ITEM 614, MAINTAINING TRAFFIC (I-71)

ALL WORK ALONG I-71, RED BANK EXPRESSWAY AND RAMPS NOT DETAILED TO BE DONE IN THE PHASING DESCRIBED BELOW SHALL ADHERE TO THE PERMITTED LANE CLOSURE TIMES AND UNAUTHORIZED LANE USE AND LANE VALUE CONTRACT TABLES ON SHEET 28 .

SEE SHEETS 127 - 133 FOR DETOURS FOR NOTED RAMP CLOSURES. SEE PART 2 FOR MAINTENANCE OF TRAFFIC PLANS FOR THE AUXILIARY LANE ADDITION AND RAMP CONSTRUCTION BETWEEN KENNEDY AVE AND RED BANK ROAD.

PART 2

PRIOR TO PHASES 1 THRU 4 BELOW, THE AUXILIARY LANE ALONG N.B. I-71 BETWEEN KENNEDY AVENUE/RIDGE ROAD AND THE OFF-RAMP TO RED BANK ROAD SHALL BE COMPLETE (EXCEPT THE PAVEMENT SURFACE COURSE) AND OPEN TO TRAFFIC. SEE PART 2 PLANS FOR MAINTENANCE OF TRAFFIC PHASING AND DETAILS.

PHASE 1A

UTILIZING S.C.D. MT-95.45, CONSTRUCT THE MEDIAN CROSSOVERS FOR USE IN PHASE 1 THRU 4 BY REMOVING THE CONCRETE BARRIER AND DITCH, REMOVING, ADDING AND ADJUSTING DRAINAGE, REMOVAL OF LIGHTING ETC. PLACE PAVEMENT FOR M.O.T. IN BOTH CROSSOVER LOCATIONS. PORTABLE BARRIER PER S.C.D. MT-95.45. SHALL REMAIN IN PLACE UNTIL SUCH TIME THAT THE CROSSOVERS ARE UTILIZED.

CONSTRUCT FULL DEPTH MEDIAN SHOULDER REPLACEMENT AND OUTSIDE SHOULDER REPLACEMENT ON THE NORTH BOUND LANES FOR USE IN PHASES 1&2. LANE AND RAMP CLOSURES ON I-71 SHALL BE PER THE PERMITTED LANE CLOSURE TIMES NOTE. CLOSE LEFT AND RIGHT LANES AS PER S.C.D. 95.30. USE SCD'S MT-98.10, MT-98.11, MT- 98.20 AND MT-98.22 AS APPROPRIATE FOR WORK NEAR RAMPS.

PHASE 1

SEE SHEETS 39 - 40 , 43 & 49 - 59 FOR PHASE DETAILS. SHIFT ONE LANE OF SOUTHBOUND I-71 IN A CONTRAFLOW ARRANGEMENT ON THE NORTHBOUND PAVEMENT. SHIFT THE REMAINING 2 LANES OF SOUTHBOUND I-71 TO THE INSIDE OF BRIDGE HAM-71-0970L AND BRIDGE HAM-71-1068L. ON BRIDGE HAM-71-0970L PERFORM HYDRO-DEMOLITION AND DECK OVERLAY ON THE OUTSIDE OF THE DECK. CLOSE RAMP A (RED BANK ROAD TO SB I-71) TO COMPLETE THE WORK ON THE OUTSIDE. ON BRIDGE HAM-71-1068L REMOVE AND REPLACE THE DECK ON THE OUTSIDE. PERFORM SUBSTRUCTURE REHABILITATION ON THE OUTSIDE. SHIFT THE REMAINING 2 LANES OF SOUTHBOUND I-71 TO THE MEDIAN IN THE PAVEMENT LOWERING AREA IN THE RED BANK ROAD INTERCHANGE AND CONSTRUCT THE OUTSIDE PORTION OF THE FULL DEPTH PAVEMENT REPLACEMENT. PERFORM FULL DEPTH JOINT REPAIRS ON THE SOUTHBOUND LANES ON THE CLOSED MEDIAN LANE, AND IN THE CENTER LANE USING LANE CLOSURES OR LANE SHIFTS.

PHASE 2

SEE SHEETS 41 - 43 & 60 - 68 FOR PHASE DETAILS. SEE SHEETS 58 - 59 FOR LEAD IN SIGNAGE DETAILS. MAINTAINING THE CONTRAFLOW ARRANGEMENT FROM PHASE 1. SHIFT THE REMAINING 2 LANES OF SOUTHBOUND I-71 TO THE PORTIONS OF BRIDGE HAM-71-0970L AND BRIDGE HAM-71-1068L CONSTRUCTED IN PHASE 1. ON BRIDGE HAM-71-0970L PERFORM HYDRO-DEMOLITION AND DECK OVERLAY ON THE INSIDE (MEDIAN) OF THE DECK. ON BRIDGE HAM-71-1068L REMOVE AND REPLACE THE DECK ON THE INSIDE (MEDIAN). PERFORM SUBSTRUCTURE REHABILITATION ON THE INSIDE.

IN THE LOWERING AREA IN THE RED BANK ROAD INTERCHANGE SHIFT 2 LANES OF SOUTHBOUND I-71 TO THE FULL DEPTH PAVEMENT CONSTRUCTED IN PHASE 1 AND CONSTRUCT INSIDE (MEDIAN) PORTION OF THE FULL DEPTH PAVEMENT REPLACEMENT.

CONTINUE FULL DEPTH JOINT REPAIRS ON THE SOUTHBOUND LANES ON THE OUTSIDE LANES, AND IN THE CENTER LANE USING LANE CLOSURES OR SHIFTS. CONSTRUCT FULL DEPTH MEDIAN SHOULDER REPLACEMENT AND OUTSIDE SHOULDER REPLACEMENT ON THE SOUTHBOUND LANES FOR USE IN PHASES 3&4.

PHASE 3

SEE SHEETS 44 - 45 , 48 & 69 - 79 FOR PHASE DETAILS. SHIFT THE ADD LEFT LANE FROM SR 562 TO NORTH BOUND I-71 IN A CONTRA-FLOW ARRANGEMENT ON THE SOUTHBOUND PAVEMENT. TRAFFIC ON THE NORTHBOUND THRU LANES SOUTH OF THE INTERCHANGE WILL NOT BE ALLOWED ACCESS TO THE CONTRAFLOW LANE. SHIFT THE REMAINING 2 LANES OF NORTHBOUND I-71 TO THE INSIDE OF BRIDGE HAM-71-0970R AND THE OUTSIDE OF BRIDGE HAM-71-1068R. CLOSE RAMP B (NB I-71 TO RED BANK ROAD). ON BRIDGE HAM-71-0970R PERFORM HYDRO-DEMOLITION AND DECK OVERLAY ON THE OUTSIDE OF THE DECK. ON BRIDGE HAM-71-1068L REMOVE AND REPLACE THE DECK ON THE INSIDE (MEDIAN). PERFORM SUBSTRUCTURE REHABILITATION ON THE INSIDE. PERFORM FULL DEPTH JOINT REPAIRS ON THE NORTHBOUND LANES ON THE CLOSED MEDIAN LANE, AND IN THE CENTER LANE USING LANE CLOSURES OR LANE SHIFTS.

PHASE 4

SEE SHEETS 46 - 48 , & 80 - 88 FOR PHASE DETAILS, SEE SHEETS 78 - 79 FOR LEAD IN SIGNAGE DETAILS. MAINTAINING THE CONTRAFLOW ARRANGEMENT FROM PHASE 3. SHIFT THE REMAINING 2 LANES OF SOUTHBOUND I-71 TO THE PORTIONS OF BRIDGE HAM-71-0970R AND BRIDGE HAM-71-1068R CONSTRUCTED DURING PHASE 3. CLOSE RAMP F (NB I-71 TO STEWART ROAD). ON BRIDGE HAM-71-0970R PERFORM HYDRO-DEMOLITION AND DECK OVERLAY ON THE INSIDE (MEDIAN) OF THE DECK. ON BRIDGE HAM-71-1068R REMOVE AND REPLACE THE DECK ON THE OUTSIDE. PERFORM SUBSTRUCTURE REHABILITATION ON THE OUTSIDE. CONTINUE FULL DEPTH JOINT REPAIRS ON THE NORTHBOUND LANES ON THE OUTSIDE LANES, AND IN THE CENTER LANE USING LANE CLOSURES OR SHIFTS.

PHASE 5

RE-CONSTRUCT WHAT WAS REMOVED FOR THE MEDIAN CROSSOVERS; (MEDIAN CONCRETE BARRIER, DRAINAGE INLETS, ETC.) RECONSTRUCT SHOULDER WHERE MODIFIED CROSS SLOPE WAS UTILIZED. PLACE PORTABLE BARRIER ALONG THE MEDIAN EDGE LINE PER S.C.D. MT-95.45 THAT SHALL REMAIN IN PLACE UNTIL SUCH TIME MEDIAN BARRIER IS REBUILT. LANE CLOSURES ON I-71 SHALL BE PER THE PERMITTED LANE CLOSURE NOTE AND PERTINENT S.C.D.'S

SINGLE AND DOUBLE LANE CLOSURES AT THE SR 562 AND SR 126 INTERCHANGES.

WHEN WORK REQUIRES SHORT TERM SINGLE AND DOUBLE LANE CLOSURES PER THE LVCT THAT IMPACT THE SR 562 AND SR 126 INTERCHANGES AT THE PROJECT LIMITS, THE CONTRACTOR SHALL USE THE LANE CLOSURE DETAILS ON SHEETS 89 - 110 . LANE CLOSURE SETUPS NOT DETAILED ON THESE SHEETS SHALL FOLLOW THE PERTINENT SCDs.

HAM-71-0991; RAMP C (S.B. I-71 TO S.B. RED BANK ROAD)

CLOSE RAMP C PER LVCT FOR 2 SEPARATE WEEKENDS TO PERFORM THE BRIDGE DECK OVERLAY ON HAM-71-0991, JOINT REPAIRS AND PAVEMENT OVERLAY ON THE RAMP. SEE SHEETS 129 - 130 FOR DETOUR. SEE SHEET 131 FOR AUXILARY LANE CLOSURE DETAILS.

HAM-71-0992; RAMP A (N.B. RED BANK ROAD TO I-71 S.B.)

CLOSE RAMP A PER LVCT TO PERFORM THE BRIDGE DECK OVERLAY ON HAM-71-0992, JOINT REPAIRS AND PAVEMENT OVERLAY ON THE RAMP AND COMPLETE THE OUTSIDE OF HAM-71-0970L WITHIN THE SAME CLOSURE PERIOD. SEE SHEET 127 FOR DETOUR. SEE SHEET 114 FOR MODIFICATIONS AND PHASE DETAILS ON STEWART ROAD TO BE UTILIZED DURING THE DETOUR PERIOD.

RAMP B (N.B. I-71 TO S.B. RED BANK ROAD)

CLOSE RAMP B PER LVCT TO COMPLETE THE OUTSIDE OF HAM-71-0970R AND TO PERFORM JOINT REPAIRS AND PAVEMENT OVERLAY ON THE RAMP WITHIN THE SAME CLOSURE PERIOD. SEE SHEET 128 FOR DETOUR. SEE SHEET 114 FOR MODIFICATIONS AND PHASE DETAILS ON STEWART ROAD TO BE UTILIZED DURING THE DETOUR PERIOD.

RAMP F (N.B. I-71 TO STEWART ROAD)

CLOSE RAMP F PER LVCT TO COMPLETE THE OUTSIDE OF BRIDGE HAM-71-1068R AND TO PERFORM PAVEMENT OVERLAY ON THE RAMP WITHIN THE SAME CLOSURE PERIOD. SEE SHEETS 132 - 133 FOR DETOUR.

BRIDGE HAM-71-0875 (KENNEDY AVENUE)

MAINTAIN 1 LANE IN EACH DIRECTION PER THE LVCT, EXCEPT THE RIGHT LANE CAN BE CLOSED WITH PORTABLE BARRIER TO REPAIR BACK WALL AS SHOWN ON SHEET 111

HAM-71-0970 L/R (OVER RED BANK ROAD)

BRIDGE PAINTING IN PHASES 2 & 3 WILL REQUIRE MAINTAINING TWO-WAY TRAFFIC IN A SINGLE LANE USING A TEMPORARY SIGNAL (SEE PHASE DETAILS ON SHEETS 112 - 113). THE DURATION OF PHASES 2 & 3 SHALL BE 45 CALENDAR DAYS TOTAL. FLAGGING IS PERMITTED FROM 9AM TO 3PM FOR PHASES 1 & 4 .

HAM-71-1068 L/R (OVER STEWART ROAD)

MAINTAIN 1 LANE IN EACH DIRECTION FOR BRIDGE PAINTING AND OVERHEAD WORK PER PHASE DETAILS ON SHEETS 115 - 116 . 15 MINUTE SHORT DURATION COMPLETE CLOSURES ON STEWART ROAD ARE PERMITTED FROM 10PM TO 5AM DURING DECK REMOVAL.

HAM-71-1149 (EUCLID ROAD)

MAINTAIN TRAFFIC USING FLAGGERS BETWEEN 9AM-3PM.

HAM-71-1181 (KENWOOD ROAD)

PER THE TIMES PERMITTED IN THE LVCT, SETUP LANE CLOSURES PER SHEETS 117 - 126 FOR PHASE DETAILS. MAINTAIN A MINIMUM OF ONE OPEN SIDEWALK AT ALL TIMES, AND DETOUR PEDESTRIANS FROM THE CLOSED SIDEWALK AS SHOWN ON THE PHASE DETAILS.

HAM-71-1277 (GALBRAITH ROAD)

MAINTAIN PEDESTRIAN TRAFFIC AT ALL TIMES AND MAINTAIN 1 LANE OF VEHICULAR TRAFFIC IN EACH DIRECTION DURING NON WORKING TIMES. MAINTAIN 2-WAY TRAFFIC IN ONE LANE USING FLAGGERS AS PER THE LVCT.

ITEM 614, MAINTAINING TRAFFIC (NOTICE OF CLOSURE SIGN)

NOTICE OF CLOSURE SIGNS (W20-H13),SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. [AT THE APPROVAL OF THE ENGINEER, PORTABLE CHANGABLE MESSAGE SIGNS MAY BE USED IN LIEU OF THE STANDARD FLATSHEET SIGN FOR CLOSURE DURATIONS OF LESS THAN 1 WEEK.

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTICE OF CLOSURE SIGN TIME TABLE

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
RAMP & ROAD	>=2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES < 12 HOURS		2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRIC RATHER THAN THE GENERAL SWITCHBOARD NUMBER.

LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS (I-71 & RAMPS)

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING
EASTER	

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY
THURSDAY (THANKSGIVING ONLY)	6:00 AM WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF $125 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

CALCULATED DPF CHECKED BJF

MAINTENANCE OF TRAFFIC GENERAL NOTES

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MN400.dgn Sheet 3/2/2018 1:2:09 PM dan-f

PERMITTED LANE CLOSURE TIMES AND UNAUTHORIZED LANE USE TABLE

LOCATION	NO. OF EXISTING THRU LANES PER DIRECTION	1 LANE CLOSED		2 LANES CLOSED		15 MINUTE SHORT DURATION COMPLETE CLOSURES	COMPLETE CLOSURE	TIME UNIT	DISINCENTIVE PER LANE PER TIME UNIT
		WEEKDAY	WEEKEND	WEEKDAY	WEEKEND	ANY DAY	ANY DAY		
I-71	3	8 PM - 6 AM	7 PM - 7 AM	11 PM - 5 AM	10 PM - 6 AM	12 M - 4 AM	NONE	15 MINUTES	$1,875
ALL RAMPS	VAR.	9 PM - 6 AM	7 PM - 6 AM	NONE	NONE	12 M - 4 AM	10 PM - 5 AM	15 MINUTES	$1,200
KENNEDY AVE	2	9 AM - 3 PM & 8 PM - 6 AM	7 AM - 4 PM	NONE	NONE	NONE	NONE	15 MINUTES	$750
OLD RED BANK RD	1	9 AM - 3 PM	7 AM - 7 PM	NONE	NONE	NONE	NONE	15 MINUTES	$750
EUCLID RD	1	7 AM - 7 PM	7 AM - 7 PM	NONE	NONE	NONE	NONE	15 MINUTES	$750
KENWOOD AVE	2	9 AM - 3 PM AND 7 PM - 6 AM	9 AM - 3 PM AND 7 PM - 6 AM	NONE	NONE	NONE	NONE	15 MINUTES	$750
GALBRAITH RD	1	9 AM - 3 PM AND 7 PM - 7 AM (1 LANE IN EACH DIR.)	9 AM - 3 PM AND 7 PM - 7 AM (1 LANE IN EACH DIR.)	8PM - 6 AM (1-LANE, 2-WAY TRAFFIC)	8PM - 7 AM (1-LANE, 2-WAY TRAFFIC)	NONE	NONE	15 MINUTES	$750
STEWART RD	2	AT ALL TIMES	AT ALL TIMES	NONE	NONE	10 PM - 5 AM	NONE	15 MINUTES	$750

NOTES

1) NO SHORT-TERM INTERSTATE SHOULDER CLOSURES BETWEEN THE HOURS OF 6 AM TO 9 AM AND 3 PM TO 7 PM, MONDAY THROUGH FRIDAY.
2) NO CLOSURES 2 HOURS BEFORE TO 2 HOURS AFTER EVENTS AT GREAT AMERICAN BALL PARK, PAUL BROWN STADIUM, OR US BANK ARENA. THIS RESTRICTION ALSO APPLIES TO ANY OTHER LOCAL VENUE GENERATING AN EVENT ATTENDANCE OF 20,000+.
3) RAMP J/I-71 LANE CLOSURES: SHORT TERM LANE CLOSURES WITH RAMP J AS AN ADD LANE, SHEETS 99-96, IS CONSIDERED 1 LANE CLOSED. SHORT TERM LANE CLOSURES WITH RAMP J AS A MERGE, SHEETS 100-101, IS CONSIDERED 2 LANES CLOSED.
4) SHORT TERM PARTIAL-WIDTH RAMP CLOSURE, MAINTAINING 1-11' LANE, IS PERMITTED DURING THE TIMES FOR 1 LANE CLOSED. MAINTAIN THE EXISTING DECISION SIGHT DISTANCE ON MERGE RAMPS.
5) A MAXIMUM OF 1 RAMP MAY BE CLOSED AT ANY TIME.

