power InRoads v8.11.9.397



## ITS SUB SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	1004

ITEM	DESCRIPTION	UNIT	I044	I045	I046	I047	I048	I049	I050	I051	I052	I053	I054	I055	I056	I057	TOTALS CARRIED TO FINAL GEN. SUM.
01642	JUNCTION BOX-18 IN	EACH		8	6		8		11		1	9			3	6	52
04792	CONDUIT-1 IN	LF		80	66		70		134			202			80	84	716
04795	CONDUIT-2 IN	LF		216	97		153		222		23	132			100	599	1542
04797	CONDUIT-3 IN	LF												64		97	161
04820	TRENCHING AND BACKFILLING	LF		135	82		170		255		23	214			93	239	1211
04899	ELECTRICAL SERVICE	EACH		1	1		1		2			2			1	1	9
21543EN	BORE AND JACK CONDUIT	LF		87	52				40			50		64		291	584
24543EC	CLEAN (EXISTING CONDUIT CLEANED)	LF														1210	1210
01650	JUNCTION BOX (CONCRETE 32")	EACH	1	2	1	1	1	1	1	1	2	1	1	3	2		18
24921EC	CONDUIT RISER-2 IN	EACH		2			1		2			2				2	9
21077ED	FIBER OPTIC CABLE (FIBER OPTIC DROP CABLE, 12 STRAND)	LF		680	140		390		800		170	700		140	310	570	3900
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND)	LF															0
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND)	LF	1350	1360	1340	1350	1350	1375	1350	1350	1500	1350	1350	1500	1431	1459	19415
24922EC	FIBER OPTIC SPLICE ENCLOSURE	EACH		1	1		1		1		1	1		1		1	8
24923EC	CABINET FIBER TERMINATION PANEL	EACH		1	1		1		1		1	1		1		1	8
24924EC	AIR LINK COMMUNICATION	EACH															0
24925EC	LAYER 2 ETHERNET SWITCH-FLD MOUNT-6 PORT	EACH		1	1		1		1		1	1		1		1	8
24926EC	INTERIOR FIBER OPTIC PATCH PANEL	EACH															0
24927EC	LAYER 2 ETHERNET SWITCH • RACK MOUNT	EACH															0
24928EC	FIREWALL UNIT • RACK MOUNT	EACH															0
24929EC	MICROTRENCHING	LF	1200	1277	1322	1200	1335	1225	1279	1200	1229	1268	1200	1181	433		15349
24930EC	MICRO-DUCT PATHWAY-2 CELL	LF		300	132		304		457		29	338		45	216		1821
24931EC	MICRO-DUCT PATHWAY-3 CELL	LF	1200	1210	1190	1200	1200	1225	1200	1200	1200	1200	1200	1136	1131	1309	16801
24932EC	CONDUIT REPAIR	LF															0
24933EC	JUNCTION BOX REPAIRED	EACH															0
04888	MESSENGER - 4500 LB	LF															0

**NOTES:**

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- ② ALL NOTES FOR SPECIAL ITS AND TRAFFIC PAY ITEMS - SEE THE ITS SPECIAL NOTES.
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- ⑤ ALL UNDERGROUND CONDUIT FOR ELECTRIC FROM POWER SOURCE TO PYLON SHALL TO BE 2".
- ⑥ ALL UNDERGROUND CONDUIT FOR 144 FIBER SHALL BE 3" UNLESS NOTED AS MICRO TRENCH. (9TH STREET)
- ⑦ ALL UNDERGROUND CONDUIT SHALL BE INSTALLED IN OPEN TRENCHING UNLESS OTHERWISE NOTED.
- ⑧ ALL UNDERGROUND CONDUIT UNDER ROADWAYS SHALL BE RIGID STEEL. OTHER CONDUITS TO BE PVC SCHEDULE 80.
- ⑨ ALL QUANTITIES SHOWN UNDER "PROJECT ENGINEER APPROVED" TO BE APPROVED ON AN AS NEEDED BASIS IN THE FIELD BY THE PROJECT ENGINEER.
- ⑩ UNLESS SPECIFIC LOCATION INFORMATION IS PROVIDED, CONTRACTOR SHALL FIELD LOCATE JUNCTION BOXES TO THE SATISFACTION OF THE PROJECT ENGINEER ON SITE.
- ⑪ UNLESS OTHERWISE NOTED, ALL MICRO TRENCHING FOR 144 FIBER SHALL BE CUT ALONG THE EAST SIDE OF DIXIE HIGHWAY, GENERALLY CENTERED IN THE OUTSIDE LANE AND PARALLEL TO THE CURB/EOP. EXTRA CARE SHALL BE TAKEN TO AVOID TRENCHING IN WHEEL PATHS AND TO PROVIDE ADEQUATE CLEARANCE TO ALL EXISTING MANHOLES AND VALVES.

FILE NAME: C:\PWORKING\PI\100400SU.DGN

USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: 100400SU

Power InRoads v8.11.9.397

## ITS SUB SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	1005

ITEM	DESCRIPTION	UNIT	I058	I059	I060	I061	I062	I063	I064	I065	I066	PROJECT ENGINEER APPROVED	SHEET TOTAL	SUB SUMMARY SHEET 1	SUB SUMMARY SHEET 2	SUB SUMMARY SHEET 3	GRAND TOTAL
01642	JUNCTION BOX-18 IN	EACH			10		9	3					22	82	52	52	208
04792	CONDUIT-1 IN	LF			148		146	70		22	28		414	2688	827	716	4645
04795	CONDUIT-2 IN	LF			490		414	133		30	108		1175	2688	1987	1542	7392
04797	CONDUIT-3 IN	LF			90	1200	1202	978					3470	0	80	161	3711
04820	TRENCHING AND BACKFILLING	LF			351		160	71		30	125		737	1734	1283	1211	4965
04899	ELECTRICAL SERVICE	EACH			2		2	1		1	2		8	11	8	9	36
21543EN	BORE AND JACK CONDUIT	LF			304	1200	1504	1077	115				4200	599	601	584	5984
24543EC	CLEAN (EXISTING CONDUIT CLEANED)	LF	1200	1200	712			165	1126	187			4590	0	0	1210	5800
01650	JUNCTION BOX (CONCRETE 32")	EACH			2		1	1	2				6	0	5	18	29
24921EC	CONDUIT RISER-2 IN	EACH			3								3	36	25	9	73
21077ED	FIBER OPTIC CABLE (FIBER OPTIC DROP CABLE, 12 STRAND)	LF			890		360	220		120			1590	6620	5480	3900	17590
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND)	LF			736								736	0	0	0	736
21077ED	FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND)	LF	1200	1200	1124	1275	1277	1368	1157	462			9063	0	5297	19415	33775
24922EC	FIBER OPTIC SPLICE ENCLOSURE	EACH			2		1	2		1			6	15	13	8	42
24923EC	CABINET FIBER TERMINATION PANEL	EACH			1								1	15	13	8	37
24924EC	AIR LINK COMMUNICATION	EACH									2		2	0	0	0	2
24925EC	LAYER 2 ETHERNET SWITCH-FLD MOUNT-6 PORT	EACH			1								1	15	13	8	37
24926EC	INTERIOR FIBER OPTIC PATCH PANEL	EACH			1						1		2	0	0	0	2
24927EC	LAYER 2 ETHERNET SWITCH • RACK MOUNT	EACH			2						1		3	0	0	0	3
24928EC	FIREWALL UNIT • RACK MOUNT	EACH			2						1		3	0	0	0	3
24929EC	MICROTRENCHING	LF			17			194					211	0	4573	15349	20133
24930EC	MICRO-DUCT PATHWAY-2 CELL	LF					162	99		15			276	0	31	16801	17108
24931EC	MICRO-DUCT PATHWAY-3 CELL	LF	1200	1200	824	1200	1202	1143	1226	187			8182	0	4542	0	12724
24932EC	CONDUIT REPAIR	LF										100	100	0	0	0	100
24933EC	JUNCTION BOX REPAIRED	EACH										5	5	0	0	0	5
04888	MESSENGER - 4500 LB	LF											0	1101	1004	0	2105

**NOTES:**

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FILE NAME: C:\PWORKING\PI\100500SU.DGN

USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: 100500SU

Power InRoads v8.11.9.397

# TRAFFIC GENERAL SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	T001

ITEM	DESCRIPTION	UNIT	DIXIE HIGHWAY																	TRAFFIC TOTAL	
2490IEC	PVC CONDUIT-2 IN-SCHEDULE 80	LF	1881																		1881
04723	BRACKET - 10 FEET	EACH	52																		52
04780	FUSED CONNECTOR KIT	EACH	104																		104
04792	CONDUIT-1 IN	LF	534																		534
04794	CONDUIT-1 1/2 IN	LF	40																		40
04795	CONDUIT-2 IN	LF	1345																		1345
04811	ELECTRICAL JUNCTION BOX TYPE B	EACH	57																		57
04820	TRENCHING AND BACKFILLING	LF	1742																		1742
04830	LOOP WIRE	LF	25525																		25525
04832	WIRE-NO. 12	LF	22449																		22449
04844	CABLE-NO. 14/5C	LF	28657																		28657
04845	CABLE-NO. 14/7C	LF	1650																		1650
04850	CABLE-NO. 14/1 PAIR	LF	13919																		13919
04885	MESSENGER-10800 LB	LF	3870																		3870
04895	LOOP SAW SLOT AND FILL	LF	9799																		9799
04899	ELECTRICAL SERVICE	EACH	1																		1
24908EC	INSTALL SIGNAL CONTROLLER - TY ATC (WITH IC ATC MODULE)	EACH	35																		35
04932	INSTALL STEEL STRAIN POLE	EACH	33																		33
04950	REMOVE SIGNAL EQUIPMENT	EACH	94																		94
06472	INSTALL SPAN MOUNTED SIGN ②	EACH	38																		38
20093NS835	INSTALL PEDESTRIAN HEAD-LED	EACH	84																		84
20188NS835	INSTALL LED SIGNAL-3 SECTION 12 IN (TRANSIT)	EACH	11																		11
20188NS835	INSTALL LED SIGNAL-3 SECTION 12 IN	EACH	116																		116
20189NS835	INSTALL LED SIGNAL-5 SECTION 12 IN	EACH	11																		11
20266ES835	INSTALL LED SIGNAL-4 SECTION 12 IN	EACH	8																		8
21743NN	INSTALL PEDESTRIAN DETECTOR	EACH	84																		84
23157EN	TRAFFIC SIGNAL POLE BASE	CUYD	145																		145
24937EC	INSTALL EXTERNAL UPS SYSTEM CABINET	EACH	2																		2
23206EC	INSTALL CONTROLLER CABINET	EACH	6																		6
23222EC	INSTALL SIGNAL PEDESTAL	EACH	26																		26
24589ED	LED LUMINAIRE	EACH	52																		52
24919EC	MULTIMODE PHASE SELECTOR (WITH POLE MOUNTED ANTENNA)	EACH	32																		32
24916ED	SYSTEM INTEGRATION	LS	1																		1
2494IEC	LED TRANSIT SIGNAL MODULE	EACH	33																		33
22939ND	INSTALL LUMINAIRE POLE	EACH	2																		2

**NOTES:**

① TRAFFIC SUMMARY TOTALS CARRIED TO PROJECT GENERAL SUMMARY SHEETS

② SPAN MOUNTED SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.

FILE NAME: G:\PWORK\INC\PITT\_D1998425\T001000SU.DGN  
 USER: cr@bar  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: T001000SU  
 MicroStation v8.11.9.832

# TRAFFIC SUB SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	T002

ITEM	DESCRIPTION	UNIT	T005	T006	T007	T008	T009	T010	T011	T012	T013	T014	T015	T016	T017	T018	SUB SHEET TOTALS
24901EC	PVC CONDUIT-2 IN-SCHEDULE 80	LF											100	57	92	100	349
04723	BRACKET - 10 FEET	EACH											4	4	4	4	16
04780	FUSED CONNECTOR KIT	EACH											8	8	8	8	32
04792	CONDUIT-1 IN	LF											51	42	48	14	155
04794	CONDUIT-1 1/2 IN	LF															0
04795	CONDUIT-2 IN	LF											55	90	90	41	276
04811	ELECTRICAL JUNCTION BOX TYPE B	EACH											4	4	3	3	14
04820	TRENCHING AND BACKFILLING	LF											181	85	139	80	485
04830	LOOP WIRE	LF											1632	2498	1694	966	6790
04832	WIRE-NO. 12	LF											1360	2047	2029	1678	7114
04844	CABLE-NO. 14/5C	LF			310	150	300	240	320	40	270		3436	430	2906	1370	9772
04845	CABLE-NO. 14/7C	LF			280	160	300	200	330	70	310						1650
04850	CABLE-NO. 14/1 PAIR	LF											1125	1221	770	715	3831
04885	MESSENGER-10800 LB	LF											425	0	430	300	1155
04895	LOOP SAW SLOT AND FILL	LF											619	775	658	370	2422
04899	ELECTRICAL SERVICE	EACH											0	0	0	0	0
24908EC	INSTALL SIGNAL CONTROLLER - TY ATC (WITH IC ATC MODULE)	EACH	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
04932	INSTALL STEEL STRAIN POLE	EACH											4	0	2	2	8
04950	REMOVE SIGNAL EQUIPMENT	EACH	3	3	5	4	4	4	5	4	5	4	1	0	1	1	44
06472	INSTALL SPAN MOUNTED SIGN	EACH			4	2	2	2	4	2	4	2	2	2	2	1	29
20093NS835	INSTALL PEDESTRIAN HEAD-LED	EACH											6	6	8	6	26
20188NS835	INSTALL LED SIGNAL-3 SECTION 12 IN (TRANSIT)	EACH			2	1	1	1	2	1	2		0	1	0	0	11
20188NS835	INSTALL LED SIGNAL-3 SECTION 12 IN	EACH											12	0	11	9	32
20189NS835	INSTALL LED SIGNAL-5 SECTION 12 IN	EACH			2	1	1	1	2	1	2		0	1	0	0	11
20266ES835	INSTALL LED SIGNAL-4 SECTION 12 IN	EACH											0	0	0	0	0
21743NN	INSTALL PEDESTRIAN DETECTOR	EACH											6	6	8	6	26
23157EN	TRAFFIC SIGNAL POLE BASE	CUYD											18	0	9	8	35
24937EC	INSTALL EXTERNAL UPS SYSTEM CABINET	EACH							1		1		0	0	0	0	2
23206EC	INSTALL CONTROLLER CABINET	EACH											0	0	0	0	0
23222EC	INSTALL SIGNAL PEDESTAL	EACH											2	3	2	1	8
24589ED	LED LUMINAIRE	EACH											4	4	4	4	16
24919EC	MULTIMODE PHASE SELECTOR (WITH POLE MOUNTED ANTENNA)	EACH	1			1	1	1	1	1	1	1	1	1	1	1	12
24916ED	SYSTEM INTEGRATION	LS															6
24941EC	LED TRANSIT SIGNAL MODULE	EACH			6	3	3	3	6	3	6			3			33
22939ND	INSTALL LUMINAIRE POLE	EACH															0

**NOTES:**

① TRAFFIC SUB SUMMARY TOTALS CARRIED TO TRAFFIC GENERAL SUMMARY SHEETS.

