ATB - Main & W 48th St Signal NS
230074 PID - 113599
Dist 4 2/9/2023

Contract proposals are available @www.dot.state.oh.us

ATB MAIN & W 48TH ST.

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 10/27/2022 TIME: 7:50:25 AM USER: 1426egd
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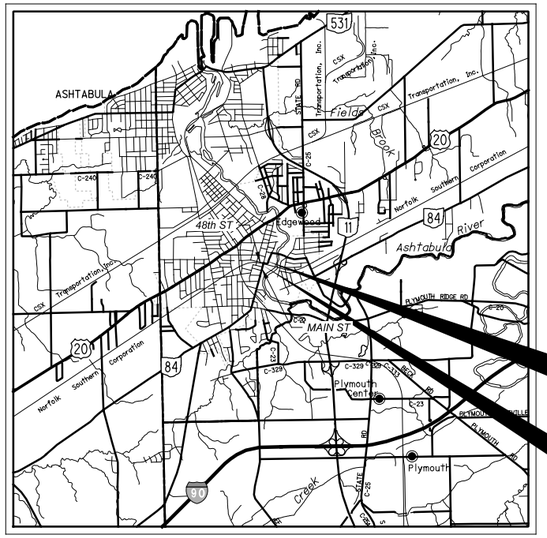
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

ATB MAIN & W 48TH ST.

CITY OF ASHTABULA

ASHTABULA COUNTY



END PROJECT:
MAIN STREET
STA. 32+29.68

BEGIN PROJECT:
MAIN STREET
STA. 31+52.21

LOCATION MAP

LATITUDE: 41°51'48" LONGITUDE: 80°46'59"

N

PORTION TO BE IMPROVED		
INTERSTATE HIGHWAY		
FEDERAL ROUTES		
STATE ROUTES		
COUNTY & TOWNSHIP ROADS		
OTHER ROADS		

DESIGN DESIGNATION

CURRENT ADT (20)	*N/A*
DESIGN YEAR ADT (20)	*N/A*
DESIGN HOURLY VOLUME (20)	*N/A*
DIRECTIONAL DISTRIBUTION	*N/A*
TRUCKS (24 HOUR B&C)	*N/A*
DESIGN SPEED	*25 MPH*
LEGAL SPEED	*25 MPH*

DESIGN FUNCTIONAL CLASSIFICATION:
MINOR ARTERIAL (URBAN)
NHS PROJECT — *NO*

DESIGN EXCEPTIONS

NONE

ADA DESIGN WAIVERS

NONE

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig
OHIO811.org Before You Dig
OHIO811, 8-1-1, or 1-800-362-2764
(Non members must be called directly)

PLAN PREPARED BY:
MEAD & HUNT
4700 LAKEHURST CT., SUITE 110
COLUMBUS, OH, 43016

ENGINEER'S SEAL:

STATE OF OHIO
DEBORAH BOOTH WEAVER
E-58498
REGISTERED
PROFESSIONAL ENGINEER

SIGNED:
DATE: 08/26/2022

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FEDERAL PROJECT NUMBER

E201047

RAILROAD INVOLVEMENT

NORFOLK SOUTHERN RAILROAD - DOT# 471982Y

PROJECT DESCRIPTION

UPGRADE THE TRAFFIC SIGNAL AT MAIN AVE. & W. 48TH/ COLLINS BLVD. FOR RAILROAD PREEMPTION AND INTERCONNECTION WITH NORFOLK SOUTHERN GRADE CROSSING DOT#471982Y INSTALLATION WILL INCLUDE ADA AND MUTCD COMPLIANCE.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	*0.1 ACRES*
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	*0.5 ACRES*
NOTICE OF INTENT EARTH DISTURBED AREA:	*N/A (NOI NOT REQUIRED)**

**ROUTINE MAINTENANCE PROJECT*

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS, CHANGES LISTED IN THE PROPOSAL, AND THE SUPPLEMENTAL SPECIFICATION 800 VERSION INDICATED ON THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