LANE VALUE CONTRACT TABLE

DESCRIPTION OF CRITICAL LANE/RAMP TO BE MAINTAINED	RESTRICTED TIME PERIOD	TIME UNIT	DISINCENTIVE PER TIME UNIT
RAMP A - RED BANK TO I-71 SB	30 DAYS	1 DAY	$2,500
RAMP B - I-71 NB TO RED BANK	30 DAYS	1 DAY	$2,500
RAMP C - I-71 SB TO RED BANK	MONDAY 6 AM TO FRIDAY 9 PM	15 MINUTES	$1,200
RAMP F - I-71 NB TO STEWART	45 DAYS	1 DAY	$2,500

NOTES

1) RAMP C IS PERMITTED TO BE CLOSED A MAXIMUM OF 2 WEEKENDS. A WEEKEND CLOSURE IS DEFINED AS BEGINNING AT 9 PM ON FRIDAY AND ENDING AT 6 AM ON MONDAY.

WORK ZONE MARKINGS

THE CONTRACTOR SHALL PLACE THE ASPHALT INTERMEDIATE COURSE AND ALL WORK ZONE PAVEMENT MARKINGS, INCLUDING WORK ZONE EDGE LINE, UPON COMPLETION OF THE PAVEMENT PLANING PRIOR TO OPENING THE ROADWAY TO TRAFFIC. THE CONTRACTOR SHALL PLACE ALL WORK ZONE PAVEMENT MARKINGS OR PERMANENT MARKINGS UPON COMPLETION OF THE ASPHALT SURFACE COURSE PRIOR TO OPENING THE ROADWAY TO TRAFFIC.

PERMITTED LANE CLOSURE TIMES

SHORT TERM LANE CLOSURES ARE THOSE WHICH ARE PERMITTED BY THE PERMITTED LANE CLOSURE NOTE. THESE TIMES SHALL NOT BE REVISED WITHOUT PRIOR APPROVAL FROM THE DISTRICT 8 WORK ZONE TRAFFIC CONTROL MANAGER. SHORT TERM LANE CLOSURES SHALL ONLY BE IMPLEMENTED WHEN WORK IS BEING CONTINUOUSLY PERFORMED IN THE LANE. THE CLOSURE SHALL BE REMOVED AS SOON AS POSSIBLE AFTER WORK HAS STOPPED. PERMITTED LANE CLOSURES SHALL ONLY BE ALLOWED DURING THE TIMES SPECIFIED IN THE LANE VALUE CONTRACT TABLE AND THE MAINTAINING TRAFFIC (CITY STREETS) NOTE INCLUDED IN THESE PLANS. NO LANE OR SHOULDER CLOSURE SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.

LANE CLOSURE/REDUCTION REQUIRED

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

ITEM 614, REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

AN ESTIMATED QUANTITY OF 100 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

DRUM REQUIREMENTS

IN ADDITION TO THE REQUIREMENTS OF THE PLANS, SPECIFICATION AND PROPOSAL, DRUMS FURNISHED BY THE CONTRACTOR SHALL BE NEW AND UNUSED AT THE TIME OF ARRIVAL ON THE PROJECT. ANY DRUMS BROUGHT ON THE PROJECT, WHICH HAVE PREVIOUSLY BEEN USED ELSEWHERE, WILL NOT BE ACCEPTED.

PAYMENT FOR DRUMS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

ADVANCE WARNING SIGNS

THE ROAD WORK NEXT XX MILES (G20-1) SIGN AND END ROAD WORK (G20-2) SIGN SHALL BE INSTALLED AT THE PROJECT LIMITS IN ADVANCE OF THE TTC ZONE. THE DISTANCE DISPLAYED ON THE ROAD WORK NEXT XX MILES SIGN SHALL BE STATED TO THE NEAREST WHOLE MILE.

ITEM 614, REPLACEMENT SIGN

FLATSHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED, BUT GOOD, CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 10 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ROAD CLOSED SIGN

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

RAMP A: @ RAMP GORE AT SPLIT WITH RAMP D TO NB I-71
RAMP B: ON RAMP DECELERATION LANE PRIOR TO BRIDGE
RAMP C: @ RAMP GORE AT I-71 SB
RAMP F: ON RAMP DECELERATION LANE PRIOR TO BRIDGE

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

TEMPORARY PAVEMENT WEDGE

TEMPORARY PAVEMENT WEDGES SHALL BE PROVIDED AT ALL TIMES WHERE TRAFFIC IS REQUIRED TO TRAVEL FROM OR ONTO A PAVEMENT SURFACE OF A DIFFERENT ELEVATION. THE MINIMUM SLOPE OF THE TEMPORARY PAVEMENT WEDGE SHALL BE 3:1 ALONG LONGITUDINAL JOINTS AND 120:1 AT TRANSVERSE JOINTS. THESE WEDGES SHALL BE REMOVED PRIOR TO PLACING THE SPECIFIED PAVEMENT COURSE. PAYMENT FOR ALL WORK, MATERIALS, ETC. ASSOCIATED WITH THIS ITEM SHALL BE PAID FOR UNDER ITEM 614 MAINTAINING TRAFFIC LUMP SUM.

SHORT DURATION CLOSING OF THE HIGHWAY

THE FOLLOWING NOTES SHALL APPLY TO ALL WORK ON I-71 AND STEWART ROAD.

1. FIVE CALENDAR DAYS PRIOR TO IMPLEMENTING THE SHORT DURATION CLOSING OF THE HIGHWAY THE CONTRACTOR SHALL PLACE A PORTABLE CHANGEABLE MESSAGE SIGN AT THE STRUCTURE IN THE DIRECTION THE ROAD IS TO BE CLOSED WITH THE MESSAGE:

(I-71 or STEWART)	12 AM
CLOSES	TO
DATE	4 AM

2. CLOSURES WILL ONLY BE PERMITTED FOR REMOVAL AND ERECTION OF THE STRUCTURAL BEAMS AND SIGN TRUSSES, TO PROTECT TRAFFIC DURING DEMOLITION OPERATIONS AS CALLED FOR IN C&MS 501.05, FOR OVERHEAD UTILITY WIRE CROSSING, AND FOR TRAFFIC SWITCHES. CLOSURES WILL BE PERMITTED DURING THE HOURS SPECIFIED IN THE PERMITTED LANE CLOSURE AND UNAUTHORIZED LANE USE TABLE, ON SHEET __. THE MAXIMUM DURATION OF THE CLOSURE SHALL NOT EXCEED 15 MINUTES SUBJECT TO A DISINCENTIVE IN THE AMOUNT SPECIFIED IN THE PERMITTED LANE CLOSURE AND UNAUTHORIZED LANE USE TABLE, ON SHEET __. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, ONLY ONE (1) BEAM SHALL BE REMOVED OR SET PER CLOSING. TRAFFIC SHALL BE COMPLETELY CLEARED BEFORE THE NEXT CLOSING.

3. THE CONTRACTOR SHALL IMPLEMENT THE TRAFFIC CONTROL CONTAINED IN STANDARD CONSTRUCTION DRAWING MT-99.60. IN THE EVENT THE CLOSURE OCCURS IN CLOSE PROXIMITY TO SYSTEM-SYSTEM INTERCHANGE, TRAFFIC CONTROL SHALL EXTEND ONTO ANY ENTERING DIVIDED HIGHWAY ACCORDING TO THE LIMITS PROVIDED IN MT-99.60.

4. THE CONTRACTOR SHALL FURNISH AND INSTALL TWO (2) WATCH FOR STOPPED TRAFFIC SIGNS (W3-H7-48) 1500 FEET UPSTREAM FROM THE ANTICIPATED BACKUP ON I-71. THE CONTRACTOR SHALL INSTALL ADDITIONAL WATCH FOR STOPPED TRAFFIC SIGNS EVERY 2000 FEET UPSTREAM FROM THE WATCH FOR STOPPED TRAFFIC SIGNS ON I-71 IF TRAFFIC BACKUPS REACH THE FIRST SET OF SIGNS. THE NEED FOR THESE SIGNS SHALL BE CONSTANTLY MONITORED BY THE CONTRACTOR. ALL WATCH FOR STOPPED TRAFFIC AND PREPARE TO STOP SIGNS SHALL BE EQUIPPED WITH TYPE B WARNING LIGHTS.

5. IN THE EVENT OF AN INCLEMENT WEATHER FORECAST (RAIN OR SNOW FORECAST AT 50% OR GREATER THE DAY THE EVENT WILL OCCUR IS DEFINED AS AN INCLEMENT FORECAST) THE CLOSURE SHALL NOT TAKE PLACE. THE CONTRACTOR WILL MAKE THE DETERMINATION BASED UPON THE WEATHER FORECAST PREDICTED BY THE NATIONAL WEATHER SERVICE.

6. ALTHOUGH THE PLANS CONTAIN BID ITEMS FOR LEOS AND PCMS, THEIR USE FOR THE SHORT DURATION CLOSING OF THE HIGHWAY, INCLUDING LEOS DESCRIBED IN MT-99.60 NOTE 5, IS CONSIDERED INCIDENTAL TO ITEM 614 MAINTAINING TRAFFIC IN ORDER TO LIMIT THE FREQUENCY OF CLOSURES TO THE MINIMUM NEEDED TO PERFORM THE WORK.

CALCULATED DPF CHECKED BJF

MAINTENANCE OF TRAFFIC GENERAL NOTES

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MN401.dgn Sheet 3/1/2018 9:33:28 AM dan-f

SHEET NUM.	PART. 01/IMS/PV	PART. 02/IMS/BR	PART. 03/	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
								STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068L)	
		LS		201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	339
		LS		202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
		296		202	22900	296	SY	APPROACH SLAB REMOVED	
		12		202	98100	12	EACH	REMOVAL MISC.: SCUPPER AND DOWNSPOUT REMOVAL (EACH)	369
		LS		503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
		83		503	21100	83	CY	UNCLASSIFIED EXCAVATION	
		154,359		509	10000	154,359	LB	EPOXY COATED REINFORCING STEEL 2 3	
		306		510	10001	306	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	339
		467		511	34447	467	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	343
		128		511	34449	128	CY	CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN	343
		71		511	44110	71	CY	CLASS QC1 CONCRETE, ABUTMENT NOT INCLUDING FOOTING	
		LS		511	81200	LS		CONCRETE, MISC.: SURVEYING EXISTING BRIDGE	410
		1,553		512	10100	1,553	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
		120		SPECIAL	51271500	120	SY	URETHANE TOP COAT SEALER	341
		1,553		512	74000	1,553	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
		4,053		513	20000	4,053	EACH	WELDED STUD SHEAR CONNECTORS	
		250		513	95030	250	EACH	STRUCTURAL STEEL, MISC.: WELDING CROSSFRAME STIFFENERS	392
		80		513	95030	80	EACH	STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT	339
		160		513	95030	160	EACH	STRUCTURAL STEEL, MISC.: PENCIL ABRASIVE BLASTING, GRINDING, AND NDT	340
		6		513	95030	6	EACH	STRUCTURAL STEEL, MISC.: INTERMEDIATE CROSSFRAME	392
		3		513	95030	3	EACH	STRUCTURAL STEEL, MISC.: REMOVE EXISTING INTERMEDIATE CROSSFRAME	390
		2		513	95030	2	EACH	STRUCTURAL STEEL, MISC.: FIELD WELD CRACK REPAIR	390A
		1		513	95030	1	EACH	STRUCTURAL STEEL, MISC.: BEARING STIFFENER REPAIR	390A
		413		514	20001	413	SF	FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN 1	340
		146		516	11210	146	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL	
		140		516	14020	140	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
		7		516	44201	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 11 1/2"x1'-2"x3.22"	340
		7		516	44401	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 11 1/2"x1'-1"x5.04"	340
		LS		516	47000	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE	
		LS		518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
		1,647		SPECIAL	51900100	1,647	SF	COMPOSITE FIBER WRAP SYSTEM	
		12		519	11101	12	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340
		296		526	25001	296	SY	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN	343
		141		526	90010	141	FT	TYPE A INSTALLATION	
		40		SPECIAL	53000500	40	HOUR	STRUCTURES: STRUCTURE INSPECTION AND MECHANIZED ACCESS 1	340
		502		607	39900	502	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC	
		502		607		502	FT	TEMPORARY FENCE 1	
								STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068L) ALT. BID 1	
		482		514	00050	482	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
		482		514	00056	482	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
		482		514	00060	482	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
		482		514	00066	482	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
		1		514	00504	1	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
		1		514	10000	1	EACH	FINAL INSPECTION REPAIR	
								STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068L) ALT. BID 2 4	
		24,625		514	00050	24,625	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
		24,625		514	00056	24,625	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
		24,625		514	00060	24,625	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
		24,625		514	00066	24,625	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
		50		514	00504	50	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
		18		514	10000	18	EACH	FINAL INSPECTION REPAIR	

CALCULATED JLG
CHECKED KSC

1 - REVISED 03/02/2018
2 - REVISED 02/26/2018
3 - REVISED 02/21/2018
4 - REVISED 01/23/2018

GENERAL SUMMARY

HAM-IR71-8.42

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GG009.dgn Sheet 3/2/2018 2:33:47 PM chen

SHEET NUM.	PART. 01/IMS/PV	PART. 02/IMS/BR	PART. 03/	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
								STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068R)	
		LS		201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	339
		LS		202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
		454		202	22900	454	SY	APPROACH SLAB REMOVED	
		LS		202	98000	LS		REMOVAL MISC.: SIGN TRUSS SUPPORT BRACKETS	389
		20		202	98100	20	EACH	REMOVAL MISC.: SCUPPER AND DOWNSPOUT REMOVAL (EACH)	368
		LS		503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
		126		503	21100	126	CY	UNCLASSIFIED EXCAVATION	
		235,915		509	10000	235,915	LB	EPOXY COATED REINFORCING STEEL 2 4	
		294		510	10001	294	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	339
		763		511	34447	763	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	343
		140		511	34449	140	CY	CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN	343
		105		511	44110	105	CY	CLASS QC1 CONCRETE, ABUTMENT NOT INCLUDING FOOTING	
		LS		511	81200	LS		CONCRETE, MISC.: SURVEYING EXISTING BRIDGE	409
		1,875		512	10100	1,875	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
		105		SPECIAL	51271500	105	SY	URETHANE TOP COAT SEALER	341
		1,875		512	74000	1,875	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
		6,867		513	20000	6,867	EACH	WELDED STUD SHEAR CONNECTORS	
		466		513	95030	466	EACH	STRUCTURAL STEEL, MISC.: WELDING CROSSFRAME STIFFENERS	392
		10		513	95030	10	EACH	STRUCTURAL STEEL, MISC.: INTERMEDIATE CROSSFRAME	392
		621		514	20001	621	SF	FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN	340
		219		516	11210	219	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL	
		213		516	14020	213	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
		11		516	44201	11	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	340
								AS PER PLAN, 1'-0"x1'-2"x3.25"	
		11		516	44201	11	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	340
								AS PER PLAN, 11 1/2"x1'-2"x3.22"	
		LS		516	47000	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE	
		LS		518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
		1,997		SPECIAL	51900100	1,997	SF	COMPOSITE FIBER WRAP SYSTEM	341
		64		519	11101	64	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340
		454		526	25001	454	SY	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN	343
		215		526	90010	215	FT	TYPE A INSTALLATION	
		~~556~~		~~607~~	~~39900~~	~~556~~	~~FT~~	~~VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC~~	
		556		607		556	FT	TEMPORARY FENCE 1	
								STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068R) ALT. BID 1	
		450		514	00050	450	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
		450		514	00056	450	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
		450		514	00060	450	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
		450		514	00066	450	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
		1		514	00504	1	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
		1		514	10000	1	EACH	FINAL INSPECTION REPAIR	
								STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068R) ALT. BID 2	
		41,195		514	00050	41,195	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
		41,195		514	00056	41,195	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
		41,195		514	00060	41,195	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
		41,195		514	00066	41,195	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
		200		514	00504	200	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
		31		514	10000	31	EACH	FINAL INSPECTION REPAIR	