② SPAN MOUNTED SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.

FILE NAME: G:\PWORK\INC\PITT\_D1998425\T00200SU.DGN  
 USER: cr@bar  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: T00200SU  
 MicroStation v8.11.9.832

**TRAFFIC SUB SUMMARY**

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	T003

ITEM	DESCRIPTION	UNIT	T019	T020	T021	T022	T023	T024	T025	T026	T027	T028	T029	T030	T031	T032	SUB SHEET TOTALS
24901EC	PVC CONDUIT-2 IN-SCHEDULE 80	LF	207	279	198	174	113	232	97	53	179						1532
04723	BRACKET - 10 FEET	EACH	4	4	4	4	4	4	4	4	4						36
04780	FUSED CONNECTOR KIT	EACH	8	8	8	8	8	8	8	8	8						72
04792	CONDUIT-1 IN	LF	35	33	39	47	41	47	51	26	40						359
04794	CONDUIT-1 1/2 IN	LF															0
04795	CONDUIT-2 IN	LF	124	140	260	181	45	76	77	0	55						958
04811	ELECTRICAL JUNCTION BOX TYPE B	EACH	4	5	6	6	4	4	5	3	2						39
04820	TRENCHING AND BACKFILLING	LF	184	139	175	203	125	75	116	59	81						1157
04830	LOOP WIRE	LF	1954	1336	1958	2496	1662	1292	1752	1534	1846						15830
04832	WIRE-NO. 12	LF	1759	2020	1945	2170	1663	1698	1801	565	1714						15335
04844	CABLE-NO. 14/5C	LF	2436	3078	1958	2737	2232	1796	1380	0	1578						17195
04845	CABLE-NO. 14/7C	LF															0
04850	CABLE-NO. 14/1 PAIR	LF	1055	1080	1090	1205	680	450	1231	843	1124						8758
04885	MESSENGER-10800 LB	LF	414	463	165	467	399	412	0	0	135						2455
04895	LOOP SAW SLOT AND FILL	LF	748	515	747	982	641	530	863	590	661						6277
04899	ELECTRICAL SERVICE	EACH															0
24908EC	INSTALL SIGNAL CONTROLLER - TY ATC (WITH IC ATC MODULE)	EACH	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
04932	INSTALL STEEL STRAIN POLE	EACH	1	4	3	4	4	4	0	0	1						21
04950	REMOVE SIGNAL EQUIPMENT	EACH	1	1	1	1	1	1	1	1	1	4	4	6	4	4	31
06472	INSTALL SPAN MOUNTED SIGN ②	EACH	2	2	1	1	2	0	0	0	1						9
20093NS835	INSTALL PEDESTRIAN HEAD-LED	EACH	6	8	6	8	8	6	8	0	4						54
20188NS835	INSTALL LED SIGNAL-3 SECTION 12 IN (TRANSIT)	EACH															0
20188NS835	INSTALL LED SIGNAL-3 SECTION 12 IN	EACH	10	12	12	11	10	9	0	0	8						72
20189NS835	INSTALL LED SIGNAL-5 SECTION 12 IN	EACH															0
20266ES835	INSTALL LED SIGNAL-4 SECTION 12 IN	EACH	2	0	0	2	2	2	0	0	0						8
21743NN	INSTALL PEDESTRIAN DETECTOR	EACH	6	8	6	8	8	6	8	0	4						54
23157EN	TRAFFIC SIGNAL POLE BASE	CUYD	4	19	13	18	18	17	0	0	4						93
24937EC	INSTALL EXTERNAL UPS SYSTEM CABINET	EACH															0
23206EC	INSTALL CONTROLLER CABINET	EACH										1	1				2
23222EC	INSTALL SIGNAL PEDESTAL	EACH	2	3	3	3	2	1	2	0	2						18
24589ED	LED LUMINAIRE	EACH	4	4	4	4	4	4	4	4	4						36
24919EC	MULTIMODE PHASE SELECTOR (WITH POLE MOUNTED ANTENNA)	EACH	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
24916ED	SYSTEM INTEGRATION	LS															0
24941EC	LED TRANSIT SIGNAL MODULE	EACH															0
22939ND	INSTALL LUMINAIRE POLE	EACH			2												2

**NOTES:**

- ① TRAFFIC SUB SUMMARY TOTALS CARRIED TO TRAFFIC GENERAL SUMMARY SHEETS.
- ② SPAN MOUNTED SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.

FILE NAME: G:\PWORK\INC\PITT\DI998425\T00300SU.DGN

USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: T00300SU

MicroStation v8.11.9.832

## TRAFFIC SUB SUMMARY

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	T004

ITEM	DESCRIPTION	UNIT	T033	T034	T035	T036	T037	T038	T039	SUB SHEET 3 TOTALS	SUB SUMMARY SHEET 1	SUB SUMMARY SHEET 2	GRAND TOTAL
24901EC	PVC CONDUIT-2 IN-SCHEDULE 80	LF								0	349	1532	1881
04723	BRACKET - 10 FEET	EACH								0	16	36	52
04780	FUSED CONNECTOR KIT	EACH								0	32	72	104
04792	CONDUIT-1 IN	LF						20		20	155	359	534
04794	CONDUIT-1 1/2 IN	LF			40					40	0	0	40
04795	CONDUIT-2 IN	LF				14	17			111	276	958	1345
04811	ELECTRICAL JUNCTION BOX TYPE B	EACH						4		4	14	39	57
04820	TRENCHING AND BACKFILLING	LF						100		100	485	1157	1742
04830	LOOP WIRE	LF								2905	6790	15830	25525
04832	WIRE-NO. 12	LF								0	7114	15335	22449
04844	CABLE-NO. 14/5C	LF						1690		1690	9772	17195	28657
04845	CABLE-NO. 14/7C	LF								0	1650	0	1650
04850	CABLE-NO. 14/1 PAIR	LF						1330		1330	3831	8758	13919
04885	MESSENGER-10800 LB	LF						260		260	1155	2455	3870
04895	LOOP SAW SLOT AND FILL	LF						1100		1100	2422	6277	9799
04899	ELECTRICAL SERVICE	EACH			1					1	0	0	1
24908EC	INSTALL SIGNAL CONTROLLER - TY ATC (WITH IC ATC MODULE)	EACH	1	1	1	1	1	1	1	7	14	14	35
04932	INSTALL STEEL STRAIN POLE	EACH							4	4	8	21	33
04950	REMOVE SIGNAL EQUIPMENT	EACH	4	5	3	3	3	1	1	19	44	31	94
06472	INSTALL SPAN MOUNTED SIGN	EACH								0	29	9	38
20093NS835	INSTALL PEDESTRIAN HEAD-LED	EACH							4	4	26	54	84
20188NS835	INSTALL LED SIGNAL-3 SECTION 12 IN (TRANSIT)	EACH								0	11	0	11
20188NS835	INSTALL LED SIGNAL-3 SECTION 12 IN	EACH							12	12	32	72	116
20189NS835	INSTALL LED SIGNAL-5 SECTION 12 IN	EACH								0	11	0	11
20266ES835	INSTALL LED SIGNAL-4 SECTION 12 IN	EACH								0	0	8	8
21743NN	INSTALL PEDESTRIAN DETECTOR	EACH							4	4	26	54	84
23157EN	TRAFFIC SIGNAL POLE BASE	CUYD							17	17	35	93	145
24937EC	INSTALL EXTERNAL UPS SYSTEM CABINET	EACH								0	2	0	2
23206EC	INSTALL CONTROLLER CABINET	EACH	1			1	1		1	4	0	2	6
23222EC	INSTALL SIGNAL PEDESTAL	EACH								0	8	18	26
24589ED	LED LUMINAIRE	EACH								0	16	36	52
24919EC	MULTIMODE PHASE SELECTOR (WITH POLE MOUNTED ANTENNA)	EACH	1	1	1	1	1	1	1	6	12	14	32
24916ED	SYSTEM INTEGRATION	LS								0	0	0	1
24941EC	LED TRANSIT SIGNAL MODULE	EACH								0	33	0	33
22939ND	INSTALL LUMINAIRE POLE	EACH								0	0	2	2

**NOTES:**

- ① TRAFFIC SUB SUMMARY TOTALS CARRIED TO TRAFFIC GENERAL SUMMARY SHEETS.
- ② SPAN MOUNTED SIGNS TO BE PROVIDED BY KYTC AND INSTALLED BY CONTRACTOR.

FILE NAME: G:\PWORK\INC\PITT\_D1998425\T00400SU.DGN

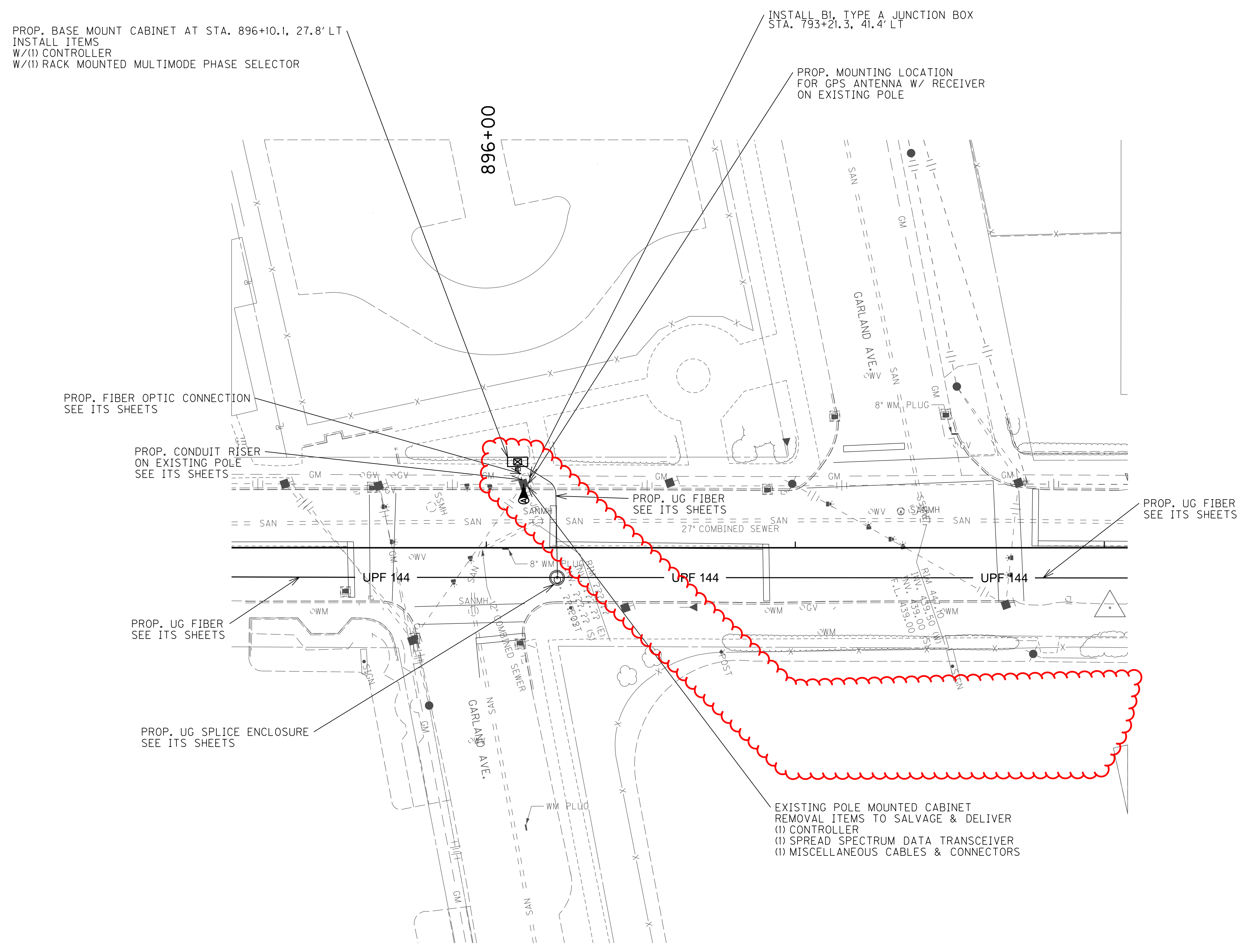
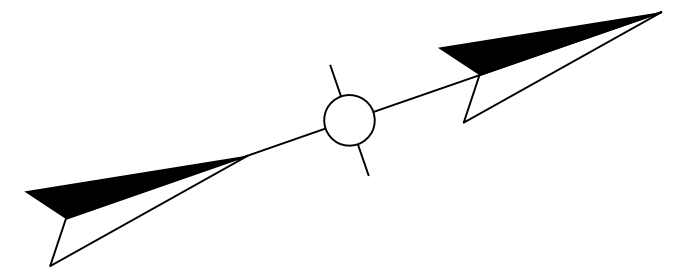
USER: cr@bar  
DATE PLOTTED: August 17, 2017