DISTRICT DEPUTY DIRECTOR

DIRECTOR, DEPARTMENT OF TRANSPORTATION

** SEE PROPOSAL*

STANDARD CONSTRUCTION DRAWINGS								*SUPPLEMENTAL SPECIFICATIONS*		*SPECIAL PROVISIONS*
BP-2.5	*1/21/22*	*HL-30.21*	*4/17/20*	*TC-22.10*	*4/17/20*			*800-2019*	*	
BP-3.1	*1/21/22*	*HL-30.22*	*1/15/21*	*TC-22.20*	*1/17/14*			*809*	*10/21/22*	
BP-5.1	*7/15/22*	*HL-40.10*	*7/17/20*	*TC-41.20*	*10/18/13*			*813*	*10/19/18*	
BP-7.1	*1/21/22*	*HL-40.20*	*7/15/22*	*TC-41.41*	*7/19/19*			*819*	*1/17/20*	
		HL-60.11	*7/21/17*	*TC-42.20*	*10/18/13*			*825*	*1/17/20*	
DM-4.3	*1/15/16*	*HL-60.31*	*1/17/20*	*TC-52.20*	*1/15/21*			*828*	*1/19/18*	
DM-4.4	*1/15/16*			*TC-71.10*	*7/15/22*			*832*	*7/15/22*	
		MT-97.10	*4/19/19*	*TC-74.10*	*1/21/22*			*909*	*10/21/22*	
MGS-1.1	*7/16/21*	*MT-97.12*	*1/20/17*	*TC-81.22*	*7/15/22*			*913*	*4/16/21*	
MGS-2.1	*1/19/18*	*MT-101.90*	*7/17/20*	*TC-83.10*	*1/17/20*			*919*	*1/17/20*	
MGS-4.3	*1/18/13*	*MT-105.10*	*1/17/20*	*TC-83.20*	*7/15/22*			*928*	*1/19/18*	
MGS-5.3	*7/15/16*	*MT-110.10*	*7/19/13*	*TC-85.10*	*10/21/22*			*929*	*1/20/17*	
				TC-85.20	*7/20/18*					
HL-10.11	*7/15/22*	*TC-12.31*	*4/15/22*	*TC-86.10*	*7/15/22*					
HL-10.12	*1/20/17*	*TC-16.22*	*7/16/21*							
HL-30.11	*1/15/21*	*TC-21.21*	*7/15/22*							