CALCULATED JLG CHECKED KSC

GENERAL SUMMARY

HAM-IR71-8.42

164
441

△5 - REVISED 03/02/2018
△4 - REVISED 02/26/2018
△3 - REVISED 02/23/2018
△2 - REVISED 02/21/2018
△1 - REVISED 01/29/2018

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GG010.dgn Sheet 3/2/2018 2:32:11 PM chen

SHEET NUM.											PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
											01/IMS/PV	02/IMS/BR	03/						
																		STRUCTURE OVER 20 FOOT SPAN (HAM-71-1149)	
											LS		202	11203	LS			PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	
											1,226		512	10100	1,226	SY		SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
											1,136		512	10300	1,136	SY		SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	
											1,226		512	74000	1,226	SY		REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
											34,950		514	00050	34,950	SF		SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
											34,950		514	00056	34,950	SF		FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
											34,950		514	00060	34,950	SF		FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
											34,950		514	00066	34,950	SF		FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
											24		514	00504	24	MNHR		GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
											10		514	10000	10	EACH		FINAL INSPECTION REPAIR	
											LS		518	63300	LS			STRUCTURE DRAINAGE, MISC.: SCUPPER AND DRAINAGE PIPE CLEAN OUT	
											20		519	11101	20	SF		PATCHING CONCRETE STRUCTURE, AS PER PLAN	
											1		519	12300	1	SY		PATCHING CONCRETE BRIDGE DECK - TYPE B	
											1		601	26000	1	CY		DUMPED ROCK FILL, TYPE B	

CALCULATED JLG
CHECKED KSC

GENERAL SUMMARY

HAM-IR71-8.42

1 - NEW SHEET

164A
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GG010A.dgn Sheet 3/2/2018 2:18:21 PM chen

SHEET NUM.	PART. 01/IMS/PV	PART. 02/IMS/BR	PART. 03/	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
		~~568~~		~~607~~	~~39930~~	~~568~~	~~FT~~	~~VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC~~	
		568		607		568	FT	TEMPORARY FENCE	
		10		~~621~~	~~54000~~	~~10~~	~~EACH~~	~~RAISED PAVEMENT MARKER REMOVED~~ 1	
		10		621	00100	10	EACH	RPM	
								STRUCTURE OVER 20 FOOT SPAN (HAM-71-1181L)	
		LS		201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	339
		LS		202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
		~~LS~~		~~202~~	~~98000~~	~~LS~~		~~REMOVAL MISC.:EXPANSION JOINT REMOVAL~~	433
		3		257	10000	3	SY	DIAMOND GRINDING PORTLAND CEMENT CONCRETE PAVEMENT 2	
		~~975~~		~~512~~	~~10100~~	~~975~~	~~SY~~	~~SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)~~	
		1,289		512	10400	1,289	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
		10		SPECIAL	51271500	10	SY	URETHANE TOP COAT SEALER	341
		975		512	74000	975	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
		15,640		514	00050	15,640	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
		15,640		514	00056	15,640	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
		15,640		514	00060	15,640	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
		15,640		514	00066	15,640	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
		23		514	00504	23	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
		9		514	10000	9	EACH	FINAL INSPECTION REPAIR	
		126		516	10011	126	FT	ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN	433
		94		SPECIAL	51900100	94	SF	COMPOSITE FIBER WRAP SYSTEM	341
		153		519	11101	153	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340
	3								
								STRUCTURE OVER 20 FOOT SPAN (HAM-71-1181R)	
		LS		201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	339
		LS		202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
		~~LS~~		~~202~~	~~98000~~	~~LS~~		~~REMOVAL MISC.:EXPANSION JOINT REMOVAL~~	433
		3		257	10000	3	SY	DIAMOND GRINDING PORTLAND CEMENT CONCRETE PAVEMENT 2	
		~~1,023~~		~~512~~	~~10100~~	~~1,023~~	~~SY~~	~~SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)~~	
		1,283		512	10400	1,283	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
		1,023		512	74000	1,023	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
		15,640		514	00050	15,640	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
		15,640		514	00056	15,640	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
		15,640		514	00060	15,640	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
		15,640		514	00066	15,640	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
		23		514	00504	23	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
		9		514	10000	9	EACH	FINAL INSPECTION REPAIR	
		126		516	10011	126	FT	ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN	433
		133		519	11101	133	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	341
		LS		SPECIAL	60610900	LS		NOISE BARRIER REPAIR LOOSE OR MISSING SOUNDWALL SHIMS AND WOODEN MEMBERS	340

CALCULATED JLG
CHECKED KSC

GENERAL SUMMARY

1 - REVISED 02/28/2018
2 - REVISED 02/26/2018
3 - REVISED 01/29/2018

HAM-IR71-8.42

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GG011.dgn Sheet 2/28/2018 8:35:40 AM chen

SHEET NUM.	PART. 01/IMS/PV	PART. 02/IMS/BR	PART. 03/	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
								STRUCTURE OVER 20 FOOT SPAN (HAM-71-1277L)	
		LS		201	11001	LS		**CLEARING AND GRUBBING, AS PER PLAN**	339
		LS		202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
		LS		202	98000	LS		REMOVAL MISC.:EXPANSION JOINT REMOVAL	441
		3		257	10000	3	SY	DIAMOND GRINDING PORTLAND CEMENT CONCRETE PAVEMENT	
		16		510	10001	16	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	339
		935		512	10400	935	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
		1,581		514	00050	1,581	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
		1,581		514	00056	1,581	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
		1,581		514	00060	1,581	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
		1,581		514	00066	1,581	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
		3		514	00504	3	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
		1		514	10000	1	EACH	FINAL INSPECTION REPAIR	
		115		516	10011	115	FT	ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN	441
		2		516	44101	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	340
								AS PER PLAN, 8"x1'-0"x2.51"	
		6		516	44101	6	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	340
								AS PER PLAN, 8"x1'-0"x2.51" WITH HP POST	
		2		516	44101	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	340
								AS PER PLAN, 8"x1'-0"x2.53"	
		6		516	44101	6	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	340
								AS PER PLAN, 8"x1'-0"x2.53" WITH HP POST	
		LS		516	47000	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE	
		130		519	11101	130	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340
		LS		SPECIAL	60610900	LS		NOISE BARRIER REPAIR LOOSE OR MISSING SOUNDWALL SHIMS AND WOODEN MEMBERS	340
								STRUCTURE OVER 20 FOOT SPAN (HAM-71-1277R)	
		LS		201	11001	LS		**CLEARING AND GRUBBING, AS PER PLAN**	339
		LS		202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
		LS		202	98000	LS		REMOVAL MISC.:EXPANSION JOINT REMOVAL	441
		3		257	10000	3	SY	DIAMOND GRINDING PORTLAND CEMENT CONCRETE PAVEMENT	
		18		510	10001	18	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	339
		1,074		512	10400	1,074	SY	TREATING OF CONCRETE BRIDGE DECK WITH SRS	
		1,775		514	00050	1,775	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
		1,775		514	00056	1,775	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
		1,775		514	00060	1,775	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
		1,775		514	00066	1,775	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
		3		514	00504	3	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
		1		514	10000	1	EACH	FINAL INSPECTION REPAIR	
		131		516	10011	131	FT	ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN	441
		2		516	44101	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	340
								AS PER PLAN, 8"x1'-0"x2.51"	
		7		516	44101	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	340
								AS PER PLAN, 8"x1'-0"x2.51" WITH HP POST	
		2		516	44101	2	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	340
								AS PER PLAN, 8"x1'-0"x2.53"	
		7		516	44101	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE),	340
								AS PER PLAN, 8"x1'-0"x2.53" WITH HP POST	
		LS		516	47000	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE	
		60		519	11101	60	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340

CALCULATED JLG
CHECKED KSC

GENERAL SUMMARY

HAM-IR71-8.42

166
441

⚠ - REVISED 02/28/2018

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GG012.dgn Sheet 2/28/2018 8:57:08 AM chen

SHEET NUM. 318H	PART. 01/	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
						LIGHTING	
3,851	3,851	625	25400	3,851	FT	CONDUIT, 2", 725.04	
231	231	625	25500	231	FT	CONDUIT, 3", 725.04	
469	469	625	25902	469	FT	CONDUIT, JACKED OR DRILLED, 725.04, 2"	
94	94	625	25903	94	FT	CONDUIT, JACKED OR DRILLED, 725.04, AS PER PLAN, 2"	318B
3,378	3,378	625	29000	3,378	FT	TRENCH	
493	493	625	29001	493	FT	TRENCH, AS PER PLAN	318B
19	19	625	30500	19	EACH	PULL BOX, 725.06, SIZE 1.5	
9	9	625	30520	9	EACH	PULL BOX, 725.06, SIZE 7	
1	1	625	30530	1	EACH	PULL BOX, 725.06, SIZE 18	
28	28	625	32000	28	EACH	GROUND ROD	
3,871	3,871	625	36000	3,871	FT	PLASTIC CAUTION TAPE	
						TRAFFIC CONTROL	
61	61	621	00100	61	EACH	RPM	
32	32	621	00300	32	EACH	RPM REFLECTOR	
22	22	621	54000	22	EACH	RAISED PAVEMENT MARKER REMOVED	
		~~630~~	~~03100~~		~~FT~~	~~GROUND MOUNTED SUPPORT, NO. 3 POST~~	
		~~630~~	~~08600~~		~~EACH~~	~~SIGN POST REFLECTOR~~	
46	46	630	79500	46	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
1	1	630	79611	1	EACH	SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN	318C
6	6	630	97700	6	EACH	SIGNING, MISC.:WRONG WAY DETECTION SYSTEM	318B
4	4	644	01360	4	EACH	WRONG WAY ARROW	
						TRAFFIC SIGNALS	
22	22	632	26500	22	EACH	DETECTOR LOOP	
21	21	632	64020	21	EACH	PEDESTAL FOUNDATION	
1	1	632	64021	1	EACH	PEDESTAL FOUNDATION, AS PER PLAN	318C
3,034	3,034	632	65200	3,034	FT	LOOP DETECTOR LEAD-IN CABLE	
3,584	3,584	632	66000	3,584	FT	POWER CABLE, 3 CONDUCTOR, NO. 14 AWG	
1,862	1,862	632	67300	1,862	FT	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG	
153	153	632	69500	153	FT	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG	
6	6	632	70001	6	EACH	POWER SERVICE, AS PER PLAN	318C
2	2	632	70400	2	EACH	CONDUIT RISER, 2" DIAMETER	
2	2	632	89300	2	EACH	WOOD POLE, 30'	
2	2	632	89700	2	EACH	PEDESTAL, 11'	
20	20	632	90010	20	EACH	PEDESTAL, MISC.: PEDESTIAL, 15', TRANSFORMER BASE	318C
						LANDSCAPING	
440	440	661	99920	440	SF	PLANTING, MISC.: RESTORATION OF DISTURBED LANDSCAPED AREA	318C

CALCULATED BER CHECKED JDS

GENERAL SUMMARY

HAM-71-8.42

J:\20151750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic\Sheets\91826_GG001.dgn 3/1/2018 9:41:35 AM brieder

WRONG WAY DETECTION SYSTEM NOTES

THESE SPECIFICATIONS, TOGETHER WITH THE ACCOMPANYING PLANS ARE INTENDED TO DESCRIBE THE TYPE, SIZE AND LOCATION OF THE PRODUCTS AND MATERIALS TO BE PROVIDED AND INSTALLED UNDER THE VARIOUS BID ITEMS RELATED TO THE WRONG WAY DETECTION SYSTEM. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL DEVICES AND RELATED MATERIALS IN COMPLIANCE WITH THESE PLANS AND SPECIFICATIONS, AS WELL AS:

- OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD)
- 2016 OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS
- STANDARD CONSTRUCTION DRAWINGS ISSUED BY THE OHIO DEPARTMENT OF TRANSPORTATION

THESE SPECIFICATIONS SET FORTH THE MINIMUM REQUIREMENTS OF THE WRONG WAY DETECTION SYSTEM AND THE ITEMS REFERRED HEREIN.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
   - A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
   - B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
   - C. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
2. CONDUITS.
   - A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
   - B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
   - C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
   - D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
3. WIRE FOR GROUNDING AND BONDING.
   - A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:
     - I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
     - II. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.
4. GROUND ROD.
   - A. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
   - B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.
5. POWER SERVICE AND DISCONNECT SWITCH.
   - A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.
   - B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.
     - I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.
     - II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.
6. PAYMENT ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

ITEM 625 TRENCH, AS PER PLAN
ITEM 625 CONDUIT, JACKED OR DRILLED, 725.04, 2", AS PER PLAN

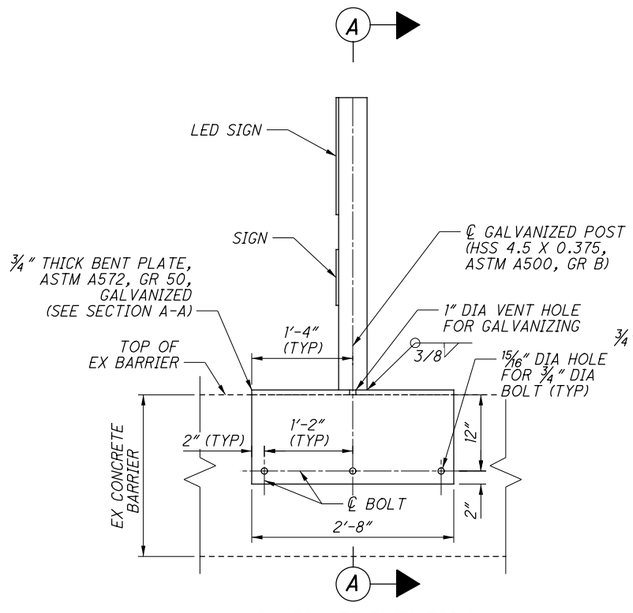
TRENCH, JACKING, DRILLING OR DIRECTIONALLY BORING THOUGH ROCK AS REQUIRED SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM OF WORK.

PAYMENT SHALL BE PER ITEM 632.

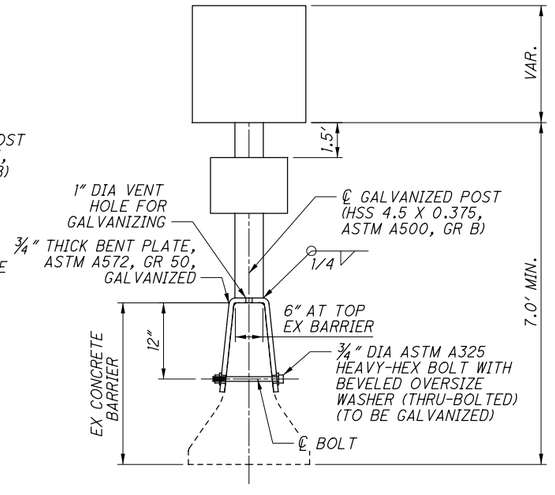
ITEM 630 - SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN

EACH SIGN SUPPORT ASSEMBLY SHALL MEET THE REQUIREMENTS OF 630 AND CONFORM TO THE DIMENSIONS OF THE DETAILS WITHIN.

ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS. PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT PRICE BID PER EACH.



BASEPLATE ELEVATION
(APPLICATION 4)



SECTION A-A

ITEM 630 SIGNING MISC.: WRONG WAY DETECTION SYSTEM

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A COMPLETE WRONG WAY DETECTION SYSTEM. THE SYSTEM SHALL DETECT THE PRESENCE OF VEHICLES TRAVELING IN THE WRONG DIRECTION ON AN EXIT RAMP. WHEN A VEHICLE TRAVELING IN THE WRONG DIRECTION IS DETECTED, WHITE LED WARNING LIGHTS IN THE SIGN SYSTEM SHALL BE ACTIVATED, A CAMERA SHALL RECORD THE EVENT AND AFTER A SECOND DETECTOR CONFIRMS THAT THE VEHICLE CONTINUED TO TRAVEL IN THE WRONG DIRECTION, ELECTRONIC NOTIFICATION SHALL BE SENT.

ALL ELEMENTS OF THE WRONG WAY SYSTEM SHALL BE PROVIDED AS A COMPLETE SYSTEM BY A SINGLE VENDOR/MANUFACTURE.