E-SHEET NAME: T00400SU

MicroStation v8.11.9.832

CROSS REFERENCES	
I016-I066	ITS AND ELEC. PLAN SHEETS
I067-I083	SPLICING PLAN SHEETS

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-478.7	T038



- NOTES:
1. THE GPS INSTALLATION CABLE SHALL BE INSTALLED FROM THE MOUNTING GPS ANTENNA WITH RECEIVER TO THE CABINET THROUGH EXISTING CONDUIT UNLESS THE EXISTING CONDUIT DOES NOT HAVE CAPACITY OR REPRESENTATIVE FROM METRO TRAFFIC SPECIFIES OTHERWISE.  
IF EXISTING CONDUIT IS DETERMINED TO NOT HAVE THE CAPACITY FOR THE GPS INSTALLATION CABLE, CONDUIT SHALL BE INSTALLED FROM THE CONDUIT RISER OR ENTRANCE BODY TO THE MAIN PULL BOX FOR THE INTERSECTION. NEW CONDUIT SHALL NOT ENTER AN EXISTING GROUND MOUNTED CONTROL CABINET. METRO TRAFFIC SHALL HAVE THE FINAL APPROVAL OF ANY NEW CONDUIT INSTALLED INVOLVING THE GPS INSTALLATION CABLE'S ROUTE TO THE CONTROL CABINET.  
NEW CONDUIT SHALL BE INSTALLED AND IS INCIDENTAL TO INSTALLATION OF THE GPS ANTENNA WITH RECEIVER. SEE ITS AND TRAFFIC DETAILS SHEETS.
  2. INSTALL TYPE 170 CONTROLLER IN MODEL 332 BASE MOUNT CABINET. INSTALL 2" RIGID STEEL CONDUIT FROM NEW CONTROLLER TO BI. EXTEND EXISTING CONDUIT RISERS ON EXISTING WOOD SIGNAL POLE TO BI.
  3. SPLICING OF SIGNAL CABLE IS PROHIBITED. IF EXISTING CABLES WILL NOT REACH THE NEW SIGNAL CABINET CONTRACTOR SHALL REPLACE EXISTING SIGNAL CABLES FROM EXISTING TERMINATION POINT (I.E., SIGNAL HEAD, EXISTING LOOP SPLICE) WITH EQUIVALENT CABLE OF ADEQUATE LENGTH TO REACH SIGNAL CABINET.

WIRING SCHEDULE

CABLE	ORIGIN	ENDING	CONNECTING
GPS CABLE	MULTIMODE PHASE SELECTOR	GPS ANTENNA W/ RECEIVER	GPS ANTENNA W/ RECEIVER

EXISTING CABLES TO BE REPLACED WITH MATCHING TYPE TO EXTEND CIRCUITS TO NEW CONTROLLER.

LEGEND	
	BASE MOUNTED CONTROLLER
	JUNCTION BOXES TYPES A, B, & C (AS DESIGNATED)
	1/4" RIGID STEEL CONDUIT (UNLESS OTHERWISE NOTED)



TRANSFORMING DIXIE HIGHWAY  
GARLAND AVENUE @ DIXIE HIGHWAY  
TRAFFIC SIGNAL SHEET

FILE NAME: C:\PWORKING\N\PITT\_D\1998425\T03800PL.DGN  
 USER: TBALLARD  
 DATE PLOTTED: August 17, 2017  
 E-SHEET NAME: T03800PL  
 MicroStation v8.11.9.832

CROSS REFERENCES	
1016-1066	ITS AND ELEC. PLAN SHEETS
1067-1083	SPLICING PLAN SHEETS

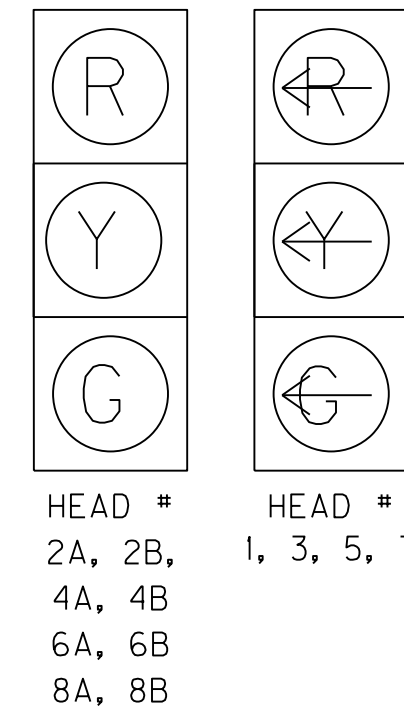
STEEL STRAIN POLES

POLE	HEIGHT	SPAN	ATT. HT.	CALC. SERV. MOMENT	SAG
A	30'	A-B	26'	70.59	5%
B	30'	B-A	26'	141.28	5%
C	30'	C-B	28'	152.49	5%
D	30'	D-C	26'	97.31	5%

WIRING SCHEDULE

CABLE	ORIGIN	ENDING	CONNECTING
1-#14/5C	CONTROLLER	SH 1	SH 1
1-#14/5C	CONTROLLER	SH 2B	SH 2A & 2B
1-#14/5C	CONTROLLER	SH 3	SH 3
1-#14/5C	CONTROLLER	SH 4B	SH 4A & 4B
1-#14/5C	CONTROLLER	SH 5	SH 5
1-#14/5C	CONTROLLER	SH 6A	SH 6A & 6B
1-#14/5C	CONTROLLER	PH 7	PH 7
1-#14/5C	CONTROLLER	PH 8B	SH 8A & 8B
1-#14/5C	CONTROLLER	PH 4A	PH 4A & 1 PED DETECTOR
1-#14/5C	CONTROLLER	PH 2B	PH 2B & 1 PED DETECTOR
1-#14/5C	CONTROLLER	PH 8A	PH 8A & 1 PED DETECTOR
1-#14/5C	CONTROLLER	PH 6B	PH 6B & 1 PED DETECTOR
1-#14/1 PAIR	CONTROLLER	JB 3	LOOP 1
1-#14/1 PAIR	CONTROLLER	JB 4	LOOP 3
3-#14/1 PAIR	CONTROLLER	JB 1	LOOP 4A & 4B & 4C
1-#14/1 PAIR	CONTROLLER	JB 2	LOOP 5
1-#14/1 PAIR	CONTROLLER	JB 1	LOOP 7
3-#14/1 PAIR	CONTROLLER	JB 4	LOOP 8A & 8B & 8C

SIGNAL HEADS



ALL COUNTDOWN PEDESTRIAN SIGNALS

LOOP SCHEDULE

LOOP	PHASE	SLOT	CHANNEL	SIZE	# OF TURNS	DIST. FROM STOP BAR
1	1	I1	1	6X30	2	0
3	3	I5	1	6X30	2	0
4A	4	I6	1	6X30	2	0
4B	4	I6	2	6X30	2	0
4C	4	I7	1	6X30	2	0
5	5	J1	1	6X30	2	0
7	7	J5	1	6X30	2	0
8A	8	J6	1	6X30	2	0
8B	8	J6	2	6X30	2	0
8C	8	J7	1	6X30	2	0

• LOOP SPACING ASSUMES 1% GRADE EB AND -1% GRADE WB.  
CONTRACTOR TO VERIFY IN FIELD WITH ENGINEER  
ALL 6 X 30 FOOT LOOPS SHALL BE QUADRA-POLE

- INSTALL STEEL STRAIN POLE B AT STA. 147+79.84 53.43' LT.
- EXISTING BASE MOUNTED CABINET TO REMAIN.
- INSTALL 3-2" RIGID STEEL CONDUITS FROM CONTROLLER TO POLE B.
- SPLICE LOOP WIRES TO FOUR 1-PAIR LOOP LEAD-INS INSIDE 32" JB - SEE ITS SHEET FOR DETAILS
- USE 2" CONDUIT PROVIDED IN ITS SHEETS FOR TRANSITION OF LOOPS IN THE PAVEMENT 32" JB

- REMOVE EXISTING PEDESTAL POLE AND INSTALL STEEL STRAIN POLE D AT STA. 148+56.52 46.79' LT.
- RE-INSTALL 2 EXISTING PED HEADS AND PED DETECTORS ON POLE A.
- INSTALL JUNCTION BOX B3.
- SPLICE LOOP WIRES TO ONE 1-PAIR LOOP LEAD-INS INSIDE JB B3.
- INSTALL 1" RS FOR TRANSITION OF LOOPS IN THE PAVEMENT B3.

- EXISTING PED POLE A, 2 PED HEADS AND PED DETECTORS TO REMAIN.

EXISTING BASE MOUNTED CABINET REMOVAL ITEMS TO SALVAGE & DELIVER  
(1) CONTROLLER  
(1) MISCELLANEOUS CABLES & CONNECTORS

- REMOVE EXISTING SIGNAL POLE AND INSTALL STEEL STRAIN POLE D AT STA. 147+08.45 54.53' RT.
- RE-INSTALL 2 EXISTING PED HEADS AND PED DETECTORS ON POLE D.
- INSTALL JUNCTION BOX B2.
- SPLICE LOOP WIRES TO ONE 1-PAIR LOOP LEAD-INS INSIDE JB B2.
- INSTALL 1" RS FOR TRANSITION OF LOOPS IN THE PAVEMENT B2.

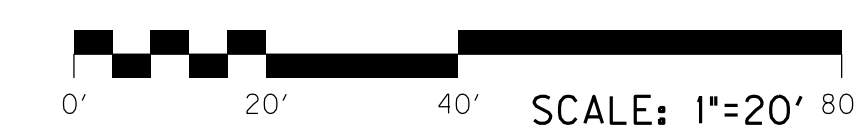
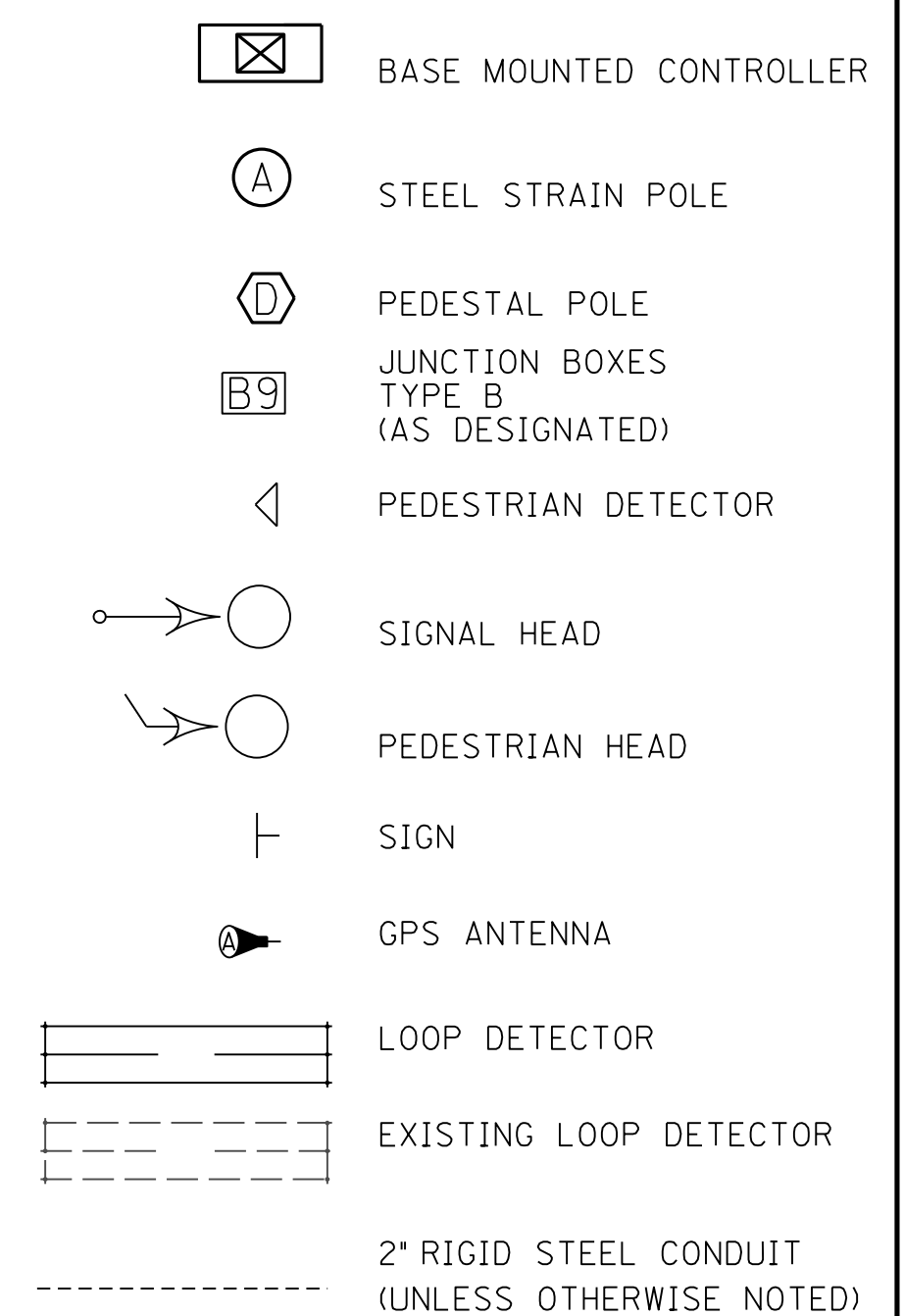
- INSTALL STEEL STRAIN POLE C AT STA. 147+74.18 54.83' RT.
- INSTALL JUNCTION BOX B4.
- SPLICE LOOP WIRES TO ONE 1-PAIR LOOP LEAD-INS INSIDE JB B4.
- INSTALL 1" RS FOR TRANSITION OF LOOPS IN THE PAVEMENT B4.