TITLE SHEET

DESIGN AGENCY Mead & Hunt
CLIENT

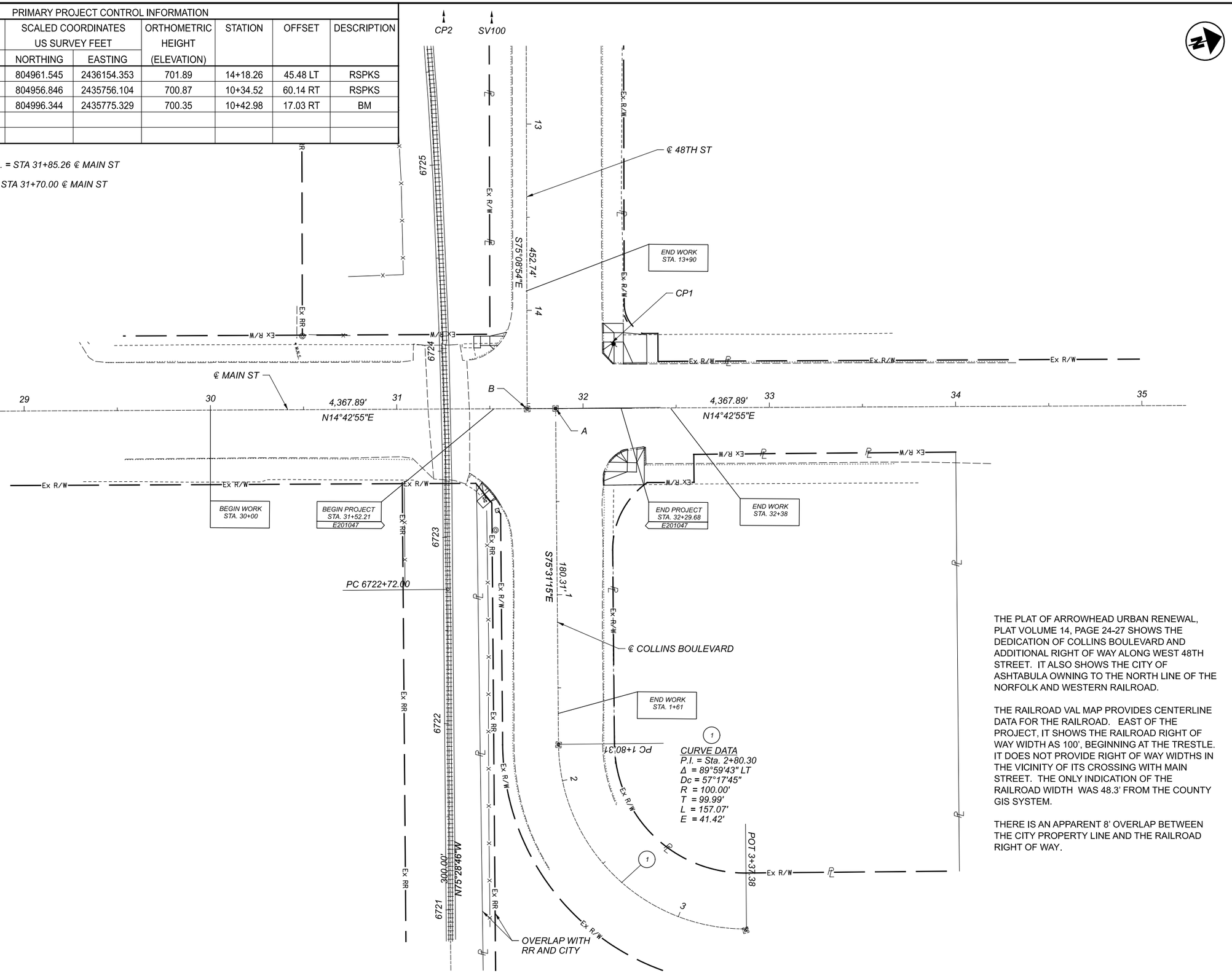
DESIGNER	DLW
REVIEWER	SJS 07/06/22
PROJECT ID	113599
SHEET	P.1
TOTAL	22

ATB MAIN & W 48TH ST.

PRIMARY PROJECT CONTROL INFORMATION								
POINT NUMBER	GRID COORDINATES US SURVEY FEET		SCALED COORDINATES US SURVEY FEET		ORTHOMETRIC HEIGHT (ELEVATION)	STATION	OFFSET	DESCRIPTION
	NORTHING	EASTING	NORTHING	EASTING				
CP1	804967.561	2436172.561	804961.545	2436154.353	701.89	14+18.26	45.48 LT	RSPKS
CP2	804962.862	2435774.309	804956.846	2435756.104	700.87	10+34.52	60.14 RT	RSPKS
SV100	805002.360	2435793.534	804996.344	2435775.329	700.35	10+42.98	17.03 RT	BM

A: POT STA. 0+00.00 ℄ COLLINS BLVD. = STA 31+85.26 ℄ MAIN ST

B: POT STA. 14+52.74 ℄ W 48TH ST. = STA 31+70.00 ℄ MAIN ST



THE PLAT OF ARROWHEAD URBAN RENEWAL, PLAT VOLUME 14, PAGE 24-27 SHOWS THE DEDICATION OF COLLINS BOULEVARD AND ADDITIONAL RIGHT OF WAY ALONG WEST 48TH STREET. IT ALSO SHOWS THE CITY OF ASHTABULA OWNING TO THE NORTH LINE OF THE NORFOLK AND WESTERN RAILROAD.

THE RAILROAD VAL MAP PROVIDES CENTERLINE DATA FOR THE RAILROAD. EAST OF THE PROJECT, IT SHOWS THE RAILROAD RIGHT OF WAY WIDTH AS 100', BEGINNING AT THE TRESTLE. IT DOES NOT PROVIDE RIGHT OF WAY WIDTHS IN THE VICINITY OF ITS CROSSING WITH MAIN STREET. THE ONLY INDICATION OF THE RAILROAD WIDTH WAS 48.3' FROM THE COUNTY GIS SYSTEM.

THERE IS AN APPARENT 8' OVERLAP BETWEEN THE CITY PROPERTY LINE AND THE RAILROAD RIGHT OF WAY.