ALL ELEMENTS OF THE WRONG WAY DETECTION SYSTEM SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM OF WORK UNLESS SEPARATELY ITEMIZED. THE FOLLOWING LIST REPRESENTS AN OUTLINE OF COMPONENTS TO BE INCLUDED WITH THE SYSTEM. ITEMS NOT SPECIFICALLY LISTED BELOW, BUT REQUIRED TO PROVIDE FOR A FULLY FUNCTIONING WRONG WAY DETECTION SYSTEM SHALL ALSO BE INCLUDED:

- VEHICLE DUAL DIRECTION DETECTOR UNITS.
  - NUMBER OF UNITS FURNISHED PER SITE SHALL BE AS REQUIRED TO MEET THE FUNCTIONALITY REQUIREMENTS OF THE SYSTEM AND DETECT ALL WRONG WAY VEHICLES.
  - DETECTION HARDWARE SHALL BE POWERED BY 120VAC.
  - ULTRA-LOW POWERED RADAR UNITS WITH PROGRAMMABLE OUTPUTS.
  - SHALL BE CAPABLE OF DETECTING INCOMING OR OUTGOING TARGETS TRAVELING BETWEEN 5 AND 100 MPH.
  - SHALL BE SEALED FROM WATER INTRUSION.
  - SHALL INCLUDE SELF-TESTING, STATUS LED LIGHTS AND SELF-PROTECTION FROM REVERSE POLARITY.
  - SHALL UTILIZE RS232 SERIAL COMMUNICATION FOR PROGRAMMING.
- (1)-CONFORMATION CAMERA.
  - WIDE ANGLE HDTV 1080P OUTDOOR RATED WITH CROSS-LINK ANALYSIS.
  - SHALL HAVE PROGRAMMABLE EVENT BASED LOGIC THAT INTEGRATES WITH THE WRONG WAY LOGIC CONTROLLER.
  - IP66 RATED, NEMA 4X
  - PROVIDE FOR A MINIMUM OF ONE INPUT AND ONE OUTPUT.
  - PROVIDE FOR ADJUSTABLE IMAGE SETTINGS.
  - USE A 1/4" PROGRESSIVE SCAN RGB CMOS.
- (1)-AN ILLUMINATOR SHALL BE FURNISHED AND INSTALLED WHERE AMBIENT LIGHTING CONDITIONS DON'T PROVIDE SUFFICENT LIGHT LEVELS TO OPERATE CAMERAS IN COLOR MODE.
- (1) CELLULAR MODEM
  - WITH 2 YEARS OF MONITORING SERVICE. THE SYSTEM SHALL INCLUDE SYSTEM MONITORING, NOTIFICATIONS, AND UPDATES VIA A CELLULAR SERVICE, HOSTED/PROVIDED BY THE MANUFACTURE FOR A PERIOD OF 2 YEARS FOLLOWING THE ORIGINAL PROJECT COMPLETION DATE.
  - 4G LTE CELLULAR GATEWAY WITH INTEGRAL FIVE PORT 10/100 ETHERNET SWITCH WITH EXTERNAL OMNI-DIRECTION ANTENNA.
  - INCLUDE INTEGRAL RS232 PORT.
  - SHALL BE CAPABLE OF OVER THE AIR FIRMWARE UPDATED AND REMOTE MANAGEMENT.
  - SHALL BE CAPABLE OF IPSEC VPN
- (4)-WIRELESS RADIO COMMUNICATION UNITS. RADIO CONTROL SHALL OPERATE ON A 900 MHZ FREQUENCY HOPPING SPREAD SPECTRUM NETWORK, WI-FI OR APPROVED EQUAL. RADIOS SHALL INTEGRATE COMMUNICATION OF SIGN CONTROL CIRCUIT TO ACTIVATE SIGNS. THE RADIO SHALL BE SYNCHRONIZED SO ALL OF THE REMOTE INDICATIONS WILL TURN ON WITHIN 120 MSEC OF EACH OTHER AND REMAIN SYNCHRONIZED THROUGH-OUT THE DURATION OF THE FLASHING CYCLE.
- LOOP DETECTOR MONITORING CARD
  - NUMBER OF CARDS FURNISHED SHALL BE SUFFICIENT TO ACCOMMODATE THE PROPOSED LOOP DETECTION NEEDS.
  - SHALL WORK WITH STANDARD NEMA/170/2070 CARD RACKS.
  - SHALL UTILIZE TIA232 SERIAL COMMUNICATION FOR PROGRAMMING.
  - SHALL INCLUDE SELF-TESTING AND LED STATUS LIGHTS.
  - PROVIDE FOR A MINIMUM OF 4 FREQUENCY SETTINGS.
- (1) - WRONG WAY LOGIC CONTROLLER WITH INTEGRATED TEST FUNCTIONS.
  - SHALL ANALYZE INPUTS FROM MULTIPLE SENSORS AND CAMERAS.
  - PROVIDE FOR PROGRAMMABLE OUTPUTS.
  - SHALL CONTAIN DRIVE RELAYS

CALCULATED BER CHECKED JDS

TRAFFIC

HAM-71-8.42

318B
441

J:\20151750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic\Sheets\91826_TN001.dgn 3/1/2018 9:41:38 AM brieder

- SHALL INCLUDE LED STATUS LIGHTS AND ON-SITE TESTING.
- PROVIDE FOR MICRO USB INTERFACE
- (1) - PROGRAMMABLE SIGN CONTROLLER
  - PROVIDE FOR A MINIMUM OF TWO INPUTS AND OUTPUTS
  - PROGRAMMABLE INCLUDING FLASH PATTERN, DURATION AND LED INTENSITY.
  - INTEGRATE WITH WIRELESS RADIOS.
  - INCLUDE REAL TIME CLOCK WITH ON-BOARD BATTERY.
  - PROVIDE FOR DATA LOGGING.
  - PROVIDE FOR RS232 SERIAL INTERFACE
- POLE MOUNTED CONTROL CABINET(S), WITH CONTROL EQUIPMENT.
- (2) - WRONG WAY SIGNS R5-1A (48"X36"), 120V AC/SOLAR POWERED, WHITE LED, PERIMETER BLINKING.
- (4) - WRONG WAY SIGNS R5-1A (42"X30"), SIGN FLAT SHEET.
- (2) - DO NOT ENTER SIGNS R5-1 (48"X48"), 120VAC/SOLAR POWERED, WHITE LED, PERIMETER BLINKING.
- SOLAR PANELS MOUNTED TO AN ALUMINUM PLATE AND BRACKET AT AN ANGLE OF 45 DEGREES- 60 DEGREES TO PROVIDE MAXIMUM OUTPUT.
- BATTERIES FOR LED SIGNS WITH WRITTEN TWO YEAR FULL REPLACEMENT WARRANTY.
- THE SYSTEM SHALL OPERATE UNDER THE FOLLOWING CONDITIONS:
  - SHALL COMPLY WITH PART 15 OF FCC.
  - SHALL OPERATE FROM -4 DEGREES F TO 122 DEGREES F.
  - PROGRAMMABLE FROM A WINDOWS BASED PC
- (8)-HOURS OF ONSITE TRAINING.

ALL LED, PERIMETER EDGE LIT BLINKING SIGNS SHALL BE WIRELESSLY CONTROLLED AND SYNCHRONIZED VIA THE USE OF WIRELESS RADIOS. EACH SIGN SHALL BE A COMPLETE ASSEMBLY, CONSISTING OF BUT NOT LIMITED TO, SIGNAGE, SIGN MOUNTING HARDWARE, INDICATIONS AND ELECTRICAL COMPONENTS (WIRING, SOLID-STATE CIRCUIT BOARDS, ETC.). EACH SIGN SHALL BE SUPPLIED WITH ALL REQUIRED HARDWARE TO INSTALL ASSEMBLY. ALL EXPOSED HARDWARE SHALL BE ANTI-VANDAL. ASSURE ALL SIGNS MEETS THE REQUIREMENTS OF C&MS 630. THE CONTROL CIRCUIT SHALL BE SEALED WATERTIGHT TO ELIMINATE DIRT CONTAMINATION AND ALLOW FOR SAFE HANDLING IN ALL WEATHER CONDITIONS.

SEE SOLAR POWERED LED SIGN REQUIREMENTS AND ELECTRICAL REQUIREMENTS FOR SOLAR-POWERED DEVICES FOR ADDITIONAL REQUIREMENTS.

WARRANTY
WARRANTY SHALL BE TWO YEARS FROM THE DATE OF FINAL ACCEPTANCE.

MEASUREMENT
THE DEPARTMENT WILL MEASURE THIS ITEM COMPLETE IN PLACE, INCLUDING ALL MATERIALS, TESTING, LABOR AND SOFTWARE FOR A FULLY FUNCTIONAL SYSTEM.

PAYMENT
PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER EACH FOR ITEM 630 SIGNING MISC.: WRONG WAY DETECTION SYSTEM AND INCLUDE ALL MATERIALS AND LABOR TO FURNISH AND INSTALL A COMPLETE SYSTEM AT ONE EXIT RAMP. ALL ELEMENTS OF THE SYSTEM SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM OF WORK UNLESS SEPARATELY ITEMIZED.

ITEM 632 POWER SERVICE, AS PER PLAN

POWER FOR THE PROPOSED WRONG WAY DETECTION SYSTEM SHALL BE OBTAINED FROM EITHER AN EXISTING ODOT OWNED CABINET OR DIRECTLY FROM DUKE ENERGY AS SPECIFIED IN THE PLAN.

WHEN POWER IS OBTAINED DIRECTLY FROM DUKE ENERGY, A WOOD POLE, METER AND DISCONNECT SWITCH SHALL BE FURNISHED AND INSTALLED AS PART OF THIS ITEM OF WORK. POWER SUPPLIED SHALL BE 120 VOLTS, SINGLE PHASE. THE CONTRACTOR SHALL COORDINATE WITH DUKE ENERGY TO ESTABLISH POWER SERVICE A MINIMUM OF SIX WEEKS PRIOR TO THE NEED FOR POWER AT (888) 700-3853.

WHEN POWER IS OBTAINED FROM AN EXISTING ODOT OWNED CABINET, A NEW 15 AMP CIRCUIT BREAKER SHALL BE FURNISHED AND INSTALLED AS PART OF THIS ITEM OF WORK. ALL CABINET WIRING MODIFICATIONS AND MISCELLANEOUS HARDWARE NEEDED TO ADD THE CIRCUIT BREAKER SHALL CONSIDERED INCIDENTAL TO THIS ITEM OF WORK. POWER SUPPLIED SHALL BE 120 VOLTS, SINGLE PHASE. A DISCONNECT SWITCH SHALL ALSO BE FURNISHED AND INSTALLED AS INDICATED.

REFERENCE IS MADE TO THE REQUIREMENTS OF ODOT STANDARD DRAWING ITS-15.11.

PAYMENT SHALL BE PER ITEM 632.

ITEM 632 PEDESTAL FOUNDATION, AS PER PLAN

AT APPLICATION 6 THE TOP OF THE PROPOSED FOUNDATION SHALL BE AT THE SAME ELEVATION AS THE EXISTING BARRIER WALL. HOWEVER, THE FOUNDATION DEPTH SHALL BE MEASURED FROM THE LOWER ELEVATION SIDE AS ILLUSTRATED ON THE DETAIL. ALL AFFECTED REINFORCING STEEL SHALL BE LENGTHENED TO CORRESPOND TO THE INCREASED FOUNDATION LENGTH.

ALL ROCK EXCAVATION REQUIRED TO PROVIDE THE REQUIRED FOUNDATION DEPTH AS SPECIFIED IN ODOT STANDARD DRAWING TC-21.20 SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM OF WORK.

ITEM 632 PEDESTAL, MISC.: PEDESTAL, 15', TRANSFORMER BASE

THE PEDESTAL SHALL BE PER ITEM 632 AND THE DETAILS FURNISHED WITHIN.

PAYMENT SHALL BE PER ITEM 632.

ITEM 661 PLANTING, MISC.: RESTORATION OF DISTURBED LANDSCAPED AREA

UNDER THIS ITEM OF WORK THE CONTRACTOR SHALL DOCUMENT THE EXISTING CONDITIONS AND EXISTING VEGETATION PRIOR TO DISTURBING THE EXISTING LANDSCAPED AREA (FLOWER BED) FOR CONDUIT INSTALLATION. AFTER THE INSTALLATION OF POWER CONDUIT, THE AREA SHALL BE FULLY RESTORED TO PRE-CONSTRUCTION CONDITIONS.

PAYMENT SHALL BE PER ITEM 661 AND BE PER SQUARE FEET OF RESTORED AREA.

ENGINEERS SEAL:

STATE OF OHIO
JASON D. SMALLWOOD #E-69540 REGISTERED PROFESSIONAL ENGINEER

SIGNED:
DATE: 10-30-2017
SHEETS: 318A-318O

SOLAR POWERED LED SIGN REQUIREMENTS

THIS SPECIFICATION DESCRIBES THE MINIMUM ACCEPTABLE DESIGN AND PERFORMANCE REQUIREMENTS FOR LED ENHANCED SIGNS. THE SIGN SHALL BE SELF-POWERED BY SOLAR PANELS AND BATTERIES WITH NO EXTERNAL ELECTRICAL POWER INSTALLATION. THE LED ENHANCED SIGN SHALL BE MUTCD COMPLIANT.

THE FOLLOWING CRITERIA SHALL BE MET:
1. THE NEW UNIT SHALL ATTACH SECURELY TO THE PROPOSED SIGN SUPPORT USING A TAMPER RESISTANT FASTENING SYSTEM. SPECIAL TOOLS NEEDED FOR THE TAMPER RESISTANT FASTENING SYSTEM SHALL BE SUPPLIED WITH EACH SIGN.
2. EACH SIGN UNIT SHALL BE IDENTIFIED WITH THE MANUFACTURER'S NAME, DATE OF MANUFACTURE, AND SERIAL NUMBER ON THE BACK SIDE.
3. THE SIGN UNIT SHALL BE VISIBLE AT A MINIMUM OF 1/4 MI. DURING ALL CONDITIONS.
4. THE SIGN UNIT SHALL INCORPORATE CIRCUITRY TO ENSURE THAT IT HAS BRIGHTNESS ADJUSTMENT DURING DAY, DUSK, AND AT NIGHT (DIMMABLE).
5. THE LENS OF THE LED UNIT SHALL BE CAPABLE OF WITHSTANDING ULTRAVIOLET LIGHT (DIRECT SUNLIGHT) EXPOSURE FOR A MINIMUM TIME PERIOD OF FIVE YEARS WITHOUT EXHIBITING EVIDENCE OF DETERIORATION.
6. THE LENSES SHALL WITHSTAND A 3 FOOT DROP TEST ONTO A HARD SURFACE AND SHALL BE A MINIMUM OF 1/4 INCH THICK AND FREE OF BUBBLES AND IMPERFECTIONS. THE LENSES SHALL BE SMOOTH ON THE OUTSIDE, WITH NO EXTERNAL FACETS TO PREVENT DIRT AND DEBRIS BUILD-UP.
7. IF LENSES ARE TINTED, THEY SHALL MATCH THE WAVELENGTH (CHROMATICITY) OF THE LED.
8. THE INDIVIDUAL LED LIGHT SOURCES SHALL BE WIRED SO THAT A CATASTROPHIC FAILURE OF ONE LED LIGHT SOURCE WILL NOT RESULT IN THE LOSS OF MORE THAN ONE LED LIGHT SOURCE IN THE SIGN UNIT.
9. LED UNITS AND ASSOCIATED ON-BOARD CIRCUITRY SHALL CONFORM TO THE REQUIREMENTS IN FEDERAL COMMUNICATIONS COMMISSION (FCC) TITLE 47, SUB PART B, SECTION 15 REGULATIONS CONCERNING THE EMISSION OF ELECTRONIC NOISE.
10. LED'S SHALL BE RATED FOR USE IN THE AMBIENT OPERATING TEMPERATURE RANGE OF -40°F TO +166°F. (=-40°C TO +74°C)
11. THE LED'S WIRING SHALL BE SEALED WATERTIGHT TO ELIMINATE DIRT CONTAMINATION AND ALLOW FOR SAFE HANDLING IN ALL WEATHER CONDITIONS. THE LED'S SHALL BE SEALED AGAINST DUST AND MOISTURE INTRUSION AS PER THE REQUIREMENTS OF NEMA STANDARD 250-1991 FOR TYPE 4 ENCLOSURES AND TO PROTECT ALL INTERNAL LED AND ELECTRICAL COMPONENTS.
12. THE SIGN LED'S SHALL DISPLAY A MINIMUM OF 500,000 MCD FOR DAYTIME VISIBILITY.

SOLAR REQUIREMENTS
SEE "GENERAL ELECTRICAL REQUIREMENTS FOR SOLAR-POWERED DEVICES".

REQUIRED DOCUMENTATION
EACH SIGN UNIT SHALL BE PROVIDED WITH THE FOLLOWING DOCUMENTATION EITHER IN HARD COPY OR AS A PDF.
1. ONE SCHEMATIC DIAGRAM SHALL BE PROVIDED FOR THE SIGN UNIT ALONG WITH ANY NECESSARY INSTALLATION INSTRUCTIONS.
2. THE LED MANUFACTURERS NAME, BRAND, AND MODEL NUMBER.