- EXISTING PED POLE B, 2 PED HEADS AND PED DETECTORS TO REMAIN.

NOTES:

1. PEDESTRIAN DETECTORS SHOULD BE INSTALLED A MAXIMUM OF 10" FROM SIDEWALK FOR ADA COMPLIANCE.
2. REMOVE ALL SIGNAL HEADS, SIGNAL POLES AND MAST ARMS TO SALVAGE AND DELIVER
3. THE CABINET SHALL SUPPLY CLAMP ASSEMBLIES FOR MESSENGER CABLE ATTACHMENTS BASED ON THE PRELIMINARY DESIGN OF THE POLES. IF THE ATTACHMENT LOCATIONS FOR CLAMP ASSEMBLIES ARE MORE THAN 2 FEET FROM THE TOP OF THE POLE, THE CONTRACTOR SHALL PROVIDE REPLACEMENT CLAMP ASSEMBLIES THAT WILL FACILITATE THE INSTALLATION. CONTRACTOR SUPPLIED CLAMP ASSEMBLIES SHALL BE INCIDENTAL TO THE INSTALLATION OF THE STEEL STRAIN POLE. CONTRACTOR SUPPLIED CLAMP ASSEMBLIES SHALL CONFORM TO THE SPECIFICATIONS STATED ON THE POLE BASE/SIGNAL HEAD DETAILS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE REPLACEMENT ASSEMBLIES TO THE DIVISION OF TRAFFIC OPERATIONS FOR APPROVAL.
4. COORDINATE LOCATION OF TURN ARROWS SHOWN ON PAVEMENT MARKING SHEETS WITH ENGINEER TO MINIMIZE PLACEMENT OF ARROWS ON TRAFFIC DETECTOR LOOPS.

LEGEND



TRANSFORMING DIXIE HIGHWAY  
W. BROADWAY @ S. 9TH ST.

FILE NAME: C:\PWORKING\PI\TT\DI998425\T03900PL.DGN

USER: crabar  
DATE PLOTTED: January 1, 2001

E-SHEET NAME: T03900PL

MicroStation v8.11.9.832



FILE NAME: J:\0 UNARCHIVED (TEMP)\TDH-ADDENDUM 2\PLAN SHEETS\DONAR0020BSU.DGN

USER: TBALLARD  
DATE PLOTTED: August 18, 2017

E-SHEET NAME: RO020BSU

MicroStation v8.11.9.832

**PAVING AREAS**

ITEM	S	Q	U	A	R	E	Y	A	R	D	S
1.25' CL3 ASPH. SURF. 0.38A PG64-22	160161.25	1580.11	992.22	164.00							162897.58
2.00' CL3 ASPH. BASE 1.00D PG64-22				164.00							164.00
3.00' CL3 ASPH. BASE 1.00D PG64-22		181.78									181.78
3.25' CL3 ASPH. BASE 1.00D PG64-22	3229.58										3229.58
3.50' CL3 ASPH. BASE 1.00D PG64-22	3229.58										3229.58
4.00' CL3 ASPH. BASE 1.00D PG64-22								338.30			338.30
4' DGA	368.89	181.78		13823.00							14373.67
6' DGA				164.00							164.00
JPC PAVEMENT - 8 IN	3150.69	181.78									3332.47
8' CEMENT CONCRETE ENTRANCE PAVEMENT				13789.00							13789.00
1.25' ASPHALT PAVE MILLING & TEXTURING	58201.22	1398.30	992.20								60591.72
5.50' ASPHALT PAVE MILLING & TEXTURING	15840.40										15840.40

**PAVING SUMMARY**

ITEM CODE	ITEM	UNIT	ROCKFORD LANE	7TH STREET ROAD	ENTRANCES	ASPHALT WEDGE	TOTAL PROJECT
00001	DGA BASE	TON	42		3,237		3,364
00214	CL3 ASPH BASE 1.00D PG64-22	TON	30		18	74	1,322
22906ES403	CL3 ASPH SURF 0.38A PG64-22	TON	109	68	12		11,201
02084	JPC PAVEMENT-8 IN	SOYD	182				3,333
02101	CEM CONC ENT PAVEMENT-8 IN	SOYD			13,789		13,789
02677	ASPHALT PAVE MILLING & TEXTURING	TON	96	68			8,958

**NOTES**

- ALL ASPHALT MIXTURES SHALL BE ESTIMATED AT 110 LBS. PER SQ. YD. PER INCH OF DEPTH, UNLESS NOTED OTHERWISE.
- ① ESTIMATED AT 115 LBS. PER SQ. YD. PER INCH OF DEPTH.
  - ② ESTIMATED AT 100 LBS. PER SQ. YD. PER INCH OF DEPTH.
  - ③ ESTIMATED AT 95 LBS. PER SQ. YD. PER INCH OF DEPTH.
  - ④ THIS CHART REPRESENTS A PLAN SHEET BREAKDOWN OF THE BID ITEM JPC PAVEMENT 8".

SHEET	QUANTITY
R3	38
R5	391
R7	312
R9	88
R11	57
R13	331
R15	247
R17	24
R19	33
R21	8
R23	249
R25	201
R27	155
R29	24
R31	31
R33	20
R35	35
R37	56
R39	47
R41	36
R43	320
R45	0
R47	56
R49	64
R51	76
R53	178
R55	14
R57	46
R59	0
R61	0
R61	0
R63	0
R65	14
R67	0
R69	0
R71	182
Totals	3,333

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APPENDIX A – CITY OF COLUMBUS STANDARD CONSTRUCTION DRAWINGS FOR JUNCTION BOXES

APPENDIX B – LOUISVILLE METRO PUBLIC WORKS & ASSETS UTILITY POLICY

the spreadsheet prior to its implementation. All fiber optic markers, splices, tracer wire, training, testing, support equipment and miscellaneous items shall be incidental to the cost of the fiber optic pay items. Drop cable will be measured by linear foot, measured between the splice enclosure and the center of the termination panel location, plus an allowance for cable coiled at junction boxes, splices and structures.

**BASIS OF PAYMENT**

Fiber optic cable will be paid as indicated below, and will include furnishing all materials, installation, splicing, equipment, labor and incidentals necessary to complete the work specified.

<u>Unit</u>	<u>Description</u>
Linear Foot	Fiber Optic Cable, 144 Strand
Linear Foot	Fiber Optic Drop Cable, 12 Strand

**FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND);  
FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND);**

Furnish bend-insensitive G.657.A1 or G.657.A2, single-mode, step-index dielectric cable, manufactured in the United States. Airblown/pushable fiber optic cable is only permitted for installation in micro-duct. Airblown/pushable fiber optic cable shall not be unprotected. Only one cable shall be installed per micro-duct.

Unless otherwise specified herein, any applicable requirements of "Fiber Optic Cable", including but not limited to testing, splicing, connections, packaging/shipping, and minimum skills shall apply.

Cable shall be 8.1-8.3/125 um single-mode, bend-insensitive optical fiber cable containing glass of type, Corning SMF-28e, AFL SR-15e, or approved equal, and that meets the following specifications:

ITU-T G.652 (Categories A, B, C and D)
IEC Specification 60793-2-50 Type B1.3
TIA/EIA 492-CAAB
Telecordia GR-20

All cables shall be free of material or manufacturing defects and dimensional non-uniformity that would:

- Interfere with the cable installation using manufacturer recommended cable installation methods.
- Degrade the transmission performance and environmental resistance after installation. Inhibit proper connection to interfacing elements.
- Otherwise yield an inferior product.

<u>Unit</u>	<u>Description</u>
Each	Install External UPS System Cabinet

**CONTROLLER UNIT**

Install actuated, 8-phase, solid state digital microprocessor type controllers -in existing or new cabinets with all accessories (including controller modules and software) that are necessary to make the controllers completely functional and operational at each of the signalized intersections to be upgraded as indicated in the plans. The controllers, to be provided by KYTC, shall be Model 2070 compliant, meeting the latest published KYTC controller specification.

**METHOD OF MEASUREMENT**

The work as described will be measured as each individual unit installed.

**BASIS OF PAYMENT**

Payment shall be made per the bid item for each controller that is installed per pay item.

<u>Unit</u>	<u>Description</u>
Each	Install ATC Controller
Each	Install 1C ATC Module w/Maxtime

**SYSTEM INTEGRATION**

**DESCRIPTION**

This pay item includes all work required to seamlessly integrate new signals and components into the traffic and transit networks in order to achieve the same level of functionality as the existing system. This integration includes both the traffic and station/transit networks.

The Contractor shall be responsible for integrating all of the new controllers along the BRT route that must provide Transit Signal Priority (TSP) functionality (KYTC compliant 2070 ATC’s with Intelight Max Time software) with a to be determined Advanced Traffic Management System (through a future Louisville Metro procurement document). The envisioned ATMS must be capable of fully supporting the Max Time software and meet the Lexington Fayette Urban County Governments ATMS specification. The new ATMS must also allow communications, monitoring and commanding capabilities with the existing compliment of 170E controllers along the north section of the BRT route (with the latest KYTC WAPITI firmware) that will remain on the existing copper and multi-mode fiber interconnect system. Additionally, the new ATMS must be capable of replicating all current TRANSPHAT functionality (with acceptable upload and download speeds). If limited modifications are required to the WAPITI firmware/chip in order for the existing 170E controllers to utilize additional capabilities of the ATMS, those upgrades will be completed by Louisville Metro.

Existing traffic signal timing shall be duplicated and tested on new 2070 traffic signal controllers, modified as necessary to run on the Intelight Max Time Software. Proposed basic, coordinated, and TSP traffic signal timing tables will be provided to the Contractor by Louisville Metro which will need to be programmed on the controllers. Both existing and proposed signal timing programs shall be bench tested for locations with new 2070 controllers. Proposed timing shall also be bench tested for locations with 170E controllers that will remain. Once tested, all existing signal timing programs (for both new 2070 and existing 170E controllers to remain) shall be archived in case the programs need to be reloaded following proposed timing implementation. In a coordinated effort, proposed signal timing

shall be implemented via the installation of new 2070 controllers and loading of proposed timing plans on existing 170E controllers.

Network testing shall be performed as part of this pay item and is required before any of the integrated signals can be accepted by the Engineer.

### **SIGNAL MIGRATION TO NEW SYSTEM**

Where applicable, migration of intersection communication from the existing wireless system to the new fiber optic network must be coordinated so that the transition of signals to the new system does not negatively impact the operation of signals not yet on the new system or the operation of the signals to be maintained on the existing copper system.

### **TESTING**

#### ***TEN DAY COMMUNICATIONS VERIFICATION PERIOD***

Preliminary Ten (10) Day testing shall be performed by the Contractor prior to cutting communications to any existing field devices or migration of any field device communications to the new system. This testing shall verify that Ethernet network connectivity between communications nodes and field devices has been established, and includes all interconnect, wireless, and network equipment and infrastructure.

The Contractor shall submit a list of intersections/sites and any other field devices to be tested (test group), to the Engineer for approval prior to the start of testing. All devices that will be connected to the proposed communication network shall be tested (as one test group or as separate test groups). The Contractor may submit to the Engineer an alternative testing plan in order to better coordinate with other projects or constructability issues. Additionally, the Engineer may modify the testing plan as necessary.

The Ten-Day Communications Verification Period shall verify that Ethernet network connectivity between communications nodes and field devices, within the respective test group, have been established, and includes all interconnect, wireless, and network equipment and infrastructure. Once the testing period has started, network log files for all communications links (between the communications node and the field device Layer 2 network switch) within the test group shall be kept by the Contractor for the duration of the testing period. Any network event or failure shall be immediately reported to the Engineer. Depending on the cause and/or severity of a failure event the Engineer may determine that the problem(s) be resolved and the testing period be restarted at zero days.

The City may remotely monitor communications to any of the sites undergoing testing at any time.

The Contractor shall submit a report of the communications performance of the test group during the testing period, including all system events or failures, to the Engineer for approval prior to start of Thirty-Day Operation Period.

#### ***THIRTY-DAY OPERATIONAL PERIOD***

Testing shall consist of a Thirty-day Operational Period. Prior to beginning any testing, the Contractor shall complete the Ten-Day Communications Verification Period for the test group to be tested and provide all submittals, certifications, and reports necessary to determine that the testing equipment will meet specifications. All testing shall be performed in the presence of the Engineer.

The Contractor shall create a detailed test plan that clearly indicates the requirement(s) covered by each test case and also ensure that the requirements of the Testing Matrix are met.