SCHEMATIC PLAN

DESIGN AGENCY Mead & Hunt

CLIENT

DESIGNER	DAD
REVIEWER	DLW 07/06/22
PROJECT ID	113599
SHEET	P.2
TOTAL	22

MODEL: Sheet PAPERSIZE: 34x22 (In.) DATE: 10/27/2022 TIME: 7:23:56 AM USER: 1426egd
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WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

THE CONTRACTOR SHALL TRIM THE EXISTING TREES LOCATED IN THE NORTHEAST CORNER OF THE INTERSECTION. THIS INCLUDES ALL TREES WITHIN 150 FEET OF THE CORNER OF THE INTERSECTION AND ONLY FOR SECTIONS OF BRANCHES EXTENDING INTO THE EXISTING RIGHT-OF-WAY. THE TREES SHALL BE TRIMMED BACK SO THAT THEY DO NOT BLOCK THE VIEW OF THE INTERSECTION AND OR PEDESTRIANS USING THE SIDEWALK. THE LUMP SUM BID WORK DESCRIBED ABOVE SHALL BE INCLUDED IN ITEM 201, CLEARING AND GRUBBING. A QUANTITY HAS BEEN CARRIED TO THE SUB SUMMARY SHEET 8.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

GAS: DOMINION EAST OHIO 320 SPRINGSIDE DRIVE FAIRLAWN, OH 44333 PH: 330-664-2494	ELECTRIC: ILLUMINATING COMPANY 6896 MILLER ROAD BRECKSVILLE, OH 44141 PH: 440-717-6845
WATER: AQUA OHIO 8644 STATION STREET MENTOR, OH 44060 PH: 440-255-3984	TELECOM: WINDSTREAM WESTERN RESERVE 1111 SUPERIOR AVE., SUITE 500 CLEVELAND, OH 44114 PH: 440-274-0209
SEWER: CITY OF ASHTABULA 501 WEST 24TH STREET ASHTABULA, OH 44004 PH: 440-993-8101	

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

THE DISTRICT FOUR UTILITY COORDINATOR IS MATTHEW STEELE. THE CONTACT NUMBER AT DISTRICT FOUR IS 330-786-4832.

UNDERDRAINS FOR PULLBOXES

REFERENCE TRAFFIC SCD HL-30.11 FOR DETAILS ABOUT DRAINING PULLBOXES. UNDERDRAINS FOR PULLBOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED 20 FEET. THE FOLLOWING ESTIMATED QUANTITIES ARE CARRIED TO THE SUB SUMMARY SHEET 9 FOR THIS PURPOSE:

ITEM 611 4" CONDUIT, TYPE E 20 FT.
ITEM 611 PRECAST REINFORCED CONCRETE OUTLET 1 EACH

ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), AS PER PLAN, PG64-22

DO NOT USE COARSE AGGREGATE FROM A SOURCE DESIGNATED 'SR' OR 'SRH' ACCORDING TO THE OFFICE OF MATERIALS MANAGEMENT (OMM) IN ANY JOB MIX FORMULA (JMF) FOR THIS ITEM.

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. REFER TO THIS SHEET FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION. USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS

VERTICAL POSITIONING
ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID18

HORIZONTAL POSITIONING
REFERENCE FRAME: NAD83 (2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC 2 PARALLEL
COORDINATE SYSTEM: OHIO STATE PLANE NORTH ZONE
COMBINED SCALE FACTOR: 1.000007474
PROJECT ADJUSTMENT FACTOR: 0.999992526
ORIGIN OF COORDINATE
SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, TOPSOIL 1 CU. YD.

659, SEEDING AND MULCHING 2 SQ. YD.

659, COMMERCIAL FERTILIZER 0.01 TON

659, WATER 0.1 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS. THE SEEDING AND MULCHING QUANTITIES SHOWN ABOVE HAVE BEEN CARRIED TO THE SUB SUMMARY SHEET 9.

ITEM SPECIAL – SURVEY CONTROL VERIFICATION

THE CONTRACTOR SHALL PERFORM THIS WORK TO VERIFY THE PROVIDED SURVEY CONTROL. THE CONTRACTOR WILL PERFORM THE VERIFICATION USING ONE OF THE TWO METHODS BELOW DEPENDENT UPON THE CONTRACTOR'S CHOSEN MEANS OF SURVEY CONTROL TO BE USED ON THE PROJECT. THE WORK SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF AN OHIO LICENSED SURVEYOR.