WARRANTY
1. THE LED ENHANCED SIGNAL AHEAD SIGN UNIT SHALL BE REPAIRED OR REPLACED BY THE MANUFACTURER IF IT EXHIBITS A FAILURE DUE TO WORKMANSHIP OR MATERIAL DEFECTS WITHIN 2 YEARS OF FIELD OPERATION.
2. THE MANUFACTURER SHALL PROVIDE A WRITTEN WARRANTY AGAINST DEFECTS IN MATERIALS, WORKMANSHIP, AND LUMINOUS INTENSITY FOR THE LED ENHANCED SIGN UNIT FOR A PERIOD OF 2 YEARS AFTER INSTALLATION. A REPLACEMENT LED ENHANCED SIGN UNIT SHALL BE PROVIDED WITHIN 10 DAYS AFTER RECEIPT OF FAILED UNIT AT NO COST, EXCEPT THE COST OF SHIPPING THE FAILED UNIT.

ELECTRICAL REQUIREMENTS FOR SOLAR-POWERED DEVICES

- RUN REQUIREMENTS OF THIS DEVICE SHALL INCLUDE 4 HOURS PER DAY FOR 14 DAYS UNDER AUTONOMY OPERATION.
- UTILIZE ENVIRONMENTALLY-SEALED, HIGH-EFFICIENCY LED LIGHT SOURCES FOR THIS SOLAR-POWERED APPLICATION.
- HOUSE THE SOLAR POWER SUPPLY CONTROLLER AND BATTERY IN ONE OR TWO STAINLESS STEEL OR ALUMINUM ENCLOSURES WITH A MINIMUM NEMA 3 OR 3X RATING.
- IF THE EXTERIOR SIZE OF THE ENCLOSURE NECESSARY TO MEET THE REQUIREMENTS BELOW IS LESS THAN 1000 CUBIC INCHES, A SINGLE POLYMER ENCLOSURE RATED NEMA 4 AND LISTED AS SUNLIGHT-RESISTANT MAY BE INSTALLED, WITH APPROVAL OF THE ENGINEER.
- SEAL ENCLOSURE CONDUIT ENTRIES TO PREVENT INSECT AND/OR RODENT ENTRY.
- PROVIDE METAL ENCLOSURES WITH AN EXTERIOR OF BARE OR POWDER-COATED ALUMINUM, OR STAINLESS STEEL.
- PROVIDE A LOCKING ENCLOSURE USING 2 LOCKS PER PADLOCK PER C&MS 631.06.
- SEPARATE THE CONTROL ELECTRONICS AND BATTERY, IF CONTAINED WITHIN A SINGLE ENCLOSURE, TO PREVENT DAMAGE TO THE CONTROL ELECTRONICS IF THE BATTERY ENVELOPE IS COMPROMISED. CONTROL EQUIPMENT SHALL BE LOCATED IN A NEMA 4X ENCLOSURE.
- PROVIDE SEALED GEL-CELL OR AGM (ABSORBED GLASS MAT) LEAD-ACID BATTERIES FOR ALL INSTALLATIONS WITH INSTANTANEOUS LOAD REQUIREMENTS OF 4 WATTS OR ABOVE, REGARDLESS OF DUTY CYCLE. FOR INSTALLATIONS WITH INSTANTANEOUS LOAD REQUIREMENTS OF LESS THAN 4 WATTS, RECHARGEABLE NICD, LI-ION, OR NIMH BATTERIES MAY BE USED INSTEAD OF AGM OR GEL-CELL, IF APPROVED BY THE ENGINEER.
- PROVIDE SIGNED COPIES FROM THE SOLAR PANEL AND/OR CONTROLLER MANUFACTURER OF ALL CALCULATIONS USED TO SIZE THE SOLAR PANEL AND BATTERIES.
- INCLUDE IN THESE CALCULATIONS THE INSOLATION VALUE USED AND ITS REFERENCE SOURCE, THE SOLAR PANEL EFFICIENCY, CHARGER/CONTROLLER EFFICIENCY, INVERTER EFFICIENCY, PROPOSED LED LAMP AND/OR EQUIPMENT LOAD, AND A FIGURE REPRESENTING ANTICIPATED MISCELLANEOUS LOSSES.
- SHOW CALCULATIONS DOCUMENTING A RESERVE CAPACITY OF TWO WEEKS OPERATION UNDER CONTINUOUS WORST-CASE (MINIMUM) INSOLATION FIGURES (USUALLY DECEMBER) FOR THE PROPOSED GEOGRAPHIC LOCATION, USING A PANEL ELEVATION ANGLE APPROPRIATE TO THE SITE, AT A SUSTAINED TEMPERATURE OF 25 DEGREES FAHRENHEIT (-4 DEGREES CELSIUS).
- DELIVER A COPY OF THE CALCULATIONS TO THE ENGINEER AND ANOTHER COPY TO THE OFFICE OF ROADWAY ENGINEERING FOR APPROVAL.
- PROVIDE DOCUMENTATION SHOWING THAT THE SOLAR PANEL MANUFACTURER TESTED THE PANEL ACCORDING TO IEC61215 OR EQUIVALENT APPROVED STANDARD.
- PROVIDE DOCUMENTATION SHOWING THAT SOLAR PANEL MOUNTING IS RATED FOR 90 MPH DESIGN WIND AND DESIGNED TO RESIST VANDALISM.
- ENSURE NEC GROUNDING AND BONDING REQUIREMENTS ARE MET IF VOLTAGES OVER 50V AC OR DC ARE PRESENT.

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	
HL-20.11	4/21/17	TC-41.20	10/18/13	TC-73.20	7/21/17	800-2016	7/21/17
HL-30.11	7/21/17	TC-41.30	10/18/13	TC-82.10	7/17/15	809	7/21/17
HL-30.22	1/17/14	TC-41.40	10/18/13	TC-83.20	7/21/17		
		TC-42.20	10/18/13				
MT-95.45	7/21/17	TC-52.20	7/21/17	ITS-15.11	7/17/15		
MT-98.28	1/20/17	TC-65.10	1/17/14				
		TC-65.11	7/21/17				

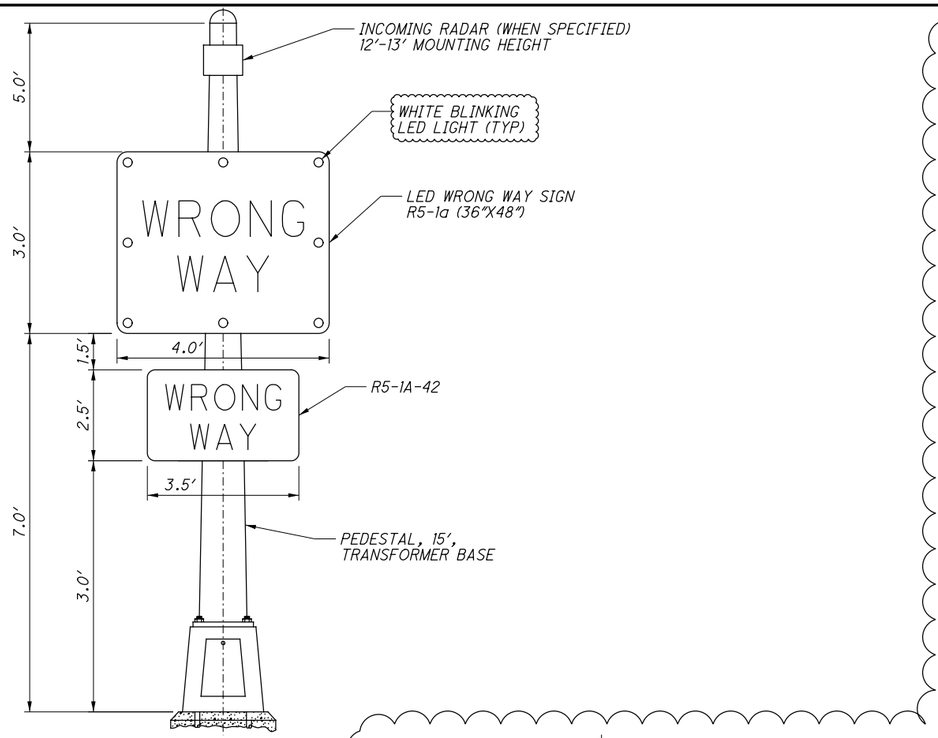
CALCULATED BER CHECKED JDS

TRAFFIC CONTROL GENERAL NOTES

HAM-71-8.42

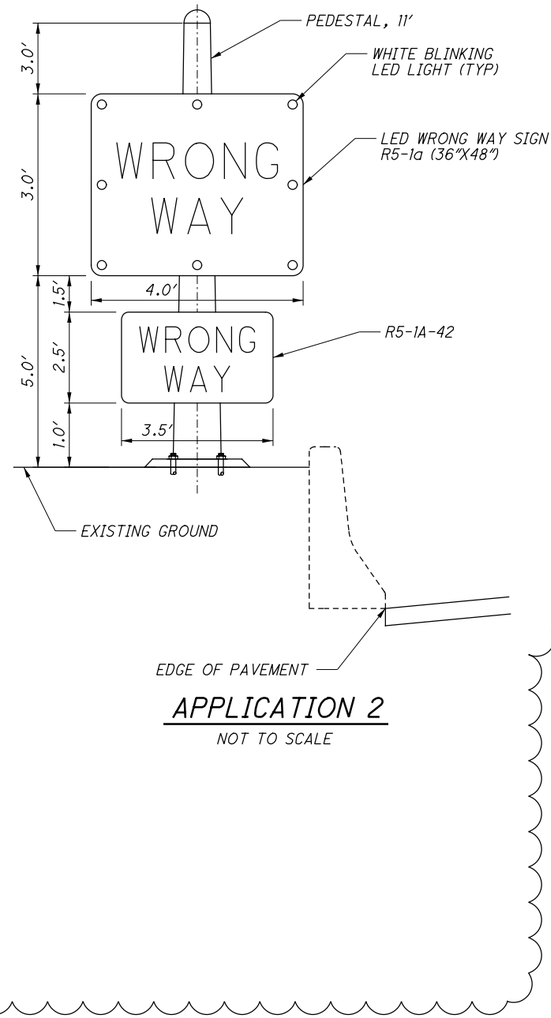
318C
441

J:\20151750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic Sheets\91826_TN002.dgn 3/1/2018 9:41:39 AM brieder



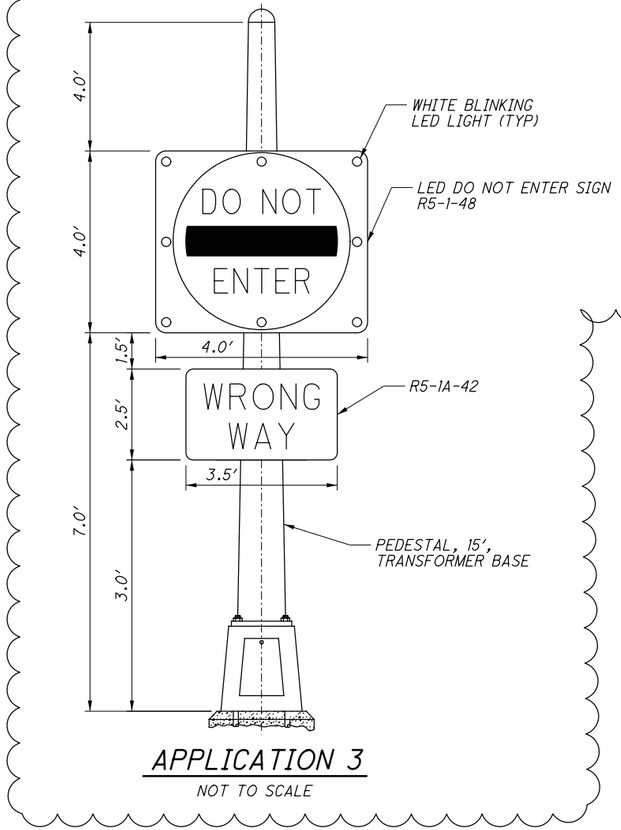
APPLICATION 1

NOT TO SCALE



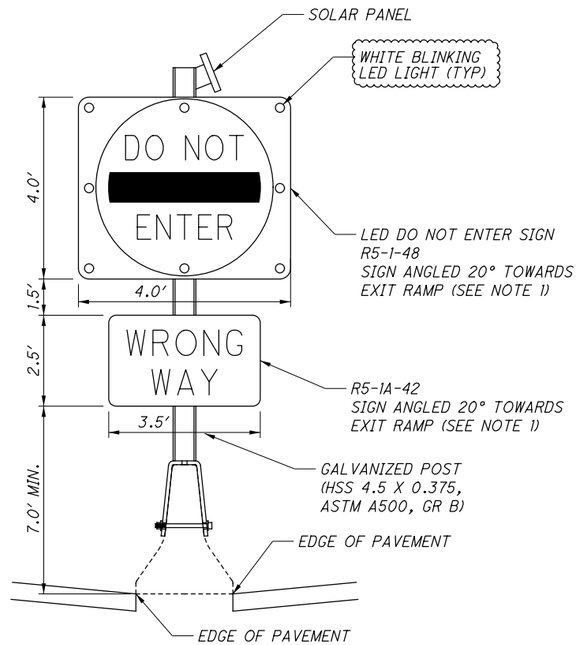
APPLICATION 2

NOT TO SCALE



APPLICATION 3

NOT TO SCALE



APPLICATION 4

NOT TO SCALE

NOTE:
1. ROTATION ANGLE SHALL BE FIELD APPROVED BY THE ENGINEER.

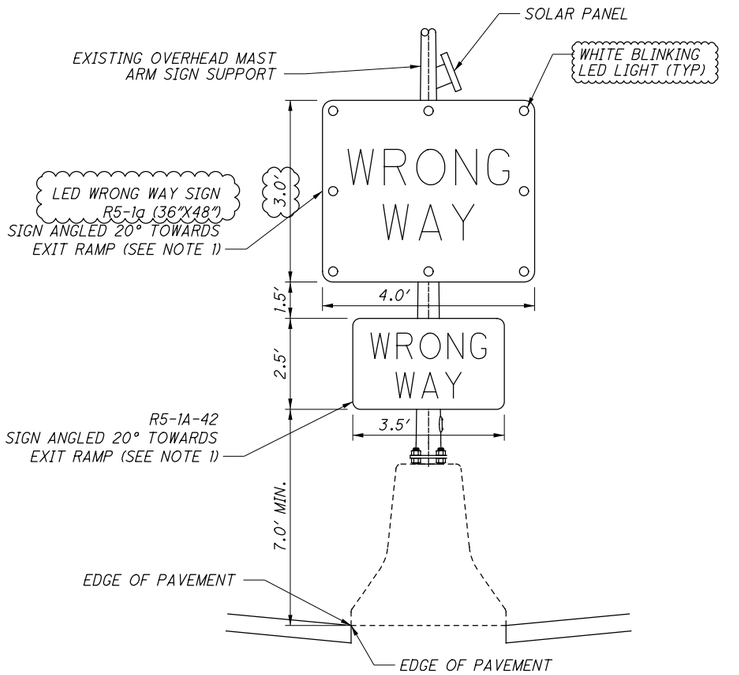
CALCULATED BER
CHECKED JDS

TRAFFIC CONTROL DETAILS

HAM-71-8.42

318F
441

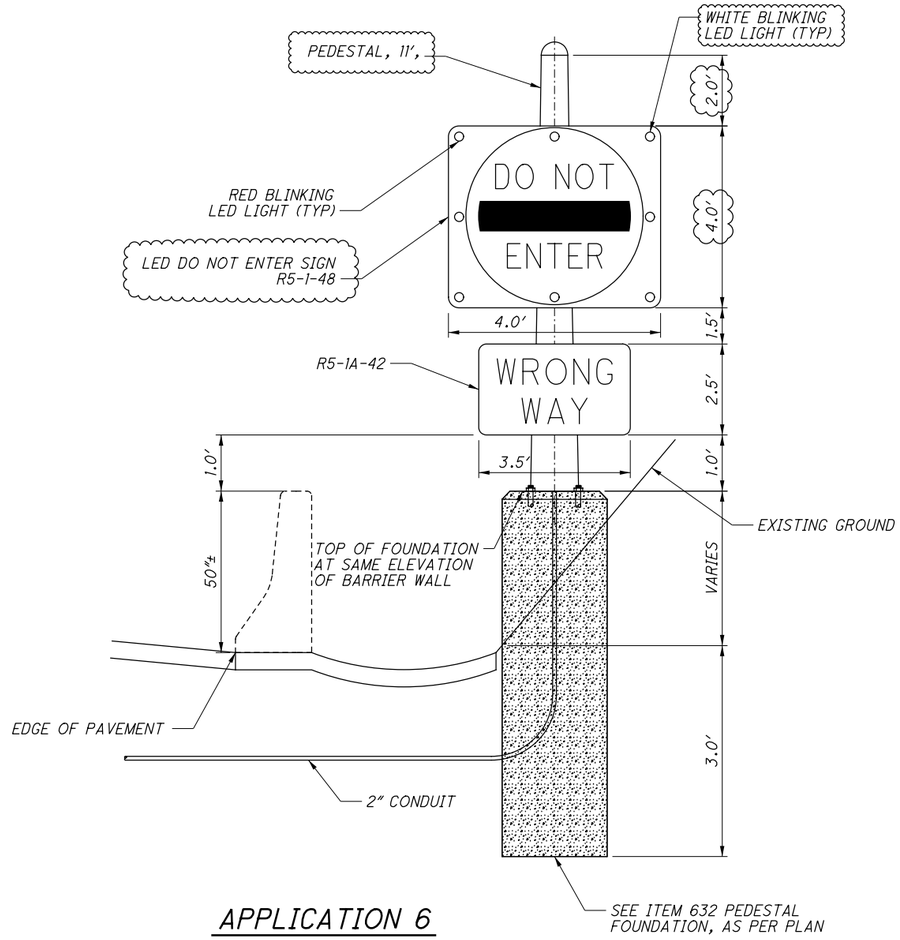
J:\20151750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic\Sheets\91826_TD002.dgn 3/1/2018 9:41:41 AM brieder



APPLICATION 5

NOT TO SCALE

NOTE:
1. ROTATION ANGLE SHALL BE FIELD APPROVED BY THE ENGINEER.