- Monitoring of intersection phase status
- Monitoring of intersection alarm status
- Monitoring of intersection preemption status
- Monitoring of intersection communication status
- Monitoring of intersection coordination status (in step, in transition, etc.)
- Testing of any modifications or extensions to local and/or central software
- Monitoring of Bus Station CCTV
- Monitoring of the Station Display Units

The Contractor shall identify which corridors or region of intersections are ready to be tested. All intersections will not be tested at one time, rather in logical regional groups of intersections proposed by the Contractor and approved by the Owners prior to any testing commencing.

The Contractor shall provide a test procedure and test data forms to the Owners for approval at least thirty (30) calendar days before testing is to begin. The Contractor shall provide a requirement matrix that clearly maps each requirement to a specific test case(s). The Owners will review the test procedures and matrix and return them with comments or approval to the Contractor within twenty-one (21) calendar days after receipt. The test procedures proposed by the Contractor shall be comprehensive, and in sufficient detail to allow the Owners to determine whether or not the system provided fully complies with the system requirements included in these Special Notes for ITS and Plans. If the Owners deems the test procedure to be unacceptable, the Contractor shall revise the procedures according to the Owners' comments without additional cost to the project.

At a minimum the test procedures shall include the following:

- A step-by-step outline of the test sequence to be followed, showing a test of every system requirement
- A description of the expected operation, output and test results
- An estimation of the test duration proposed test schedule
- A data form to be used to record all data and quantitative results obtained during the tests
- A description of any special equipment, setup, manpower, or conditions required for the test
- Meet all requirements of the Testing Matrix
- Monitoring of intersection phase status
- Monitoring of intersection alarm status
- Monitoring of intersection preemption status
- Monitoring of intersection communication status
- Monitoring of intersection coordination status (in step, in transition, etc.)
- Testing of any modifications or extensions to local and/or central software

The Thirty-Day Operational Period will verify that the entire corridor / group of intersections, including primary and secondary communications routes where applicable, functions properly and in accordance with these Special Notes for ITS and Plans. The Thirty-Day Operational Period shall not be completed until all items conform to the Special Notes for ITS and Plans. The Contractor shall perform and document all necessary testing.

The formal start of the Thirty-Day Operational Period or “burn-in” period shall be documented by the Contractor and approved by the Owners. The Thirty-day Operational Period will include the completion of a 30-day period, by the end of which the entire integrated system operates along a corridor / group of intersections without failure and without detrimental effect of other intersections online with the system.

In the event of a failure during the Thirty-Day Operational Period, the Contractor shall repair the equipment as necessary within two (2) working days of the time of notification by the City and the Thirty-day Operational Period at the sole discretion of the Engineer may be suspended and restarted or restarted at zero hours. If the failure is a signal system emergency, a qualified representative from the software and hardware manufacturer shall respond within two hours of notification as required in the maintenance agreement described herein. Signal system emergencies are defined as a condition related to the malfunctioning of the signal hardware or software that impedes normal operation of the signal timing plans, such as going into flash mode. The Contractor shall be responsible for all of the cost involved in the repair of the equipment, including re-testing if necessary.

The manufacturer shall provide certification that the replacement units supplied under these specifications are not units previously rejected by some other municipality or state.

The Contractor or Owners, as mutually agreed to, shall log all failures during the period, using a mutually agreed upon form. In the event that 5% or more of class of equipment fails during the Thirty-day Operational Period, the Contractor shall determine the cause of failure and make any necessary modifications and/or replacements to prevent reoccurrence. All modifications or replacements shall be approved by the Engineer. In the event of a class modification or replacement of components, all such components shall be subjected to the Thirty-day Operational Period.

**METHOD OF MEASUREMENT**

All materials and labor as described in “System Integration” – will be measured as one lump sum.

**BASIS OF PAYMENT**

Signalization Integration panel will be paid for at the contract price for System Integration:

<u>Unit</u>	<u>Description</u>
LS	System Integration

**TESTING MATRIX**

Functional Requirements	Source Document	Test	Pass/Fail	Corrective Action Taken	Date
Traffic Controllers: The Prime Contractor will be furnishing and installing new controllers with all required equipment as specified in the Special Notes for ITS. The Contractor shall be responsible for integrating the new <u>and existing</u> controllers with the existing <u>central system</u> ATMS software ( <u>Centraacs</u> ) on the new fiber network and maintaining integration with existing controllers that will remain on the existing copper interconnect system. The Contractor shall provide a test methodology that will be	Project Special Notes for ITS	Verify by inspection and system Acceptance testing			



conducted to ensure that each controller is ready for implementation in the field.					
<p><b>Communications Network:</b> As part of this project, a fiber optic communication network will be installed along with Ethernet communications equipment to connect all signalized intersections and video cameras. The fiber optics communications backbone will support Gigabit speeds.</p> <p><b>Requirements:</b></p> <ul style="list-style-type: none"> <li>· The communication system must be able to support Ethernet communication to the new traffic signal controllers.</li> <li>- The communication system must be able to support Ethernet communication to the new station IT.</li> <li>· The new Ethernet communication system shall be based on IP network addressing over Fast Ethernet.</li> <li>· The System Integrator shall coordinate with the Louisville Metro and TARC on developing and configuring the IP addressing.</li> <li>· At the intersection control cabinet, the minimum committed information data rate provided will be 4 MB with no more than 1second latency.</li> <li>· The network will be 100 MB in full duplex.</li> </ul>	Project Special Notes for ITS	Verify by inspection and system Acceptance testing			
<p><b>Layer 2 Ethernet Switch – By Type:</b> The Contractor shall furnish and install environmentally hardened Layer 2 Ethernet switches as shown on the Plans. Layer 2 Ethernet switches shall be manufactured by Cisco.</p>	Project Special Notes for ITS	Verify by inspection and system Acceptance testing			
<p><b>Fiber Optic Ethernet Transceiver:</b> The Contractor shall furnish and install single mode fiber (SMF), small form factor pluggable (SFP) Gigabit Interface Connector (GBIC) modules at locations as shown on the plans.</p>	Project Special Notes for ITS	Verify by inspection and system Acceptance testing			
<p><b>Controller Unit, As Per Plan:</b> The Contractor shall furnish and install traffic signal controllers. This will consist of the controller unit, timing unit software and coordination signal timing, communication software with functional Ethernet modules, into the existing prewired cabinet.</p>	Project Special Notes for ITS	Verify by inspection and system Acceptance testing			
<p><b>Fiber Optic Cable, by Strand Count:</b> Upon receipt of cable reels, the Contractor shall test each fiber separately with an Optical Time Domain Reflectometer (OTDR) to verify fiber length, attenuation, and continuity. Furnish documentation for test results. The Contractor shall monitor cable pull tensions</p>	Project Special Notes for ITS	Verify by inspection and system Acceptance testing			

<p>at all times during pull using a remote sensing puller, strain gauge, or running line tensiometer and shall record the maximum pulling tension for each cable pull. The Contractor shall furnish and install communication system cables of the type specified and associated components in accordance with the plans.</p>					
<p>Fiber Optic Splice Enclosure, By Type, 72 Splice: The Contractor shall furnish and install fiber optic splice enclosures as shown on the Plans. The splice enclosures shall be corrosion resistant, rodent proof, re-enterable, and manufacturer certified for underground or overhead installation.</p>	<p>Project Special Notes for ITS</p>	<p>Verify by inspection and system Acceptance testing</p>			
<p>Interior Fiber Optic Patch Panel: The Contractor shall furnish and install a termination panel which consists of a self-contained enclosure that is standard 19" equipment rack mountable and meets the capacity requirements as indicated in the plans.</p>	<p>Project Special Notes for ITS</p>	<p>Verify by inspection and system Acceptance testing</p>			

**FIBER OPTIC PATCH CORD, 2 FIBER**

**DESCRIPTION**

The Contractor shall furnish and install single mode OS2 fiber optic duplex patch cables at locations as shown on the plans.

**MATERIALS**

The optical patch cords furnished under this contract shall be constructed of duplex single fiber, jacketed, cable equipped with factory assembled optical connectors at both ends (ST, SC-Duplex, or LC/UPC Duplex per required connections).

The sheath shall be flame retardant and coded NFR in accordance with the National Electric Code.

Patch cords for connections from fiber distribution panel (FDP) to FDP or from fiber patch panels shall be equipped with connectors approved by Engineer on both ends of the patch cord.

The optical connectors on the other end of these patch cords shall be compatible with the connectors on the optical transceivers furnished by this project.

Optical fiber connectors shall satisfy all of the interface parameters of equipment components as may be defined by the transmission equipment specifications.

The connector shall be pre-terminated on the fiber cable and core-aligned fusion spliced when applicable. All connectors shall be compliant with industry standard ANSI/TIA/EIA-568B.3. The connector shall comply with TIA/EIA Fiber Optic Connector Intermateability Standard (FOCIS) document, TIA/EIA-604-3.

Connector shall be consistently capable of insertion losses <= 0.3db (typical) and shall be <= 0.75 db when installed in accordance with the manufacturer's recommended procedure and tested in

accordance with FOTP-171. Connector reflectance shall be measured at the factory to be and  $\leq -55$  db for Ultra Physical Contact (UPC).

Manufacturer shall be ISO 9001 and TL 9000 registered.

No-epoxy, no-polish quick mount single-mode connectors shall be provided.

**CONSTRUCTION**

- Connect patch cables at both ends – fiber patch down and transceiver.
- Coil additional fiber cable, tie together, and secure.
- Furnish and install identification labels on each end.

The Contractor shall be responsible for providing a complete, functional system including all necessary cables and connectors in accordance to the specifications and as specified on the plans. All miscellaneous patch and interconnect cables shall meet the proposed equipment specification requirements and shall meet EIA/TIA telecommunications standards.

**METHOD OF MEASUREMENT**

The work as described will be measured as one unit for each of the installations specified, and shall include all materials, equipment and incidentals, complete in place. Terminations, connections, and other miscellaneous items and materials shall be incidental to this work and no separate payment will be made.

**BASIS OF PAYMENT**

Payment for all fiber optic patch cords shall be included in “Layer 2 Ethernet Switch – Field Mount, By Port Count” and “Layer 2 Ethernet Switch – Rack Mount”.

**FIBER OPTIC CABLE, FAN-OUT KIT, 12 FIBER**

**DESCRIPTION**

The Contractor shall furnish and install buffer tube fan-out kits at each fiber optic cable splice or termination location to complete connection of the fiber optic network.

**MATERIALS**

Buffer tube fan-out kits shall be outdoor rated and provide terminations for 12-fibers or as identified on the drawings. The fan-out assembly shall be color coded to match the color scheme of the connecting fiber optic cable. Fan-out assembly shall provide 25-inch length or as needed for the splice or connector housing.

Connectors attached to the fan-out kit are incidental to the fan-out kit.

**CONSTRUCTION**

Fiber optic cable shall be inserted into the fan-out kit, connectorized, and inserted in the termination panel.

The Contractor shall be responsible for providing a complete, functional system including all necessary cables and connectors in accordance to the specifications and as specified on the plans.

**METHOD OF MEASUREMENT**

The work as described will be measured as one unit for each of the installations specified, and shall include all materials, equipment and incidentals, complete in place. Terminations, connections, and

other miscellaneous items and materials shall be incidental to this work and no separate payment will be made.

**BASIS OF PAYMENT**

Payment for all fiber optic Fan-Out Kits shall be included in “Fiber Optic Splice Enclosure, Clamshell, 72 Splice”, “Fiber Optic Splice Enclosure, Dome, 72 Splice”, and “Interior Fiber Optic Patch Panel”.

**PASSENGER INFORMATION SYSTEM**

**DESCRIPTION**

The Contractor shall furnish and install the Digital Signage Displays, and Passenger Information System Media Player as indicated on the plans and riser diagrams, for the customer information system.

The Hardware Installer shall work with the Software and Integrator from Special Note “Passenger Information System Software and Integration.” The integrator will perform the work to integrate from TARC central systems. The Hardware Installer shall insure the hardware and system components meet the “Integrator’s” requirements.

**MATERIALS**

The Passenger Information System shall comply with the following details

*Real Time Display:*

- (1) Power requirement: 90 – 240 VAC, 47 – 63 Hz
- (2) Resolution: 1920 x 1080 (1080p/60)
- (3) Color Depth: 10 bit/ 1.06 billion colors
- (4) Contrast Ratio: 1000:1, Aspect ratio 16:9
- (5) Viewing Angle: 178°(H) x 178°(V)
- (6) Brightness: 700 nits
- (7) Input signal: HDMI
- (8) Operating Temp: -40° – +140°F (-40° – +60°C)
- (9) Display to have IP 68/NEMA 6 Fully-Sealed Enclosure
- (10) Mounting: 600mm x 400mm VESA Hole Pattern
- (11) Basis of Design: Tru-Vu SXOB-42-XTR-P” Outdoor Waterproof Sunlight Readable LCD Monitor

Note: All monitors will need to be verified with the sign manufacturer for proper fit and finish with the Sign Designer and HDR Architect.