1) IF USING GPS DEVICES TO ESTABLISH AND OR PROVIDE SUPPLEMENTAL HORIZONTAL AND VERTICAL SURVEY CONTROL

   a. LOCATE VERTICAL CONTROL POINTS PROVIDED IN THE PLANS AND PERFORM A DIFFERENTIAL LEVEL CIRCUIT.

   b. PERFORM A SITE CALIBRATION UTILIZING THE AVAILABLE HORIZONTAL AND VERTICAL CONTROL POINTS PROVIDED IN THE PLAN.

   c. PROVIDE A REPORT, SIGNED BY AN OHIO LICENSED SURVEYOR, TO THE PROJECT ENGINEER COMPARING THE OBSERVED DATA TO THE PLAN DATA ALONG WITH A NARRATIVE DETAILING ANY DISCREPANCIES FOUND.

2) IF USING CONVENTIONAL SURVEY INSTRUMENTATION TO ESTABLISH AND OR PROVIDE SUPPLEMENTAL HORIZONTAL AND VERTICAL SURVEY CONTROL.

   a. LOCATE VERTICAL CONTROL POINTS PROVIDED IN THE PLANS AND PERFORM A DIFFERENTIAL LEVEL CIRCUIT.

   b. LOCATE AND OBSERVE ANGLE AND DISTANCE TO ALL AVAILABLE HORIZONTAL CONTROL POINTS PROVIDE IN THE PLAN.

   c. PROVIDE A REPORT, SIGNED BY AN OHIO LICENSED SURVEYOR, TO THE PROJECT ENGINEER COMPARING THE OBSERVED DATA TO THE PLAN DATA ALONG WITH A NARRATIVE DETAILING ANY DISCREPANCIES FOUND.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID ITEM.

ITEM 690 - ITEM SPECIAL - SURVEY CONTROL VERIFICATION LS

625, NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN (LIGHTING)

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED.

THIS ITEM INCLUDES THE REMOVAL OF THE EXISTING MESSENGER WIRE, AND DISTRIBUTION CABLES. INCLUDING THE INSTALLATION OF NEW DISTRIBUTION CABLES, THE NECESSARY SPLICES TO THE EXISTING DISTRIBUTION CABLES AND POLE AND BRACKET CABLES.

INSTALL A NEW MESSENGER WIRE TO BE PAID SEPARATELY. REFER TO PLAN NOTE LOCATED ON THE SIGNAL PLAN SHEET FOR THE LOCATION OF THE EXISTING AND PROPOSED CABLES.

THE COMBINATION OF THESE TWO ITEMS SHALL CONSTITUTE ALL THE NECESSARY WORK AND MATERIALS TO RELOCATE THE EXISTING LIGHTING SYSTEM AND BRING BACK INTO SERVICE.

PAYMENT SHALL BE PER LINEAR FOOT OF NEW DISTRIBUTION CABLE INSTALLED AND ASSUMES THAT 2 CABLES ARE NEEDED TO COMPLETE THIS WORK.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

M446: TIME LIMITATION, CURB RAMP

THE MAXIMUM ALLOWABLE TIME FOR THE CONTRACTOR TO HAVE AN INDIVIDUAL CURB RAMP AND ASSOCIATED SIDEWALK LEADING INTO THE CURB RAMP OUT OF SERVICE FOR THE REMOVAL AND REPLACEMENT SHALL BE 14 CONSECUTIVE CALENDAR DAYS (THE TIME PERIOD INCLUDES ALL WORK AND CURING TIME PERIOD.)

AT THE CONCLUSION OF CONSTRUCTING OF THE CURB RAMP AND PRIOR TO OPENING TO PEDESTRIAN TRAFFIC THE CONTRACTOR SHALL ENSURE THAT THE REQUIREMENTS OF STANDARD CONSTRUCTION DRAWING BP-7.1 ARE MET. THE CONTRACTOR SHALL USE ASPHALT AS A WEDGE OR SUBMIT ANOTHER METHOD APPROVED BY THE ENGINEER, TO ENSURE THE TRANSITION FROM THE CURB RAMP TO THE ROADWAY ARE PER STANDARD CONSTRUCTION DRAWING BP-7.1. ALL COSTS TO PERFORM THIS WORK SHALL BE INCIDENTAL TO THE ASSOCIATED PAY ITEMS FOR THE INSTALLATION OF THE CURB RAMP.