APPLICATION 6

NOT TO SCALE

CALCULATED BER
CHECKED JDS

TRAFFIC CONTROL DETAILS

HAM-71-8.42

318G
441

J:\20151750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic Sheets\91826_TD004.dgn 3/1/2018 9:41:41 AM brieder

ESTIMATED QUANTITIES

INTERSECTION									ITEM	EXTENSION	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
LOCATION 1 IR-71 NB AT RIDGE RD	LOCATION 2 IR-71 SB AT HIGHLAND AVE	LOCATION 3 IR-71 NB AT STEWART RD	LOCATION 4 IR-71 NB AT KENWOOD RD	LOCATION 5 IR-71 NB AT MONTGOMERY RD	LOCATION 6 IR-71 SB AT MONTGOMERY RD									
49				6	6				621	00100	61	EACH	RPM	
				16	16				621	00300	32	EACH	RPM REFLECTOR	
22									621	54000	22	EACH	RAISED PAVEMENT MARKER REMOVED	
411	589	507	800	753	791				625	25400	3851	FT	CONDUIT, 2", 725.04	
231									625	25500	231	FT	CONDUIT, 3", 725.04	
	86		70	158	155				625	25902	469	FT	CONDUIT, JACKED OR DRILLED, 725.04, 2"	
		94							625	25903	94	FT	CONDUIT, JACKED OR DRILLED, 725.04, AS PER PLAN, 2"	318B
501	575		786	739	777				625	29000	3378	FT	TRENCH	
		493							625	29001	493	FT	TRENCH, AS PER PLAN	318B
2	4	3	3	2	5				625	30500	19	EACH	PULL BOX, 725.06, SIZE 1.5	
4		1	1	2	1				625	30520	9	EACH	PULL BOX, 725.06, SIZE 7	
1									625	30530	1	EACH	PULL BOX, 725.06, SIZE 18	
3	5	5	5	5	5				625	32000	28	EACH	GROUND ROD	
501	575	493	786	739	777				625	36000	3871	FT	PLASTIC CAUTION TAPE	
									~~630~~	~~03100~~		~~FT~~	~~GROUND MOUNTED SUPPORT, NO. 3 POST~~	
									~~630~~	~~08600~~		~~EACH~~	~~SIGN POST REFLECTOR~~	
6	8	8	8	8	8				630	79500	46	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
1									630	79611	1	EACH	SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN	318B
1	1	1	1	1	1				630	97700	6	EACH	SIGNING, MISC.:SIGNING, MISC.: WRONG WAY DETECTION SYSTEM	318B
22									632	26500	22	EACH	DETECTOR LOOP	
2	4	3	4	4	4				632	64020	21	EACH	PEDESTAL FOUNDATION	
		1							632	64021	1	EACH	PEDESTAL FOUNDATION, AS PER PLAN	318C
3034									632	65200	3034	FT	LOOP DETECTOR LEAD-IN CABLE	
269	625	509	731	652	798				632	66000	3584	FT	POWER CABLE, 3 CONDUCTOR, NO. 14 AWG	
230	238	290	320	438	346				632	67300	1862	FT	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG	
102		51							632	69500	153	FT	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG	
1	1	1	1	1	1				632	70001	6	EACH	POWER SERVICE, AS PER PLAN	
1		1							632	70400	2	EACH	CONDUIT RISER, 2" DIAMETER	
1		1							632	89300	2	EACH	WOOD POLE, 30'	
		1			1				632	89700	2	EACH	PEDESTAL, 11'	
2	4	3	4	4	3				632	90010	20	EACH	PEDESTAL, MISC.:PEDESTAL, 15', TRANSFORMER BASE	318C
2			2						644	01360	4	EACH	WRONG WAY ARROW	
	440								661	99920	440	SF	PLANTING, MISC.: RESTORATION OF DISTURBED LANDSCAPED AREA	318C

CALCULATED BER CHECKED JDS

SIGNING SUBSUMMARY

HAM-71-8.42

318H
441

J:\2015\750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic\Sheets\91826_TS001.dgn 3/1/2018 9:41:42 AM brieder

LOCATION 1

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 76'

APPLICATION 4
BARRIER MOUNTED POST
W/(1)-WIRELESS RADIO
W/(1)-SOLAR POWERED LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
MOUNT BOTH SIGNS AT 20° ANGLE TOWARDS RAMP F (SEE NOTE 2)
X (E) = 1,422,936.995
Y (N) = 430,053.988

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
X (E) = 1,422,942.913
Y (N) = 430,009.928

APPLICATION 5
EXISTING TRAFFIC CONTROL POLE (TO REMAIN)
W/(1)-WIRELESS RADIO
W/(1)-SOLAR POWERED LED WRONG WAY SIGN (48"x 36") (POLE MT'D)
W/(1)-WRONG WAY SIGN (42"x 30") (POLE MT'D)
MOUNT BOTH SIGNS AT 20° ANGLE TOWARDS RAMP F (SEE NOTE 2)
X (E) = 1,423,135.614
Y (N) = 430,081.043

RAMP M (RIDGE RD TO IR-71 SB)
RAMP H (ALAMO AVE TO IR-71 SB)
RAMP T (ALAMO AVE TO SR 562)
RAMP T (RIDGE RD TO SR 562)
RAMP F (IR-71 NB TO RIDGE RD)
RAMP U (IR-71 NB TO MARBURG AVE)

WRONG WAY ARROW
INSTALL RPM'S PER ODOT SCD TC-73.10
91'
L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 L11 L12
L13 L14 L15 L16 L17 L18 L19 L20 L21 L22

PULL BOX, 725.06 (SIZE 7)
X (E) = 1,423,245.113
Y (N) = 430,035.508

PULL BOX, 725.06 (SIZE 1.5)
X (E) = 1,423,300.816
Y (N) = 430,027.503

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES IN TRENCH = 23'

WOOD POLE, 30'
W/(1)-2" CONDUIT RISER
W/(1)-METER AND DISCONNECT SWITCH
X (E) = 1,423,315.757
Y (N) = 430,010.444

AERIAL SERVICE CABLE, (2)-NO. 6 AWG = 62'

EXISTING POWER POLE (TO REMAIN)
PROPOSED POWER TAP-IN LOCATION
X (E) = 1,423,348.2003
Y (N) = 429,958.560

PULL BOX, 725.06 (SIZE 7)
X (E) = 1,423,230.748
Y (N) = 430,033.239

(1)-3" CONDUIT (725.04) W/(5)-2/C IN TRENCH = 15'

(1)-3" CONDUIT (725.04) W/(10)-2/C IN TRENCH = 89'

PULL BOX, 725.06 (SIZE 18)
X (E) = 1,423,144.664
Y (N) = 430,010.265

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES IN TRENCH = 157'

PULL BOX, 725.06 (SIZE 1.5)
X (E) = 1422956.677
Y (N) = 430009.928

PULL BOX, 725.06 (SIZE 7)
X (E) = 1,423,230.748
Y (N) = 430,033.239

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 14'

(1)-3" CONDUIT (725.04) W/(6)-2/C
(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 11'

PULL BOX, 725.06 (SIZE 7)
X (E) = 1,423,042.880
Y (N) = 430,008.112

(1)-3" CONDUIT (725.04) W/(12)-2/C
(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 102'

APPLICATION 1
PEDESTAL, 15'
W/(1)-POLE MOUNTED CONTROLLER/CABINET
W/(1)-WIRELESS RADIO
W/(1)-CONFIRMATION CAMERA
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
X (E) = 1,423,142.832
Y (N) = 430,023.906

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
(1)-3" CONDUIT (725.04) W/(22)-2/C IN TRENCH = 14'

SIGN * SIGN *

L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 L11 L12 L13 L14 L15 L16 L17 L18 L19 L20 L21 L22

SIGN CONTROLLER — (3)-NO. 8 AWG — DS — M — (2)-NO. 6 AWG — 120V SINGLE PHASE POWER SERVICE

WIRING DIAGRAM

WIRING DIAGRAM LEGEND

* - (3)-NO. 14 AWG
M - METER
DS - DISCONNECT SWITCH

NOTES:
1. REFER TO THE SURVEY PARAMETERS NOTE IN THE GENERAL NOTES FOR PROJECT CONTROL INFORMATION.
2. SIGNS SHALL BE MOUNTED AT A ANGLE OF 20° TO RAMP F. THE FINAL MOUNTING ANGLE SHALL BE APPROVED BY THE SITE ENGINEER FOR MAXIMUM VISABILITY.

HORIZONTAL SCALE IN FEET: 0, 15, 30, 60
CALCULATED BER
CHECKED JDS

TRAFFIC CONTROL PLAN - WRONG WAY SIGNAGE DETAIL - IR-71 NB AT RIDGE ROAD

HAM-71-8.42

318J
441

J:\20151750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic\Sheets\91826_TP001.dgn 3/1/2018 9:41:44 AM brieder

LOCATION 2

EXISTING PULL BOX (TO REMAIN)
STA. 10+00.9, 34.0' LT.

HIGHLAND AVE

PULL BOX, 725.06 (SIZE 1.5)
STA. 8+14.4, 22.6' LT.

EXISTING SIGNAL CONTROLLER (TO REMAIN)
PROPOSED POWER TAP-IN LOCATION
W/(1)-NEW CIRCUIT BREAKER
STA. 9+97.6, 37.2' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
IN TRENCH = 190'

PULL BOX, 725.06 (SIZE 1.5)
STA. 8+13.5, 25.1' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 1
PEDESTAL, 15'
W/(1)-POLE MOUNTED CONTROLLER/CABINET
W/(1)-WIRELESS RADIO
W/(1)-CONFIRMATION CAMERA
W/(1)-INCOMING RADAR (MICROWAVE)
W/(1)-OUTGOING RADAR (DOPPLER)
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
W/(1)-DISCONNECT SWITCH
STA. 8+00.0, 25.6' LT.

VEGETATION MAY NEED REMOVED AS DIRECTED BY THE ENGINEER AND SHALL BE PAID FOR BY ITEM 201 CLEARING AND GRUBBING.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
JACKED OR DRILLED UNDER PAVEMENT = 48'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 329'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
JACKED OR DRILLED UNDER PAVEMENT = 38'

PULL BOX, 725.06 (SIZE 1.5)
STA. 5+12.5, 23.3' LT.

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 5+00.0, 24.2' LT.

WRONG WAY ARROW
SEE TRAFFIC CONTROL PLAN

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 1
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED WRONG WAY SIGN (48"x 36")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 8+00.0, 22.0' LT.

PULL BOX, 725.06 (SIZE 1.5)
STA. 5+15.0, 14.2' RT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 5+00.0, 13.4' RT.

RAMP R (IR-71 SB TO HIGHLAND AVE)

WIRING DIAGRAM LEGEND

* - (3)-NO. 14 AWG

DS - DISCONNECT SWITCH

WIRING DIAGRAM

EXISTING CIRCUIT BREAKERS
EXISTING CIRCUIT BREAKERS
PROPOSED CIRCUIT BREAKERS
EXISTING TRAFFIC SIGNAL CONTROLLER

NO. 8 AWG POWER CABLE — DS — NO. 8 AWG POWER CABLE — SIGN CONTROLLER

SIGN
SIGN
SIGN
SIGN

HORIZONTAL SCALE IN FEET
0 15 30 60

CALCULATED BER
CHECKED JDS

TRAFFIC CONTROL PLAN - WRONG WAY SIGNAGE DETAIL - IR-71 SB AT HIGHLAND AVE

HAM-71-8.42

318K
441

J:\20151750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic\Sheets\91826_TP002.dgn 3/1/2018 9:41:45 AM brieder

LOCATION 3

[A] LOCATION OF THE SANITARY SEWER IS BASED ON RECORD PLANS. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH PRIOR TO PLACING THE PEDESTIAL. THE PEDESTAL SHALL HAVE A MINIUM 5 FOOT LATERAL OFFSET FROM THE SANITARY SEWER TO AVOID DISTURBANCE.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
JACKED OR DRILLED UNDER PAVEMENT = 46'

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 15+10.0, 14.0' RT.

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

PULL BOX, 725.06 (SIZE 1.5)
STA. 17+64.8, 14.4' RT.

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
JACKED OR DRILLED UNDER PAVEMENT = 48'

APPLICATION 1
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 17+50.0, 14.3' RT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 226'

PULL BOX, 725.06 (SIZE 1.5)
STA. 15+24.8, 15.1' RT.

WRONG WAY
SEE TRAFFIC CONTROL PLAN

WRONG WAY ARROW
SEE TRAFFIC CONTROL PLAN

RAMP F (IR-71 NB TO STEWART AVE)

STEWART RD

IR-71 SB

IR-71 NB

EX R/W

PULL BOX, 725.06 (SIZE 1.5)
STA. 19+17.2, 121.0' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
IN TRENCH = 213'

PULL BOX, 725.06 (SIZE 7)
STA. 17+62.4, 33.8' LT.

APPLICATION 1
PEDESTAL, 15'
W/(1)-POLE MOUNTED CONTROLLER/CABINET
W/(1)-WIRELESS RADIO
W/(1)-CONFIRMATION CAMERA
W/(1)-INCOMING RADAR (MICROWAVE)
W/(1)-OUTGOING RADAR (DOPPLER)
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 17+50.0, 32.6' LT.

APPLICATION 6
PEDESTAL, 11'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 15+10.0 28.6' LT.

VEGETATION MAY NEED REMOVED AS DIRECTED BY THE ENGINEER AND SHALL BE PAID FOR BY ITEM 201 CLEARING AND GRUBBING.

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
IN TRENCH = 12'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
IN TRENCH = 14'

WOOD POLE, 30'
W/(1)-2" CONDUIT RISER
W/(1)-METER AND DISCONNECT SWITCH
STA. 19+22.7, 129.5' LT.

AERIAL SERVICE CABLE, (2)-NO. 6 AWG = 21'

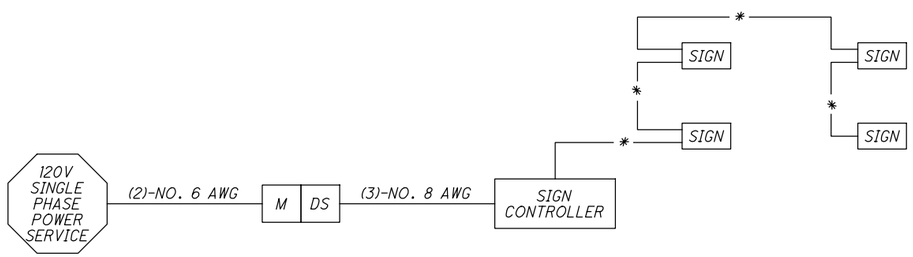
EXISTING POWER POLE (TO REMAIN)
PROPOSED POWER TAP-IN LOCATION
STA. 19+22.3, 150.0' LT.

WIRING DIAGRAM LEGEND

* - (3)-NO. 14 AWG

M - METER

DS - DISCONNECT SWITCH



WIRING DIAGRAM

CALCULATED BER
CHECKED JDS

HORIZONTAL SCALE IN FEET
0 15 30 60

TRAFFIC CONTROL PLAN - WRONG WAY SIGNAGE DETAIL - IR-71 NB AT STEWART RD

HAM-71-8.42

318L
441

J:\20151750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic\Sheets\91826_TP003.dgn 3/1/2018 9:41:46 AM brieder

LOCATION 4

EXISTING ITS CABINET (TO REMAIN)
PROPOSED POWER TAP-IN LOCATION
W/(1)-NEW CIRCUIT BREAKER
STA. 5+86.1, 61.6' LT.