*Real Time Media Player:*

- (1) Video Decoder: Native 4K@60p CEA HDR10 video decoding
- (2) Video Output:
  - o HDMI: 1920x1080 @60hz
  - o Display Ports Up to 3840 x 2160 @ 30Hz
- (3) Audio: 3.5mm Audio Out (analog & digital)

- (4) Storage: External micro SD Slot (SDHC and SDXC); SDHC storage up to 32GB SDXC storage up to 2TB
- (5) Ethernet:
  - o Gigabit LAN
- (6) Operating Temp: 0° to 69°C
- (7) Basis of design: BrightSign XD1033

Contractor to supply a USB based GPS dongle compatible with the above media player to supply local LAT/LON coordinates to be used in the next bus server application as required. Local coordinates are to be utilized in locating the bus stop where installed. It is the intent that the locations and stops need not be hard coded into the device but that the bus stop be determined by the local GPS coordinates and the nearest stop be pulled from either the TARC Google schedule feed, Transit App or Trapeze. Integration will be performed by “Passenger Information System Software and Integration.”

**CONSTRUCTION**

The contractor shall install the Digital Signage Displays for the passenger information system at each station pylon. The displays shall mount per the pylon manufacturer as indicated on the pylon plans. All power and signal wiring shall be provided back to the pylon systems enclosure in raceways provided by the pylon manufacturer. Contractor shall provide Active High Speed HDMI Cabling and/or Display Port to HDMI Devices or Cabling, capable of providing 1080p resolutions up to 100 feet. Coordinate complete installation with pylon manufacturer and submit mounting details to engineer for approval prior to installation.

Integration will be performed by “Passenger Information System Software and Integration.”

Testing shall be performed per the provided and approved testing plan. The Testing plan shall be approved by the Project Manager.

**METHOD OF MEASUREMENT**

The Digital Signage Displays, Media Player, Cabling, and devices will be measured as each for furnishing and installing complete in place.

**BASIS OF PAYMENT**

Payment for Digital Signage Displays, Media Player, Cabling, and Devices as provided shall be included in Sign Pylon.

**TEXT TO SPEAK ANNUNCIATOR SYSTEM**

**DESCRIPTION**

The Contractor shall furnish and install the Text to Speak Annunciator System, speakers and all ancillary equipment for a complete and operational system, as indicated on the plans and riser diagrams. The work shall include equipment and devices to be installed in the station Pylon.

Contractor shall consult TARC Bus Operations for information regarding the existing RTS and Text to Speak systems and functionality.

TARC currently employs the Trapeze Novas AVL system, which is used to track the locations and schedules of buses. Data from the AVL system is queried and stored in a database, which is updated

every 30 seconds. A web service, hosted by TARC, feeds the Real Time applications, including the Annunciators. Each Annunciator has a unique IP address.

When the annunciator button is pressed, the web service is used to call information related to the bus stop location. The web service passes the required route, direction, and time of the messages for the Annunciator System to play at the bus stop.

The Hardware Installer shall work with the Software and Integrator from Special Note "Passenger Information System Software and Integration." The integrator will perform the work to integrate from TARC central systems. The Hardware Installer shall insure the hardware and system components meet the "Integrator's" requirements.

## **MATERIALS**

The Text to Speak System shall comply with the following details:

- Push Button
- Visual: LED Super-bright Red
- Audible: Dee 2300 Hz – Dah 2000 Hz
- Latching Mode: LED with PBI-L
- Tactile: Optional tactile arrow
- Operating Voltage DC: 18 – 24 VDC
- Operative Voltage AC: 12 – 17 VAC
- On Resistance: < 150 ohm
- Operating Mode: Normally Open
- Closure Dwell: 150 ms
- Maximum Terminal Voltage During Closure: 1.5 V
- Switch: Piezo electric, solid state switch
- Operating temp: -40° – +85°C
- Basis of Design: Campbell Company 4EVR
- Annunciator Speaker

The Annunciator Speaker shall include an approx. 2.5" square frame, 2.35-oz. ceramic magnet, 8 Ohm impedance, and a moisture-resistance cone. The speaker shall be 50W, 8ohm 70v, with a frequency response of 200Hz – 8kHz and a sensitivity of 87dB measured at 1W/1M.

Audio Connection: 9" Stripped and Tinned Leads

Basis of Design: Quam CIS8/8

Text to Speak Module Operating temp: -30° – +70°C

Storage temp: -40° – +85°C

Basis of Design: TextSpeak TSS-EM-ENC1

### ***USB Memory***

Construction Requirements:

The contractor shall install the Text to Speak Annunciator System, including Speakers, Modules, Push Buttons and all ancillary equipment as indicated on the plans and diagrams. The system shall be

connected at the TARC head end. Installation of Text to Speak System and wiring of the system shall be coordinated with the pylon manufacturer. The contractor shall provide all mounting brackets required.

**METHOD OF MEASUREMENT**

The Text to Speak System, including Speakers, Module, Push Buttons, and ancillary equipment will be measured as each for furnishing and installing complete in place.

**BASIS OF PAYMENT**

Payment for Text to Speak System shall be included in Sign Pylon.

**PASSENGER INFORMATION SYSTEM SOFTWARE AND INTEGRATION**

**DESCRIPTION**

TARC is implementing a passenger information system that includes LCD Displays and Text-to-Speak announcements. The Contractor shall develop and integrate the Text-to-Speak Annunciator System and Real-Time Displays.

Contractor shall consult TARC Bus Operations for information regarding the existing Real-Time Services and Text-to-Speak systems and functionality.

TARC currently employs the Trapeze Novas AVL system, which is used to track the locations and schedules of buses. Data from the AVL system is queried and stored in a database, which is updated every 30 seconds. A web service, hosted by TARC, feeds the Real Time applications, including the annunciators and video driver.

**Requirements**

*Text-to-Speak Software*

- Supplied voices shall be premium voices and the system shall accommodate both English and Spanish.
- Ambient noise detection and automatic volume adjustment shall be implemented.
- A pleasant, audible signal for the visually impaired shall indicate the location of the annunciator pushbutton. (It is expected that the speaker and annunciator pushbutton shall be located adjacent to each other.)
- Servers shall be VMware based, Windows Server 2016. With any and all initial licensing for all components supplied as part of this project.
- Integrator shall provide a next bus server application that will interface with either TARC's Google Schedule feed and Google Real time feed (preferred) or the Trapeze System directly. The system must include an automatic failover to a secondary server should the primary server fail. TARC will provide the hardware platform on which the expected two virtual servers shall reside.
- Software shall facilitate TTS audio annunciation of the next scheduled buses for all lines that utilize the stop in the appropriate direction and shall utilize real time data if available and scheduled data if real time data is not available. An indication of whether real time or scheduled shall be apparent in the verbiage. Next bus information shall include Line, Signage, and arrival time (estimated or scheduled).
- Remote health monitoring, remote programming, remote programming updates and remote firmware updates shall be a part of the system. Any software to perform these functions along with any and all licensing shall be provided as part of this project.

### *Real-Time Display Software*

- Integrator shall provide a next arrival server application that will interface with either TARC's Google Schedule feed and Google Real time feed (preferred) or the Trapeze System directly. The system must include an automatic failover to a secondary server should the primary server fail. TARC will provide the hardware platform on which the expected two virtual servers shall reside.
- Alternatively, the Integrator shall provide the next bus display service through an internet feed from Transit App (thetransitapp.com) adapted to fit TARC's formatting needs if necessary.
- Any required servers shall be VMware based, Windows Server 2016. With any and all initial licensing for all components supplied as part of this project.
- Software shall facilitate display of the next scheduled buses for all lines that utilize the stop in the appropriate direction and shall utilize real time data if available and scheduled data if real time data is not available. An indication of whether real time or scheduled shall be apparent on the screen. Next bus information shall include Line, Signage, and arrival time (estimated or scheduled).
- Service alerts that affect lines serviced by the stop shall be displayed.
- A static service map of the lines that interact with the stop shall be displayed. An appropriate and easy update mechanism for the static map shall be provided.
- A larger dynamic service map of the area around the stop (local section) shall be displayed showing the real time location of buses along the local corridor (in the appropriate direction for the lines servicing the stop). The bus icons shall indicate the vehicle orientation, line and headway signage.
- The Date and Current time shall be displayed.
- Additional space should be reserved for future media feeds.
- All text shall follow any applicable ADA size and font requirements.
- The background image shall have a customizable default image and be individually customizable by stop should something different from the default be desired. An easy method of implementation and control of both the default background image and individual stop background images shall be provided.
- Connect to the USB based GPS dongle compatible with the media player supplied from Special Note "PASSENGER INFORMATION SYSTEM" to supply local LAT/LON coordinates to be used in the next bus server application as required. Local coordinates are to be utilized in locating the bus stop where installed. It is the intent that the locations and stops need not be hard coded into the device but that the bus stop be determined by the local GPS coordinates and the nearest stop be pulled from either the TARC Google schedule feed, Transit App or Trapeze.

### *Testing*

The software provide shall provide a testing plan for approval by the Project Manager. The testing plan shall provide for steps to determine the software's applicability and performance for the field conditions.

TARC shall be the owner of all software written for Text-to-Speak or Passenger Information systems.

### **METHOD OF MEASUREMENT**

A complete software package that can perform to the requirements for the Text-to-Speak and the Passenger Information system. Testing shall be completed and accepted before final payment is made.

### **BASIS OF PAYMENT**

Payment for Text-to-Speak Software and Integration and Real-Time Display Software and Integration.



## UNINTERRUPTED POWER SUPPLY

### DESCRIPTION

The Contractor shall furnish and install an Uninterrupted Power Supply (UPS) which shall be a turnkey, true on-line, power conditioner and battery backup or uninterruptible power system (UPS) designed for outdoor use in extreme environments. The Alpha Micro Cabinet should be mounted inside the Pylon. The UPS shall be capable of providing at least 2.0 hours of operation at its maximum power rating.

### MATERIALS

This specification describes a continuous duty, on-line, solid state, uninterruptible power system (UPS). The UPS shall operate as a line interactive design - utilizing a ferroresonant transformer or electronic module, battery charger, solid state inverter, fail-safe bypass system, and integral battery subsystem. The specified equipment herein shall be referred to as an UPS.

Transfers to and from battery operation shall be uninterrupted. Furthermore, there shall be no mechanical switching when the UPS transfers to and from battery operation.

The UPS and batteries shall be designed to fit into a NEMA 3R enclosure intended for outdoor installations, inside the Alpha Micro Cabinet. It shall be of modular construction for ease of servicing in the field. The unit shall be rack mountable.

Primary application of the UPS is to provide backup power to station equipment in the event of a power outage. The UPS must provide up to 1000W/VA in power. It shall be single-phase 120 volts, 60 Hz.

The UPS shall consist of a power conditioning and interface device, battery charger, inverter, batteries, fail-safe bypass, protective devices, and monitoring circuitry as specified herein. The Traffic Signal UPS shall automatically assure continuity of conditioned and regulated power within specified tolerance, without interruption, upon failure or deterioration of the input AC power source. Continuity of conditioned and regulated power to the critical load shall be maintained when input power is lost and until input power returns within specifications or until the batteries have been discharged.

The battery system shall consist of one or more strings (typically 4 or 6 batteries per string) of extreme temperature, deep cycle, AGM/VRLA (Absorbed Glass Mat/ Valve Regulated Lead Acid) batteries. Batteries shall be certified to operate at extreme temperatures from  $-40^{\circ}\text{C}$  to  $+74^{\circ}\text{C}$ .

The batteries shall be provided with appropriate interconnect wiring and a corrosion-resistant mounting trays and/or brackets appropriate for the cabinet into which they will be installed.

The interconnect cable shall be protected with abrasion-resistant nylon sheathing.

The interconnect cable shall connect to the base module via a quick-release circular connector.

The basis of design is the ALPHA Micro 1000, and Alpha Micro cabinet.

UPS Input / Output Requirements:

- Nominal input voltage: 120 VAC, single phase.
- Input voltage range: 85 – 150 Vac.
- Input current: 17.5 A nominal
- Nominal frequency: Auto-sensing
- Output voltage regulation:  $\pm 10\%$  over input voltage range

- Output current: 16.7 A nominal
- Output power at 50°C: 1000 W/VA
- Operating Temp: -40° – +74°C (-40° – +165°F). The system derates after 60°C
- Audible noise at 25°C: < 45 dBa at 1 metre (39 in)
- Typical output voltage THD: < 3%
- Typical efficiency: > 98% (resistive load)
- Typical transfer time: < 5 ms

**CONSTRUCTION**

The contractor shall install the UPS in the project field electrical cabinets. The UPS shall be fully wired and connected for a complete working load. The unit and micro cabinet shall be mounted inside the Pylon. Any mounting hardware and connectors shall be considered incidental and, will neither be measured nor paid. The contractor shall also furnish and install a minimum of 5-position power strip.

**METHOD OF MEASUREMENT**

Each UPS will be measured by the unit per each for furnishing and installing complete in place. The Micro unit shall include the ALPHA micro cabinet and batteries.

**BASIS OF PAYMENT**

Payment for Uninterrupted Power Supply (UPS) shall be included in Sign Pylon.

**ENVIRONMENTAL MONITOR**

**DESCRIPTION**

The Contractor shall furnish and install a networkable Environmental Monitor in each BRT pylon.

Environmental Monitor shall be a network device and shall support the most current version of SNMP.

Cabinets shall be equipped with monitoring equipment to detect continuous analog temperature, with high and low temperature alarms based on the analog input (High temperature alarm shall initially be set at 90 degrees F. / Low temperature alarm shall initially be set at 50 degrees F.)

Environmental Monitor shall be an AVTECH Room Alert 3E or approved equal.

**METHOD OF MEASUREMENT**

Each Environmental Monitor will be measured by the unit per each for furnishing and installing complete in place.

**BASIS OF PAYMENT**

Payment for Environmental Monitor shall be included in Sign Pylon.