SHOULD THE CONTRACTOR FAIL TO MEET THIS REQUIREMENT, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF $1000 PER DAY THAT THE AFFECTED CURB RAMP REMAINS OUT OF SERVICE BEYOND 14 CONSECUTIVE CALENDAR DAYS.

DESIGN AGENCY
Mead & Hunt
CLIENT
DESIGNER DLW
REVIEWER SJS 07/06/22
PROJECT ID 113599

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MAINTENANCE OF TRAFFIC SIGNAL INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

NEW SIGNAL INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE FOR POLICE SERVICES AND MAINTENANCE SERVICES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

MAINTENANCE OF TRAFFIC SIGNAL INSTALLATION (CONT.)

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 6 HOURS AND SHALL NOT INCLUDE THE HOURS OF 7:00 TO 9:00 AM AND 3:00 TO 6:00 PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE. COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;

2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;

3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;

4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;

5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 614, MAINTAINING TRAFFIC (AT ALL TIMES)

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT AND FLAGGER CONTROL (SCD MT-97.10).
THE CONTRACTOR SHALL INFORM THE DISTRICT OFFICE AT (330) 786-2208, AND THE CITY OF ASHTABULA AT (440) 992-7118, EIGHTEEN (18) DAYS PRIOR TO THE BEGINNING OF WORK.

LANE RESTRICTIONS OR LANE REDUCTIONS SHALL NOT BE PERMITTED AFTER NORMAL WORKING HOURS. NORMAL WORKING HOURS SHALL BE THOSE HOURS DURING WHICH THE CONTRACTOR HAS A FULL COMPLEMENT OF EMPLOYEES AND EQUIPMENT ACTIVELY REMOVING AND /OR PLACING PAVEMENT MATERIALS.

IF IT IS NECESSARY TO STOP ALL TRAFFIC FOR THE ERECTION OF THE MAST ARMS, THE WORK SHALL BE SO ARRANGED THAT THE STOPPAGE IS LESS THAN TEN (10) MINUTES IN ANY ONE (1) THIRTY (30) MINUTE PERIOD. NO STOPAGE OF TRAFFIC SHALL OCCUR FOR THE ERECTION OF SIGNAL SUPPORTS, HANGING SIGNAL HEADS, WITHOUT A LAW ENFORCEMENT OFFICER WITH A PATROL CAR AT THE SITE FOR ASSISTANCE IN CONTROLLING TRAFFIC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE SERVICES AND SCHEDULING OF SAID LAW ENFORCEMENT OFFICER WITH PATROL CAR.

THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL FLAGS, FLAGGERS, WATCHERS, SIGNS, SIGN SUPPORTS AND INCIDENTALS RELATED TO TRAFFIC CONTROL.

SIGNS FURNISHED SHALL BE IN NEW OR LIKE NEW CONDITIONS. LIKE NEW SIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE PROJECT ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES FOR PROVIDING AND MAINTAINING LIGHTS, AND SIGNS FOR THE MAINTENANCE OF TRAFFIC AND SAFETY OF HIS/HER WORK AT THE LOCATIONS SHOWN ON THESE PLANS AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL TIME IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MT-110.10.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DETERMINED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 10 CY

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 PLANS.

WINDOW CONTRACT TABLE

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

DESCRIPTION OF CRITICAL WORK	CALENDAR DAYS TO COMPLETE	DISINCENTIVE $ PER DAY	WORK WINDOW	
			START	END
ALL SURFACE WORK ON PROJECT	30 DAYS	$400	5/1/2023	5/30/2024
ALL SUBSURFACE WORK ON PROJECT	30 DAYS	$400	5/1/2023	5/30/2024

THE CONSTRUCTION COMPLETION DATE IS 5/30/2024.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION TIME TABLE

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

ATB MAIN & W 48TH ST.