EXISTING CONDUIT W/EXISTING CABLES (TO REMAIN)
W/NEW (3)-NO. 8. AWG POWER CABLES = 25'

EXISTING PULL BOX (TO REMAIN)
STA. 5+62.6, 70.7' LT.

IR-71 SB

IR-71 NB

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
IN TRENCH = 286'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 222'

PULL BOX, 725.06 (SIZE 7)
STA. 8+36.0, 38.5' LT.

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 1
PEDESTAL, 15'
W/(1)-POLE MOUNTED CONTROLLER/CABINET
W/(1)-WIRELESS RADIO
W/(1)-CONFIRMATION CAMERA
W/(1)-INCOMING RADAR (MICROWAVE)
W/(1)-OUTGOING RADAR (DOPPLER)
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
W/(1)-DISCONNECT SWITCH
STA. 8+50.0, 38.5' LT.

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 6+00.0, 38.2' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

WRONG WAY ARROW

RAMP H (IR-71 NB TO KENWOOD RD

PULL BOX, 725.06 (SIZE 1.5)
STA. 6+14.0, 38.2' LT.

PULL BOX, 725.06 (SIZE 1.5)
STA. 6+14.0, 26.0' RT.

Ex LA

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 6+00.0, 26.0' RT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
JACKED OR DRILLED UNDER PAVEMENT = 70'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 222'

SEE TRAFFIC CONTROL PLAN

APPLICATION 1
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 8+50.0, 31.6' RT.

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

PULL BOX, 725.06 (SIZE 1.5)
STA. 8+36.0, 31.6' RT.

EXISTING CIRCUIT BREAKERS
EXISTING CIRCUIT BREAKERS
PROPOSED CIRCUIT BREAKERS
EXISTING ITS CABINET

(3)-NO. 8 AWG POWER CABLES
DS
(3)-NO. 8 AWG
SIGN CONTROLLER

SIGN * SIGN *
SIGN * SIGN *

KENWOOD RD
Ex R/W
Ex LA
Ex BAR
Ex R/W

WIRING DIAGRAM LEGEND

* - (3)-NO. 14 AWG

DS - DISCONNECT SWITCH

WIRING DIAGRAM

TRAFFIC CONTROL PLAN - WRONG WAY SIGNAGE DETAIL - IR-71 NB AT KENWOOD RD

HAM-71-8.42

CALCULATED BER
CHECKED JDS

HORIZONTAL SCALE IN FEET
0 15 30 60

318M
441

J:\20151750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic\Sheets\91826_TP004.dgn 3/1/2018 9:41:47 AM brieder

LOCATION 5

WRONG WAY
SEE TRAFFIC CONTROL PLAN (A)

IR-71 SB

IR-71 NB

MONTGOMERY RD

RAMP D (IR-15 NB TO MONTGOMERY RD)

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'
APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 610+90.1, 168.2' RT.

PULL BOX, 725.06 (SIZE 1.5)
STA. 611+01.0, 170.1' RT.

APPLICATION 1
PEDESTAL, 15'
W/(1)-POLE MOUNTED CONTROLLER/CABINET
W/(1)-WIRELESS RADIO
W/(1)-CONFIRMATION CAMERA
W/(2)-INCOMING RADAR (MICROWAVE)
W/(1)-OUTGOING RADAR (DOPPLER)
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
W/(1)-DISCONNECT SWITCH
STA. 612+58.8, 237.3' RT.

PULL BOX, 725.06 (SIZE 7)
STA. 612+71.8, 242.3' RT.

SEE NOTE 2

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 610+58.6, 235.8' RT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

PULL BOX, 725.06 (SIZE 1.5)
STA. 610+70.0, 243.9' RT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 193'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 184'

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 1
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED WRONG WAY SIGN (48"x 36")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 612+56.6, 311.3' RT.

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

EXISTING CIRCUIT BREAKERS
EXISTING CIRCUIT BREAKERS
PROPOSED CIRCUIT BREAKERS
EXISTING TRAFFIC SIGNAL CONTROLLER

NO. 8 AWG POWER CABLE — DS — NO. 8 AWG POWER CABLE — SIGN CONTROLLER

SIGN
SIGN
SIGN
SIGN

WIRING DIAGRAM

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
IN TRENCH = 306'

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
JACKED OR DRILLED UNDER PAVEMENT = 79'

PULL BOX, 725.06 (SIZE 7)
STA. 612+46.3, 316.4' RT.

SEE NOTE 1

EXISTING PULL BOX (TO REMAIN)
STA. 615+42.3, 283.4' RT.

EXISTING SIGNAL CONTROLLER (TO REMAIN)
PROPOSED POWER TAP-IN LOCATION
W/(1)-NEW CIRCUIT BREAKER
STA. 615+39.4, 281.9' RT

WIRING DIAGRAM LEGEND

* - (3)-NO. 14 AWG

DS - DISCONNECT SWITCH

NOTES:
1. A QUANTITY OF 16 RED RAISED PAVMENT MARKING (RPM) REFLECTORS HAS BEEN CARRIED TO THE SUBSUMMARY TO BE INSTALLED IN EXISTING RPM CASTINGS PER ODOT SCD TC-73.20.
2. A QUANTITY OF 6 RPM'S HAS BEEN CARRIED TO THE SUBSUMMARY TO BE EVENLY PLACED BETWEEN EXISTING RPM'S PER ODOT SCD TC-73.20.

HORIZONTAL SCALE IN FEET
0 15 30 60

CALCULATED BER
CHECKED JDS

TRAFFIC CONTROL PLAN - WRONG WAY
SIGNAGE DETAIL-IR-71 NB AT MONTGOMERY RD

HAM-71-8.42

318N
441

J:\20151750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic\Sheets\91826_TP005.dgn 3/1/2018 9:41:48 AM brieder

NOTES:
1. A QUANTITY OF 16 RED RAISED PAVMENT MARKING (RPM) REFLECTORS HAS BEEN CARRIED TO THE SUBSUMMARY TO BE INSTALLED IN EXISTING RPM CASTINGS PER ODOT SCD TC-73.20.

2. A QUANTITY OF 6 RPM'S HAS BEEN CARRIED TO THE SUBSUMMARY TO BE EVENLY PLACED BETWEEN EXISTING RPM'S PER ODOT SCD TC-73.20.

WIRING DIAGRAM LEGEND

* - (3)-NO. 14 AWG

DS - DISCONNECT SWITCH

EXISTING CIRCUIT BREAKERS

EXISTING CIRCUIT BREAKERS

PROPOSED CIRCUIT BREAKERS

EXISTING TRAFFIC SIGNAL CONTROLLER

NO. 8 AWG POWER CABLE — DS — NO. 8 AWG POWER CABLE — SIGN CONTROLLER

SIGN

SIGN

SIGN

SIGN

WIRING DIAGRAM

EXISTING PULL BOX (TO REMAIN)
STA. 611+48.1, 260.3' LT.

EXISTING SIGNAL CONTROLLER (TO REMAIN)
PROPOSED POWER TAP-IN LOCATION
W/(1)-NEW CIRCUIT BREAKER
STA. 611+54.3, 259.3' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
IN TRENCH = 49'

PULL BOX, 725.06 (SIZE 1.5)
STA. 611+96.4, 266.8' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
JACKED OR DRILLED UNDER PAVEMENT = 85'

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
IN TRENCH = 154'

APPLICATION 2
PEDESTAL, 11'
W/(1)-WIRELESS RADIO
W/(1)-LED WRONG WAY SIGN (48"x 36")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 614+06.6, 276.3' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

PULL BOX, 725.06 (SIZE 1.5)
STA. 614+20.4, 274.4' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 250'

SEE TRAFFIC CONTROL PLAN

WRONG WAY

PULL BOX, 725.06 (SIZE 1.5)
STA. 616+57.1, 201.5' LT.

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 616+70.9, 199.7' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
JACKED OR DRILLED UNDER PAVEMENT = 70'

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 616+53.7, 132.1' LT.

SEE NOTE 1

RAMP E (IR-71 SB TO MONTGOMERY RD)

WRONG WAY ARROW SEE TRAFFIC CONTROL PLAN

PULL BOX, 725.06 (SIZE 1.5)
STA. 612+33.2, 191.2' LT.

PULL BOX, 725.06 (SIZE 7)
STA. 613+82.9, 195.9' LT.

PULL BOX, 725.06 (SIZE 1.5)
STA. 616+39.8, 133.9' LT.

SEE NOTE 2

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 268'

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

MONTGOMERY RD

IR-71 SB

IR-71 NB

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 1
PEDESTAL, 15'
W/(1)-POLE MOUNTED CONTROLLER/CABINET
W/(1)-WIRELESS RADIO
W/(1)-CONFIRMATION CAMERA
W/(2)-INCOMING RADAR (MICROWAVE)
W/(1)-OUTGOING RADAR (DOPPLER)
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
W/(1)-DISCONNECT SWITCH
STA. 614+36.5, 267.7' LT.

LOCATION 6

HORIZONTAL SCALE IN FEET
0 15 30 60

CALCULATED BER
CHECKED JDS

TRAFFIC CONTROL PLAN - WRONG WAY SIGNAGE DETAIL-IR-71 SB AT MONTGOMERY RD

HAM-71-8.42

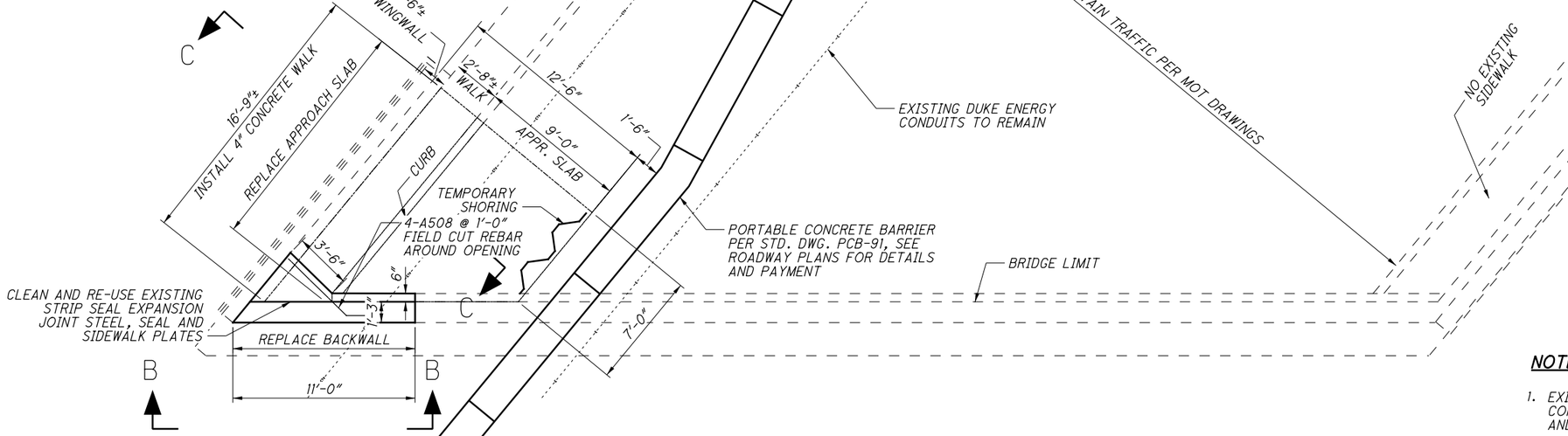
3180
441

J:\2015\1750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic\Sheets\91826_TP006.dgn 3/1/2018 9:41:49 AM brieder

VIEW B-B

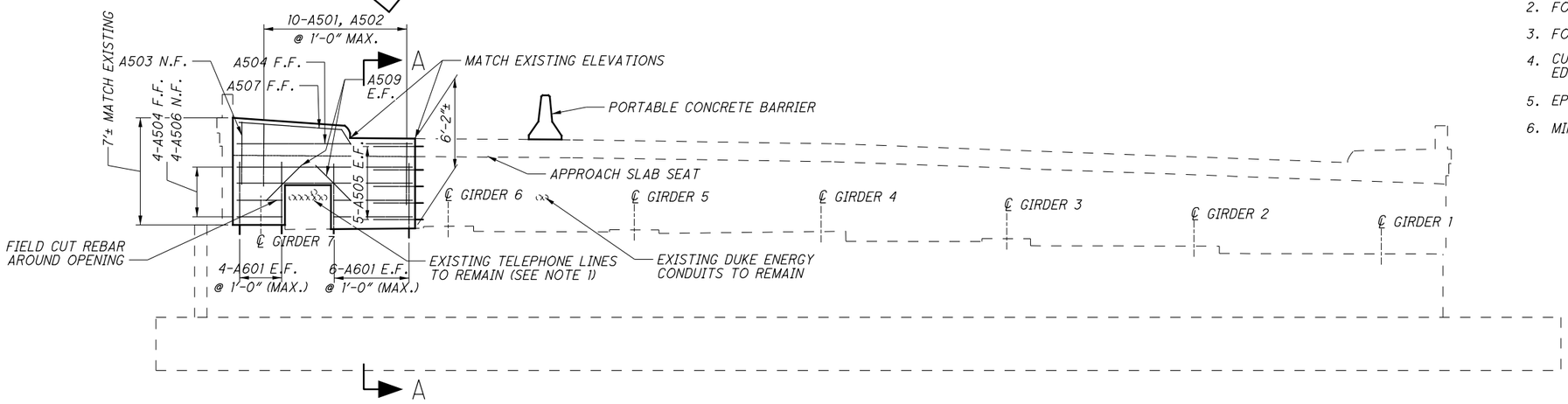
VIEW C-C

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: CLEAN AND RE-USE EXISTING EXPANSION JOINT ARMOR AND SEAL. CONTRACTOR TO REMOVE EXISTING CONCRETE AROUND THE EXISTING EXPANSION JOINT AS NEEDED TO FINISH THE ABUTMENT RETROFIT, WITHOUT DAMAGING THE JOINT ARMOR AND SEAL. CLEAN THE JOINT AFTER THE WORK IS DONE.



SOUTH ABUTMENT PLAN

(FOOTING AND SUPERSTRUCTURE NOT SHOWN)



SOUTH ABUTMENT ELEVATION

(PILES NOT SHOWN)

NOTES:

1. EXISTING TELEPHONE CONDUITS MAY CONTAIN ASBESTOS. CONTRACTOR SHALL COORDINATE BACKWALL CONSTRUCTION AND CONDUIT PROTECTION WITH CINCINNATI BELL.

   CINCINNATI BELL
   221 E. 4TH ST., BLDG. 121-900
   CINCINNATI, OH 45201
   513-565-7043 (MARK CONNER)
   MARK.CONNER@CINBELL.COM

2. FOR SECTION A-A SEE SHEET 6/9.
3. FOR APPROACH SLAB DETAILS SEE SHEET 6/9.
4. CUT OFF EXISTING REINFORCING FLUSH WITH EDGE OF REMOVAL.
5. EPOXY GROUT # 5 BARS 5" MINIMUM INTO EXISTING CONCRETE
6. MIN. LAP LENGTH FOR #5 BAR IS 2'-6".