**~~SHELF MOUNT MULTIMODE PHASE SELECTOR (WITH POLE MOUNTED ANTENNA)~~  
~~GPS POLE MOUNTED ANTENNA W/ RECEIVER~~**

**General**

Install multimode phase selector, GPS Antenna. A multimode priority control system shall operate in a manner that allows infrared, and Radio/GPS priority control technologies to interoperate and activate one another in a consistent manner. The priority control system shall consist of a matched system of

vehicle equipment and intersection equipment capable of employing data-encoded radio communications to identify the presence of designated priority vehicles. In preemption mode, the data-encoded communication shall request the traffic signal controller to advance to and/or hold a desired traffic signal display selected from phases normally available. A record of system usage by agency identification number, vehicle classification and vehicle identification number shall be created. The system software shall support call history analysis and reporting across any subset of intersections and/or vehicles independent of activation method. System software shall also support both on-site and remote configuration, programming and monitoring of the priority control system. The central system shall be located at Louisville Metro Traffic Office.

### **Vehicle Radio Geo-fencing**

The bus equipment shall have the following ability.

- The equipment shall be able to utilize geo-fencing to automatically turn on/off the radio transmissions when exiting/entering a bus compound. This feature would be used at facilities like the TARC maintenance campus.
- Data downloads would need to be performed over Ethernet via an RJ45 connection on the existing Digi transport WR-44 router currently deployed on the bus within the campus geo-fence.
- Maintenance would need to be able to override the geo-fence and toggle the radio on/off as needed.

### **Materials**

The Contractor shall provide the following:

- On-site Interface Software Package
- ~~F~~Provide a ~~F~~Four-~~c~~Channel ~~M~~Multimode ~~P~~Phase ~~S~~Selector ~~C~~Card, pole-mounted GPS antenna/receiver, and all associated interconnection cabling, power provisions, and hardware
- Corresponding wiring to connect system to traffic controller
- Central Management Software to be provided with installation support services and a new server to be located at Louisville Metro Traffic Office.

### **Construction Requirements**

The 4-channel phase selector must support infrared and GPS detection simultaneously. The phase selector must support four channels with two auxiliary inputs.

The Multimode Phase Selector shall have the features listed below.

- Four dual-priority and probe frequency channels
- Priority override: always higher over lower
- GPS Radio/GPS Unit input
- Low-priority output may be configured for first-come, first-served or all-channel active
- History log of most recent infrared and GPS system activities (10,000 entries)

- Appropriate mechanisms and visual indicators to enable diagnostics and test calls to each channel in an easy manner.
- IR detector inputs may be mapped to any channel

The physical dimensions of the Multimode Phase Selector should be sized to be rack mounted where allowable and shelf mounted as required.

The Operating Parameters of the Multimode Phase Selector should be as below:

- Voltage: +24 VDC or 120 VAC
- Temperature: -20°C and 70°C
- Humidity: 5% to 95% relative
- CE certified
- Compliant with NEMA TS-2
- Compliant with FCC

Central Server shall be provided as part of the project procurement. The server shall be rack mounted, Windows based, and meet the requirements of Louisville Metro with a hardware configuration that satisfies software provided by the vendor.

**Warranty**

The manufacturer of the required priority control system will warrant that, provided the priority control system has been properly installed, operated and maintained, component parts of a matched component system that prove to be defective in workmanship and/or material during the first five (5) years from the date of shipment from the manufacturer will be covered in a documented system-protection plan. Additionally the manufacturer must provide an added five-year maintenance plan for repair or replacement for a total of ten (10) years of product coverage.

The protection plan will warrant that component parts of a matched component system that are not subject to coverage limitations and prove to be defective in workmanship and/or material during the first five (5) years from the date of shipment from manufacturer will be repaired at no charge, and that extended coverage will be available for an additional five (5) years.

In total, the warranty/maintenance coverage must assure that system components will be available to allow system operation during the ten (10) year warranty/maintenance coverage.

A copy of the manufacturer's written warranty outlining the conditions stated above will be supplied with the bid. Coverage and coverage limitations are to be administered as detailed in the manufacturer's Warranty/Maintenance document.

**Testing**

The contractor will develop, document and implement a Field Unit Verification/Validation Performance Test Plan. The Verification portion of the plan will demonstrate system performance to the specifications guaranteed by the equipment provider and insure that the installations are completed per

manufacturer documented installation procedures. The Validation portion of the plan will demonstrate that the system meets user expectations as defined in the IFB document(s) and insure that any/all performance issues have been addressed.

The contractor will work with the user, stakeholders, and installers to finalize, coordinate and implement the Field Unit Verification/Validation Performance Test Plan. Successful Bidder will, furthermore, document and distribute Verification/Validation Performance Test Plan results in a predetermined and agreed to format.

The Field Unit Verification/Validation Performance Test will be completed no later than 60 days after award of contract. The Final Test Plan will specify the number of completed intersections and vehicles required to perform a comprehensive test. The test plan shall provide a summarized table for each intersection and vehicle noting the location, signal controller firmware, testing acceptance using the test call from the phase selector, vehicle calls are received and processed, and the signal controller is implementing the requests.

The project manager must approve the testing plan and results before final payment is released.

**METHOD OF MEASUREMENT**

The contract unit price for Multimode Phase Selector assembly, furnished and installed will include all labor and equipment specified in this Special Note, and miscellaneous materials necessary for a complete and acceptable installation, including new or additional surge protection equipment if necessary to accommodate the new intersection equipment, central equipment and operational software packages, firmware, and warranty documentation.

**BASIS OF PAYMENT**

Prices and payment will be full compensation for all work specified in this Special Note. Payment will be made under:

<u>Unit</u>	<u>Description</u>
Each	Multimode Phase Selector ( <del>with</del> Pole Mounted Antenna)

**PROPOSAL BID ITEMS**

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**Section: 0001 - PAVING**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	3,364.00	TON		\$	
0020	00214		CL3 ASPH BASE 1.00D PG64-22	1,322.00	TON		\$	
0030	02084		JPC PAVEMENT-8 IN (REVISED: 8-15-17)	3,333.00	SQYD		\$	
0040	02101		CEM CONC ENT PAVEMENT-8 IN	13,789.00	SQYD		\$	
0050	02677		ASPHALT PAVE MILLING & TEXTURING	8,958.00	TON		\$	
0060	22906ES403		CL3 ASPH SURF 0.38A PG64-22	11,201.00	TON		\$	

**Section: 0002 - ROADWAY**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0070	00071		CRUSHED AGGREGATE SIZE NO 57	2,354.00	TON		\$	
0080	01547		DROP BOX INLET TYPE 12 (FRAME AND GRATE ONLY)	20.00	LF		\$	
0090	01719		ADJUST INLET	2.00	EACH		\$	
0100	01792		ADJUST MANHOLE	109.00	EACH		\$	
0110	01811		STANDARD CURB AND GUTTER MOD	23,552.00	LF		\$	
0120	01876		STANDARD HEADER CURB MOD	15,783.00	LF		\$	
0130	01921		STANDARD BARRIER MEDIAN TYPE 4	2,662.00	SQYD		\$	
0140	02014		BARRICADE-TYPE III	20.00	EACH		\$	
0150	02015		CEMENT CONCRETE ISLAND	466.00	SQYD		\$	
0160	02200		ROADWAY EXCAVATION	10,956.00	CUYD		\$	
0170	02242		WATER	1,998.00	MGAL		\$	
0180	02545		CLEARING AND GRUBBING (APPROXIMATLEY 53.52 ACRES)	1.00	LS		\$	
0190	02562		TEMPORARY SIGNS	2,400.00	SQFT		\$	
0200	02611		HANDRAIL-TYPE A-1	52.00	LF		\$	
0210	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		\$	
0220	02653		LANE CLOSURE	12.00	EACH		\$	
0230	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		\$	
0240	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		\$	
0250	02701		TEMP SILT FENCE	5,273.00	LF		\$	
0260	02705		SILT TRAP TYPE C	278.00	EACH		\$	
0270	02708		CLEAN SILT TRAP TYPE C	834.00	EACH		\$	
0280	02720		SIDEWALK-4 IN CONCRETE	18,542.00	SQYD		\$	
0290	02726		STAKING	1.00	LS		\$	
0300	02775		ARROW PANEL	4.00	EACH		\$	
0310	04793		CONDUIT-1 1/4 IN	300.00	LF		\$	
0320	04795		CONDUIT-2 IN	125.00	LF		\$	
0330	04820		TRENCHING AND BACKFILLING	400.00	LF		\$	
0340	04829		PIEZOELECTRIC SENSOR	16.00	EACH		\$	
0350	04830		LOOP WIRE	7,100.00	LF		\$	
0360	04895		LOOP SAW SLOT AND FILL	1,800.00	LF		\$	
0370	05952		TEMP MULCH	52,740.00	SQYD		\$	
0380	05953		TEMP SEEDING AND PROTECTION	39,555.00	SQYD		\$	
0390	05990		SODDING	11,087.00	SQYD		\$	
0400	05997		TOPSOIL FURNISHED AND PLACED	3,902.00	CUYD		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0410	06510		PAVE STRIPING-TEMP PAINT-4 IN	100,000.00	LF		\$	
0420	06514		PAVE STRIPING-PERM PAINT-4 IN	16,755.00	LF		\$	
0430	06515		PAVE STRIPING-PERM PAINT-6 IN	47,807.00	LF		\$	
0440	06530		PAVE STRIPING REMOVAL-4 IN	60,000.00	LF		\$	
0450	06531		PAVE STRIPING REMOVAL-6 IN	100,000.00	LF		\$	
0460	06550		PAVE STRIPING-TEMP REM TAPE-W	5,000.00	LF		\$	
0470	06551		PAVE STRIPING-TEMP REM TAPE-Y	5,000.00	LF		\$	
0480	06565		PAVE MARKING-THERMO X-WALK-6 IN	10,150.00	LF		\$	
0490	06568		PAVE MARKING-THERMO STOP BAR-24IN (REVISED: 8-15-17)	1,562.00	LF		\$	
0500	06572		PAVE MARKING-DOTTED LANE EXTEN	195.00	LF		\$	
0510	06573		PAVE MARKING-THERMO STR ARROW	7.00	EACH		\$	
0520	06574		PAVE MARKING-THERMO CURV ARROW	143.00	EACH		\$	
0530	06575		PAVE MARKING-THERMO COMB ARROW	20.00	EACH		\$	
0540	06601NC		PAVE MARKING-PAINT WORDS	10.00	EACH		\$	
0550	10020NS		FUEL ADJUSTMENT	26,285.00	DOLL	\$1.00	\$	\$26,285.00
0560	10030NS		ASPHALT ADJUSTMENT	48,964.00	DOLL	\$1.00	\$	\$48,964.00
0570	20000ES724		TREE	6.00	EACH		\$	
0580	20000ES724		TREE (IN TREE GRATE)	30.00	EACH		\$	
0590	20000ES724		TREE (ORNAMENTAL)	7.00	EACH		\$	
0600	20001ES724		SHRUB (LARGE SHRUBS MORE THAN 3' TALL)	33.00	EACH		\$	
0610	20001ES724		SHRUB (SMALL SHRUBS LESS THAN 3' TALL)	993.00	EACH		\$	
0620	20094ES835		TEMP RELOCATION OF SIGNAL HEAD	375.00	EACH		\$	
0630	20359NN		GALVANIZED STEEL CABINET	3.00	EACH		\$	
0640	20360ES818		WOOD POST	6.00	EACH		\$	
0650	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	5.00	EACH		\$	
0660	21341ND		BOLLARDS	5.00	EACH		\$	
0665	22520EN		PAVE MARKING-THERMO YIELD BAR-36 IN (ADDED: 8-15-17)	42.00	LF		\$	
0670	22665EN		REMOVE NON-MOUNTABLE MEDIAN	642.00	SQYD		\$	
0680	23139EN		STRIPING REMOVAL	175,000.00	LF		\$	
0690	23158ES505		DETECTABLE WARNINGS	2,205.00	SQFT		\$	
0700	23214EC		BRICK-PAVERS FOR ROADWAY (VERGE)	150.00	SQYD		\$	
0710	23613EC		PERENNIALS	2,411.00	EACH		\$	
0720	24489EC		INLAID PAVEMENT MARKER	1,830.00	EACH		\$	
0730	24558ED		ORNAMENTAL GRASS	1,361.00	EACH		\$	
0740	24911ED		STRUCTURAL SOIL VAULT SYSTEM	120.00	SQYD		\$	
0750	24912ES724		GROUND COVER	1,462.00	EACH		\$	
0760	24917ED		SELECT BORROW MATERIAL	3,753.00	CUYD		\$	
0770	24918ES601		CONCRETE-CLASS A (VERGE & MEDIAN)	5,849.00	SQYD		\$	
0780	24935EC		CONCRETE PAINT (MEDIAN)	1,233.00	SQYD		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0790	00520		STORM SEWER PIPE-12 IN	1,975.00	LF		\$	
0800	00521		STORM SEWER PIPE-15 IN	559.00	LF		\$	
0810	00522		STORM SEWER PIPE-18 IN	12.00	LF		\$	
0820	00524		STORM SEWER PIPE-24 IN	4.00	LF		\$	
0830	00525		STORM SEWER PIPE-27 IN	8.00	LF		\$	
0840	00526		STORM SEWER PIPE-30 IN	11.00	LF		\$	
0850	00527		STORM SEWER PIPE-33 IN	8.00	LF		\$	
0860	00528		STORM SEWER PIPE-36 IN	12.00	LF		\$	
0870	00980		SLOTTED DRAIN PIPE-12 IN	1,429.00	LF		\$	
0880	01456		CURB BOX INLET TYPE A	105.00	EACH		\$	
0890	01459		CURB BOX INLET TYPE A MOD	45.00	EACH		\$	
0900	01480		CURB BOX INLET TYPE B	9.00	EACH		\$	
0910	01487		CURB BOX INLET TYPE F	8.00	EACH		\$	
0920	01544		DROP BOX INLET TYPE 11	3.00	EACH		\$	
0930	01545		DROP BOX INLET TYPE 11 MOD	1.00	EACH		\$	
0940	01634		CAP CURB BOX INLET	43.00	EACH		\$	
0950	01650		JUNCTION BOX	7.00	EACH		\$	
0960	08100		CONCRETE-CLASS A	36.10	CUYD		\$	
0970	20569ES710		DROP BOX INLET TY 13G(MOD)	3.00	EACH		\$	
0980	21546ED		CURB BOX INLET TYPE B MODIFIED	4.00	EACH		\$	
0990	23643EC		CURB BOX INLET TY F-MOD	8.00	EACH		\$	

**Section: 0004 - SIGNALIZATION**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1000	04723		BRACKET 10 FT	52.00	EACH		\$	
1010	04780		FUSED CONNECTOR KIT	104.00	EACH		\$	
1020	04792		CONDUIT-1 IN	534.00	LF		\$	
1030	04794		CONDUIT-1 1/2 IN	40.00	LF		\$	
1040	04795		CONDUIT-2 IN (REVISED: 8-15-17)	1,345.00	LF		\$	
1050	04811		ELECTRICAL JUNCTION BOX TYPE B (REVISED: 8-15-17)	57.00	EACH		\$	
1060	04820		TRENCHING AND BACKFILLING (REVISED: 8-15-17)	1,742.00	LF		\$	
1070	04830		LOOP WIRE (REVISED: 8-15-17)	25,525.00	LF		\$	
1080	04832		WIRE-NO. 12 (REVISED: 8-15-17)	22,449.00	LF		\$	
1090	04844		CABLE-NO. 14/5C	28,657.00	LF		\$	
1100	04845		CABLE-NO. 14/7C	1,650.00	LF		\$	
1110	04850		CABLE-NO. 14/1 PAIR	13,919.00	LF		\$	
1120	04885		MESSENGER-10800 LB	3,870.00	LF		\$	
1130	04895		LOOP SAW SLOT AND FILL (REVISED: 8-15-17)	9,799.00	LF		\$	
1140	04899		ELECTRICAL SERVICE	1.00	EACH		\$	
1150	04932		INSTALL STEEL STRAIN POLE	33.00	EACH		\$	
1160	04950		REMOVE SIGNAL EQUIPMENT	94.00	EACH		\$	
1170	06472		INSTALL SPAN MOUNTED SIGN (REVISED: 8-21-17)	38.00	EACH		\$	



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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1180	20093NS835		INSTALL PEDESTRIAN HEAD-LED (REVISED: 8-15-17)	84.00	EACH		\$	
1190	20188NS835		INSTALL LED SIGNAL-3 SECTION	116.00	EACH		\$	
1200	20188NS835		INSTALL LED SIGNAL-3 SECTION (TRANSIT)	11.00	EACH		\$	
1210	20189NS835		INSTALL LED SIGNAL-5 SECTION	11.00	EACH		\$	
1220	20266ES835		INSTALL LED SIGNAL- 4 SECTION	8.00	EACH		\$	
1230	21743NN		INSTALL PEDESTRIAN DETECTOR (REVISED: 8-15-17)	84.00	EACH		\$	
1235	22939ND		INSTALL LUMINAIRE POLE (ADDED: 8-15-17)	2.00	EACH		\$	
1240	23157EN		TRAFFIC SIGNAL POLE BASE	145.00	CUYD		\$	
1250	23206EC		INSTALL CONTROLLER CABINET (REVISED: 8-21-17)	6.00	EACH		\$	
1260	23222EC		INSTALL SIGNAL PEDESTAL (REVISED: 8-15-17)	26.00	EACH		\$	
1270	24589ED		LED LUMINAIRE	52.00	EACH		\$	
1280	24901EC		PVC CONDUIT-2 IN-SCHEDULE 80	1,881.00	LF		\$	
1290	24908EC		INSTALL SIGNAL CONTROLLER-TY ATC (W/ 1C ATC MODULE)	35.00	EACH		\$	
1300	24916ED		SYSTEM INTEGRATION	1.00	LS		\$	
1310	24919EC		MULTIMODE PHASE SELECTOR (WITH POLE MOUNTED ANTENNA) (REVISED: 8-21-17)	32.00	EACH		\$	
1320	24937EC		INSTALL EXTERNAL UPS SYSTEM CABINET	2.00	EACH		\$	
1325	24941EC		LED TRANSIT SIGNAL MODULE (ADDED: 8-15-17)	33.00	EACH		\$	

**Section: 0005 - INTELLIGENT TRANSPORTATION SYSTEMS**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1330	01642		JUNCTION BOX-18 IN	208.00	EACH		\$	
1340	01650		JUNCTION BOX	29.00	EACH		\$	
1350	04792		CONDUIT-1 IN	4,645.00	LF		\$	
1360	04795		CONDUIT-2 IN	7,392.00	LF		\$	
1370	04797		CONDUIT-3 IN (REVISED: 8-15-17)	3,711.00	LF		\$	
1380	04820		TRENCHING AND BACKFILLING	4,965.00	LF		\$	
1390	04888		MESSENGER-4500 LB	2,105.00	LF		\$	
1400	04899		ELECTRICAL SERVICE	36.00	EACH		\$	
1410	21077ED		FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 144 STRAND)	33,775.00	LF		\$	
1420	21077ED		FIBER OPTIC CABLE (AIRBLOWN/PUSHABLE, 48 STRAND)	756.00	LF		\$	
1430	21077ED		FIBER OPTIC CABLE (FIBER OPTIC DROP CABLE, 12 STRAND) (REVISED: 8-21-17)	17,590.00	LF		\$	
1440	21543EN		BORE AND JACK CONDUIT (REVISED: 8-15-17)	5,984.00	LF		\$	
1450	24543EC		CLEAN (EXISTING CONDUIT)	5,800.00	LF		\$	
1460	24921EC		CONDUIT RISER-2 IN	73.00	EACH		\$	
1470	24922EC		FIBER OPTIC SPLICE ENCLOSURE	42.00	EACH		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1480	24923EC		CABINET FIBER TERMINATION PANEL	37.00	EACH		\$	
1490	24924EC		AIR LINK COMMUNICATION	2.00	EACH		\$	
1500	24925EC		LAYER 2 ETHERNET SWITCH-FLD MOUNT-6 PORT	37.00	EACH		\$	
1510	24926EC		INTERIOR FIBER OPTIC PATCH PANEL	2.00	EACH		\$	
1520	24927EC		LAYER 2 ETHERNET SWITCH-RACK MOUNT	3.00	EACH		\$	
1530	24928EC		FIREWALL UNIT-RACK MOUNT	3.00	EACH		\$	
1540	24929EC		MICROTRENCHING	20,177.00	LF		\$	
1550	24930EC		MICRO-DUCT PATHWAY-2 CELL	17,108.00	LF		\$	
1560	24931EC		MICRO-DUCT PATHWAY-3 CELL	12,768.00	LF		\$	
1570	24932EC		CONDUIT REPAIR	100.00	LF		\$	
1580	24933EC		JUNCTION BOX REPAIRED	5.00	EACH		\$	

**Section: 0006 - WATERLINE**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1590	14021		W FIRE HYDRANT REMOVE	6.00	EACH		\$	
1600	14036		W PIPE DUCTILE IRON 06 INCH	12.00	LF		\$	
1610	14037		W PIPE DUCTILE IRON 08 INCH	15.00	LF		\$	
1620	14039		W PIPE DUCTILE IRON 12 INCH	1,522.00	LF		\$	
1630	14050		W PIPE DCTL IRON RSTRND JOINT 12 IN	1,350.00	LF		\$	
1640	14076		W REMOVE TRANSITE (AC) PIPE	100.00	LF		\$	
1650	14095		W TIE-IN 08 INCH	1.00	EACH		\$	
1660	14097		W TIE-IN 12 INCH	38.00	EACH		\$	
1670	14105		W VALVE 06 INCH	1.00	EACH		\$	
1680	14106		W VALVE 08 INCH	1.00	EACH		\$	
1690	14108		W VALVE 12 INCH	9.00	EACH		\$	
1700	14156		W METER REMOVE	5.00	EACH		\$	
1710	14510		W FIRE HYDRANT ASSEMBLY INST (REVISED: 8-15-17)	15.00	EACH		\$	
1720	14514		W METER 1 INCH INST	2.00	EACH		\$	
1730	14516		W METER 2 INCH INST	1.00	EACH		\$	
1740	14517		W METER 3/4 INCH INST	4.00	EACH		\$	
1750	14518		W METER VAULT INST	5.00	EACH		\$	
1760	14634		W SERV COPPER SHORT SIDE 3/4 IN INST (REVISED: 8-15-17)	17.00	EACH		\$	
1770	14631		W SERV COPPER SHORT SIDE 1 IN INST	8.00	EACH		\$	
1780	14632		W SERV COPPER SHORT SIDE 1-1/2 IN INST	2.00	EACH		\$	
1790	14633		W SERV COPPER SHORT SIDE 2 IN INST	1.00	EACH		\$	

**Section: 0007 - MISCELLANEOUS - BUS STATION**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1800	00001		DGA BASE	1,091.00	TON		\$	
1810	01810		STANDARD CURB AND GUTTER	401.00	LF		\$	
1820	01811		STANDARD CURB AND GUTTER MOD	43.00	LF		\$	
1830	01875		STANDARD HEADER CURB	1,951.00	LF		\$	
1840	01877		SPECIAL HEADER CURB	1,702.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1850	02101		CEM CONC ENT PAVEMENT-8 IN	139.00	SQYD		\$	
1860	02653		LANE CLOSURE	25.00	EACH		\$	
1870	02677		ASPHALT PAVE MILLING & TEXTURING	575.00	TON		\$	
1880	02720		SIDEWALK-4 IN CONCRETE	1,481.00	SQYD		\$	
1890	05990		SODDING	98.00	SQYD		\$	
1900	06407		SBM ALUM SHEET SIGNS .125 IN (REVISED: 8-21-17)	164.00	SQFT		\$	
1910	06514		PAVE STRIPING-PERM PAINT-4 IN	673.00	LF		\$	
1920	06515		PAVE STRIPING-PERM PAINT-6 IN	3,621.00	LF		\$	
1930	06568		PAVE MARKING-THERMO STOP BAR-24IN	40.00	LF		\$	
1940	06574		PAVE MARKING-THERMO CURV ARROW	3.00	EACH		\$	
1950	06601NC		PAVE MARKING-PAINT WORDS	8.00	EACH		\$	
1960	20000ES724		TREE	16.00	EACH		\$	
1970	20000ES724		TREE IN TREE GRATE	42.00	EACH		\$	
1980	20194ED		REMOVE & RESET TRAFFIC SIGN	10.00	EACH		\$	
1990	21373ND		REMOVE SIGN	3.00	EACH		\$	
2000	22415EN		CONCRETE-CLASS A FOR PAD (BUS PAD-10 IN)	1,457.00	SQYD		\$	
2010	22415EN		CONCRETE-CLASS A FOR PAD (BUS PAD-6 IN)	1,743.00	SQYD		\$	
2020	22415EN		CONCRETE-CLASS A FOR PAD (SHELTER PAD-4 IN)	1,104.00	SQYD		\$	
2030	22415EN		CONCRETE-CLASS A FOR PAD (SHELTER PAD-8 IN)	471.00	SQYD		\$	
2040	23158ES505		DETECTABLE WARNINGS	871.00	SQFT		\$	
2050	23214EC		BRICK-PAVERS FOR ROADWAY (VERGE)	232.00	SQYD		\$	
2060	23403EC		BUS SHELTER (TYPE 1)	5.00	EACH		\$	
2070	23403EC		BUS SHELTER (TYPE 2)	14.00	EACH		\$	
2080	23403EC		BUS SHELTER (TYPE 3)	12.00	EACH		\$	
2090	23404EC		BENCH	48.00	EACH		\$	
2100	23405EC		TRASH RECEPTACLE	37.00	EACH		\$	
2110	23613EC		PERENNIALS	157.00	EACH		\$	
2120	24558ED		ORNAMENTAL GRASS	39.00	EACH		\$	
2130	24605ED		RELOCATE (LIGHT POLE)	1.00	EACH		\$	
2140	24731EC		REMOVE AND RESET (MAILBOX)	2.00	EACH		\$	
2150	24731EC		REMOVE AND RESET (SPRINKLER HEAD)	1.00	EACH		\$	
2160	24894EC		REMOVE (BUS BENCH)	23.00	EACH		\$	
2170	24894EC		REMOVE (BUS SHELTER)	8.00	EACH		\$	
2180	24894EC		REMOVE (BUS TRASH CAN)	17.00	EACH		\$	
2190	24894EC		REMOVE (PARKING METER)	2.00	EACH		\$	
2200	24911ED		STRUCTURAL SOIL VAULT SYSTEM	218.00	SQYD		\$	
2210	24913ED		PYLON	36.00	EACH		\$	

### PROPOSAL BID ITEMS

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2220	24914ED		MODIFIED PYLON	1.00	EACH		\$	
2230	24918ES601		CONCRETE-CLASS A (VERGE & MEDIAN)	347.00	SQYD		\$	

#### Section: 0008 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2240	02568		MOBILIZATION	1.00	LS		\$	
2250	02569		DEMOBILIZATION	1.00	LS		\$	