LEGEND:

E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE

1 REVISED 3-2-2018

DESIGN AGENCY
BURGESS & NIPLE
306 PLUM ST. CINCINNATI OH

DESIGNED SJA | DRAWN SJA | REVIEWED DWL | DATE 2/20/2017
CHECKED XAC | REVISED | STRUCTURE FILE NUMBER 3115283

SOUTH ABUTMENT DETAILS - 1

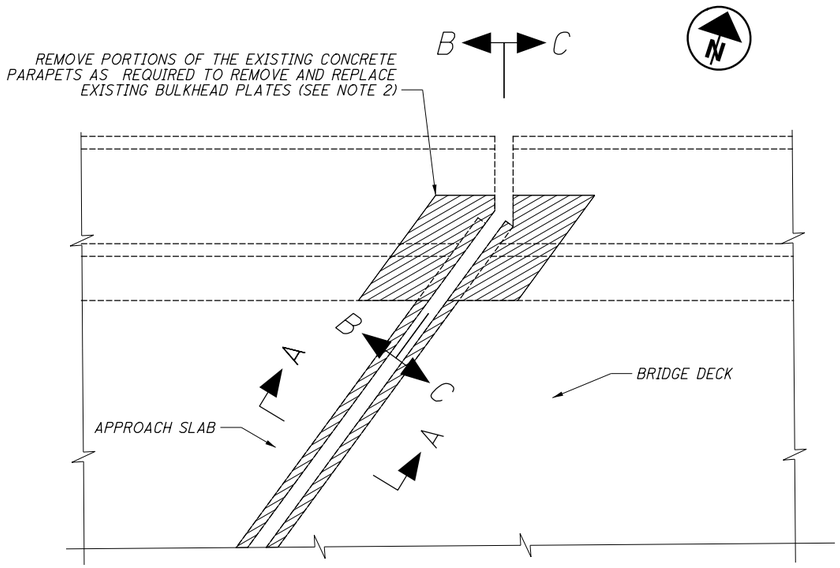
HAM-71-0875
KENNEDY AVE OVER IR-71

HAM-IR71-8.42
PID No. 91826

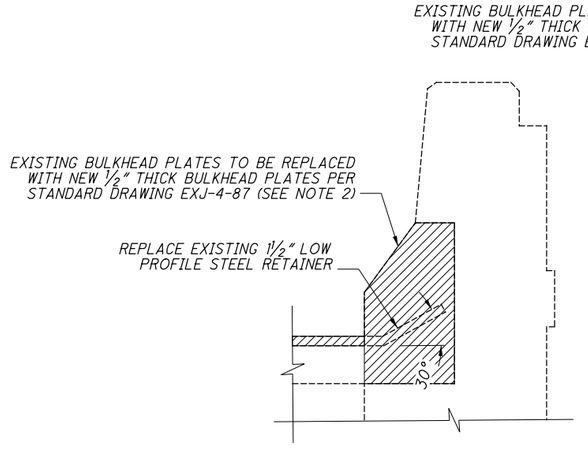
5 / 9

348
441

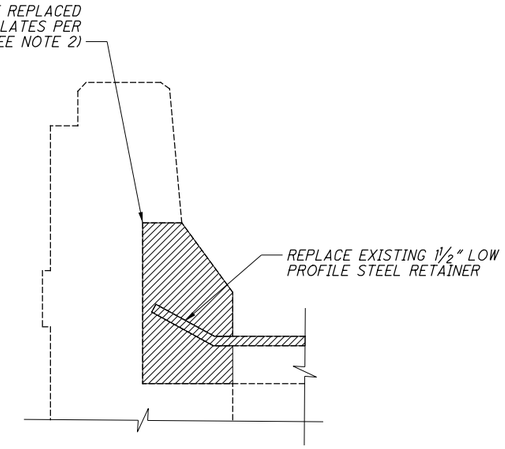
P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_SR001.dgn Sheet 3/2/2018 1:00:02 PM chen



EXPANSION JOINT PLAN

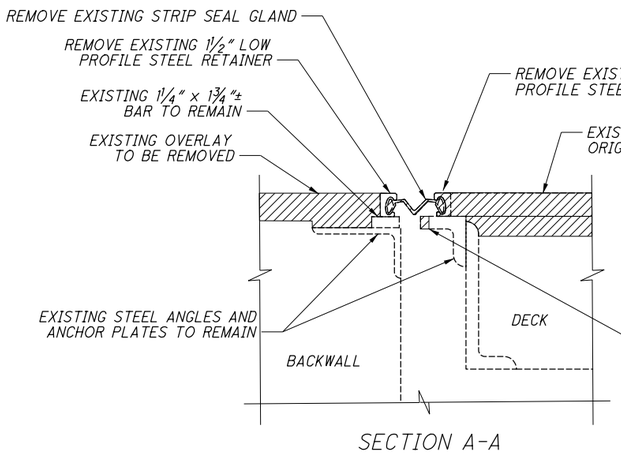


SECTION B-B

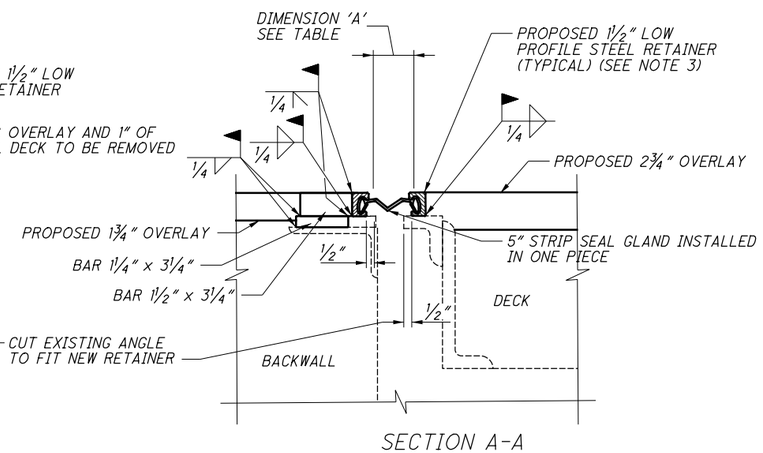


SECTION C-C

EXPANSION JOINT TABLE - DIMENSION A		
TEMPERATURE	REAR ABUT.	FWD. ABUT.
30°	3 ½"	3 ¼"
40°	3 7/16"	3 3/16"
50°	3 5/16"	3 3/16"
60°	3 ¼"	3 1/8"
70°	3 3/16"	3 1/16"
80°	3 1/16"	3 1/16"
90°	3 "	3 "



SECTION A-A
REMOVAL DETAIL



SECTION A-A
PROPOSED DETAIL

LEGEND:

= APPROXIMATE LIMITS OF REMOVAL AND REPLACEMENT

NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING RETAINERS AND DECK ANGLE AND GRIND EXISTING WELDS SMOOTH AND FLUSH WITH SURROUNDING SURFACE. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO REMOVE PORTIONS OF THE EXISTING EXPANSION JOINTS SHALL BE INCLUDED WITH THE UNIT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN. /1
2. CONTRACTOR SHALL REMOVE PORTIONS OF THE EXISTING CONCRETE PARAPETS AS REQUIRED TO REMOVE AND REPLACE EXISTING ½" THICK BULKHEAD PLATES AND STRIP SEAL RETAINERS IN THE PARAPETS. REMOVE CONCRETE AS REQUIRED TO PROVIDE 2" CLEAR FROM STUD ANCHORS. BEND AND TRIM EXISTING REINFORCING STEEL TO MAINTAIN 2" CLEAR. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO REMOVE EXISTING CONCRETE AND ½" BULKHEAD PLATES SHALL BE INCLUDED WITH ITEM 202- PORTIONS OF STRUCTURE REMOVED, OVER 20 FT. SPAN, AS PER PAN.
3. CONTRACTOR SHALL FIELD CUT, WELD AND BEND PROPOSED STRIP SEAL RETAINERS TO FIT EXISTING JOINTS, EXCEPT FOR THE UPTURNS AT PARAPETS WHICH SHALL BE SHOP FABRICATED. STRIP SEAL JOINTS SHALL BE REMOVED AND REPLACED WITHIN MAINTENANCE OF TRAFFIC PHASING. COST FOR ALL LABOR MATERIALS AND EQUIPMENT FOR INSTALLING THE REPLACEMENT STRIP SEAL JOINTS SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN.
4. FOR ADDITIONAL STRIP SEAL DETAILS AND NOTES SEE STANDARD DRAWING EXJ-4-87.

/1 REVISED 2-28-2018

DESIGN AGENCY
BURGESS & NIPLE
312 PLUM ST. CINCINNATI OH

DESIGNED	DRAWN	REVIEWED	DATE
SJA	SJA	DWL	2/20/2017
CHECKED	REVISED	STRUCTURE FILE NUMBER	
XAC		3115313/3115321	

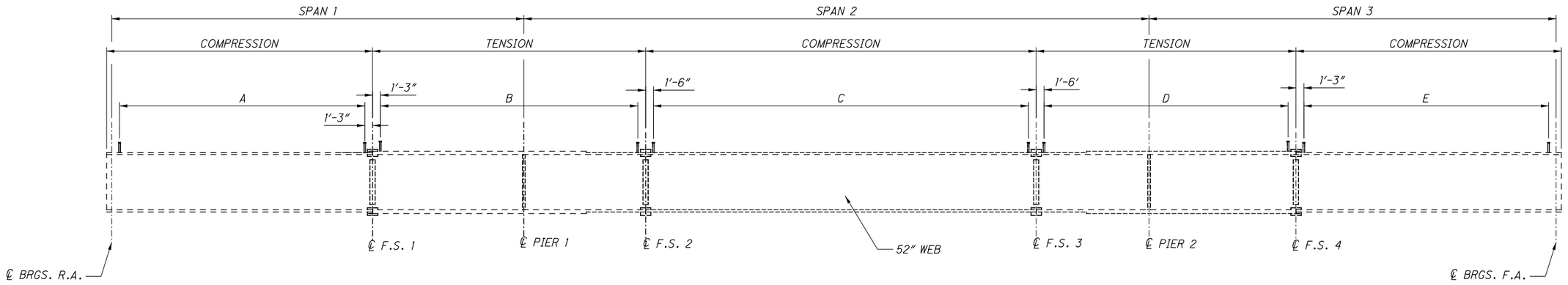
EXPANSION JOINT DETAILS
HAM-71-0970L/R
IR-71 OVER RED BANK ROAD

HAM-IR71-8.42
PID No. 91826

7 / 7

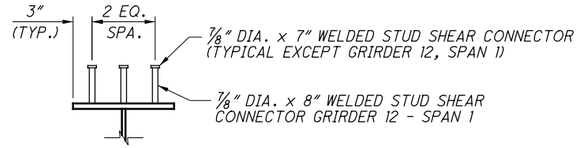
359
441

P:\PR54704\HAM\91826\Design\Structures\HAM071_0970L\Sheets\071_0970L_SX001.dgn Sheet 2/28/2018 8:28:06 AM chen



GIRDER ELEVATION - LEFT BRIDGE

SHEAR CONNECTOR SPACING					
GIRDER	A	B	C	D	E
G18	42 SPA @ 14" (MAX.) = 49'-0"	20 SPA @ 24" (MAX.) = 39'-9"	36 SPA @ 21" (MAX.) = 63'-1"	24 SPA @ 20" (MAX.) = 39'-0"	47 SPA @ 13" (MAX.) = 50'-4"
G17	42 SPA @ 14" (MAX.) = 49'-0"	30 SPA @ 16" (MAX.) = 39'-9"	49 SPA @ 16" (MAX.) = 64'-3"	30 SPA @ 16" (MAX.) = 36'-6"	44 SPA @ 13" (MAX.) = 50'-10"
G16	42 SPA @ 14" (MAX.) = 49'-0"	30 SPA @ 16" (MAX.) = 39'-9"	49 SPA @ 16" (MAX.) = 64'-3"	30 SPA @ 16" (MAX.) = 39'-6"	44 SPA @ 13" (MAX.) = 50'-10"
G15	42 SPA @ 14" (MAX.) = 49'-0"	30 SPA @ 16" (MAX.) = 39'-9"	49 SPA @ 16" (MAX.) = 64'-3"	30 SPA @ 16" (MAX.) = 39'-6"	44 SPA @ 13" (MAX.) = 50'-10"
G14	42 SPA @ 14" (MAX.) = 49'-0"	30 SPA @ 16" (MAX.) = 39'-9"	49 SPA @ 16" (MAX.) = 64'-3"	30 SPA @ 16" (MAX.) = 39'-6"	44 SPA @ 13" (MAX.) = 50'-10"
G13	42 SPA @ 14" (MAX.) = 49'-0"	30 SPA @ 16" (MAX.) = 39'-9"	49 SPA @ 16" (MAX.) = 64'-3"	30 SPA @ 16" (MAX.) = 39'-6"	44 SPA @ 13" (MAX.) = 50'-10"
G12	43 SPA @ 14" (MAX.) = 50'-3"	21 SPA @ 24" (MAX.) = 40'-10"	37 SPA @ 21" (MAX.) = 64'-3"	24 SPA @ 20" (MAX.) = 39'-6"	47 SPA @ 13" (MAX.) = 50'-10"



GIRDER SHEAR CONNECTOR DETAIL

LEGEND:

BRGS. = BEARINGS
F.S. = FIELD SPLICE
G# = GIRDER DESIGNATION
R.A. = REAR ABUTMENT
F.A. = FORWARD ABUTMENT

NOTES:

1. ALL DIMENSIONS ARE HORIZONTAL AND REQUIRE ADJUSTMENT FOR CAMBER AND FINISHED GRADE.
2. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE GIRDER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 5/16".
3. INTERMEDIATE AND CROSSFRAME STIFFENERS NOT SHOWN IN ELEVATION. SEE FRAMING PLAN FOR LOCATIONS.
4. ADJUST SHEAR CONNECTOR SPACING LOCALLY AS REQUIRED TO CLEAR BOLTED FLANGE SPLICES.
5. TEMPORARY DECK SLAB SUPPORTS:

   PRIOR TO DECK SLAB REMOVALS, TEMPORARY DECK SLAB SUPPORTS SHALL BE FURNISHED AND INSTALLED AS SHOWN ON THE PLANS. HIGH STRENGTH BOLTS SHALL BE FULLY TIGHTENED.

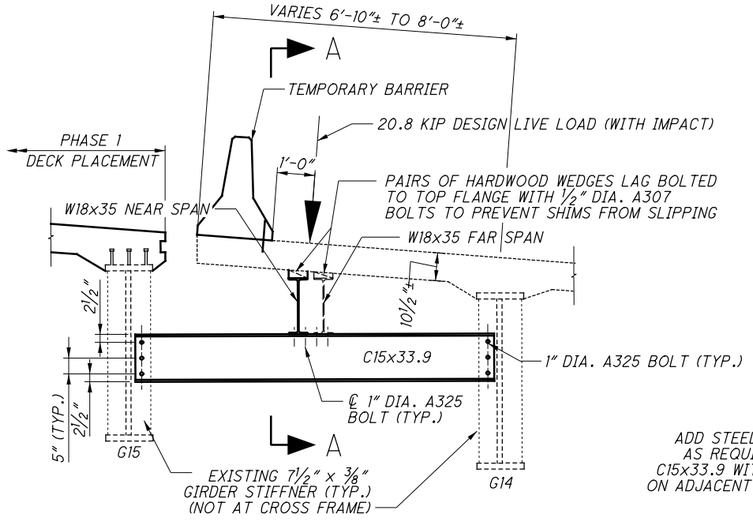
   MATERIALS:
   STEEL SHALL BE ASTM A709, GRADE 50. USED STRUCTURAL STEEL IN GOOD CONDITION MAY BE PROVIDED. HIGH STRENGTH BOLTS SHALL BE NEW 1" DIAMETER ASTM A325.

   HARDWOOD WEDGES:
   3-INCH WIDE OF HARDWOOD WEDGES SHALL BE PROVIDED AS PART OF THE TEMPORARY DECK SLAB SUPPORTS. THESE WEDGES SHALL BE INSTALLED TIGHT PRIOR TO PHASE 1 DECK REMOVAL. WEDGES SHALL BE USED IN PAIRS.

   TEMPORARY DECK SLAB SUPPORT REMOVAL:
   TEMPORARY DECK SLAB SUPPORT SHALL REMAIN UNTIL THE EXISTING PHASE 2 DECK IS NO LONGER NEEDED TO SUPPORT TRAFFIC.

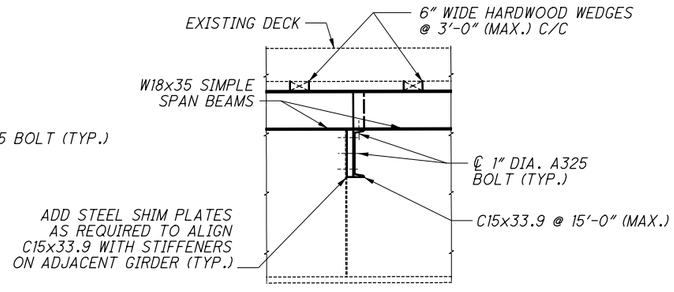
   OPTIONAL DESIGN:
   IN LIEU OF THE TEMPORARY DECK SLAB SUPPORT DESIGN SPECIFIED BY THESE PLANS, THE CONTRACTOR HAS THE OPTION OF PROVIDING ANOTHER SYSTEM, PROVIDED THAT SUCH SYSTEM IS DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND IS APPROVED BY THE DIRECTOR PRIOR TO ITS FABRICATION AND INSTALLATION.
   ANY CONTRACTOR ELECTED CHANGES TO THE PLAN DETAILED SHORING WILL BE TREATED AS A VALUE ENGINEERING CHANGE PROPOSAL.

   PAYMENT:
   THE COST OF PROVIDING, MAINTAINING AND REMOVING TEMPORARY DECK SLAB SUPPORT SHALL BE INCLUDED IN THE LUMP SUM ITEM 202 - PORTIONS OF STRUCTURE REMOVED FOR PAYMENT.



TEMPORARY DECK SLAB SUPPORT DETAIL

(SEE NOTE 5)



SECTION A-A

1 REVISED 3-2-2018

DESIGN AGENCY
BURGESS & NIPLE
312 PLUM ST. CINCINNATI OH

DESIGNED SJA | DRAWN SJA | REVIEWED DWL | DATE 2/20/2017
CHECKED XAC | REVISED | STRUCTURE FILE NUMBER 3106888

GIRDER DETAILS - LEFT BRIDGE
HAM-71-1068L
IR-71 OVER STEWART ROAD

HAM-IR71-8.42
PID No. 91826

24 / 57

391
441

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L\Sheets\071_1068L_SS004.dgn Sheet 3/2/2018 12:13:40 PM chen