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 10/27/2022 TIME: 7:23:58 AM USER: I426egd
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ATB-MAIN & W. 48TH STREET
MAINTENANCE OF TRAFFIC NOTES

DESIGN AGENCY
Mead & Hunt
CLIENT

DESIGNER
DLW
REVIEWER
SJS 07/06/22
PROJECT ID
113599
SHEET P.4 TOTAL 22

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN A NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS (CONTINUED)

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING THE SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 48 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE. THE QUANTITY HAS BEEN CARRIED TO THE SUB SUMMARY SHEET 9.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&MS 614.03.

THE PROBABLE PCMS LOCATIONS AND WORK LIMITS FOR THOSE LOCATIONS ARE SHOWN ON SHEET(S) 12 OF THE PLAN. PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC AND SHALL DISPLAY ONE OR MORE TYPE G YELLOW REFECTIVE SHEETING SURFACES OF 9" BY 15" MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

(THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGEABLE MESSAGES WILL BE IMPLEMENTED WITHIN 12 HOURS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.)

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN (CONTINUED)

(THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL (IN ACTIVE CELLULAR PHONE AREAS) ALLOW REMOTE SIGN ACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA INPUT DEVICE (LAPTOP COMPUTER PLUS MODEM OR EQUIVALENT) SHALL BE FURNISHED FOR USE BY THE DISTRICT TRAFFIC ENGINEER, OR EQUIVALENT, AND SHALL BE INSURED AGAINST THEFT.) THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE, AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 16 SIGN MONTH(S) ASSUMING 4 PCMS SIGN(S) FOR 4 MONTH(S). A QUANTITIY OF 16 SNMT HAS BEEN CARRIED TO THE SUB SUMMARY SHEET 9

ATB-MAIN & W. 48TH STREET
MAINTENANCE OF TRAFFIC NOTES

DESIGN AGENCY: Mead & Hunt
CLIENT
DESIGNER: DLW
REVIEWER: SJS 07/06/22
PROJECT ID: 113599
SHEET: P.5 TOTAL: 22

ATB MAIN & W 48TH ST.

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 10/27/2022 TIME: 7:23:59 AM USER: l426egd
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SHEET NUM.											PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	3		8		9		10				01/S5K/22								
																		ROADWAY	
			LS								LS			201	11000	LS		CLEARING AND GRUBBING	3
			22								22			202	23000	22	SY	PAVEMENT REMOVED	
			840								840			202	30000	840	SF	WALK REMOVED	
			113								113			202	32000	113	FT	CURB REMOVED	
			93								93			202	38000	93	FT	GUARDRAIL REMOVED	
			1								1			202	42040	1	EACH	ANCHOR ASSEMBLY REMOVED, TYPE T	
			22								22			204	10000	22	SY	SUBGRADE COMPACTION	
			25								25			606	15050	25	FT	GUARDRAIL, TYPE MGS	
			1								1			606	26150	1	EACH	ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350/MASH 2016)	
			411								411			608	10000	411	SF	4" CONCRETE WALK	
			567								567			608	52000	567	SF	CURB RAMP	
	LS										LS			SPECIAL	69098400	LS		SURVEY CONTROL VERIFICATION	3
																		EROSION CONTROL	
					1						1			659	00300	1	CY	TOPSOIL	
					2						2			659	10000	2	SY	SEEDING AND MULCHING	
					0.01						0.01			659	20000	0.01	TON	COMMERCIAL FERTILIZER	
					0.1						0.1			659	35000	0.1	MGAL	WATER	
											2,000			832	30000	2,000	EACH	EROSION CONTROL	
																		DRAINAGE	
					20						20			611	00400	20	FT	4" CONDUIT, TYPE E	
			1								1			611	99654	1	EACH	MANHOLE ADJUSTED TO GRADE	
					1						1			611	99710	1	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																		PAVEMENT	
			7								7			255	10010	7	SY	FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1	
			4								4			301	56000	4	CY	ASPHALT CONCRETE BASE, PG64-22. (449)	
			6								6			304	20000	6	CY	AGGREGATE BASE	
			2								2			407	10000	2	GAL	TACK COAT	
			2								2			441	70101	2	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), AS PER PLAN, PG64-22	3
			26								26			609	26000	26	FT	CURB, TYPE 6	
																		LIGHTING	
							6				6			625	00450	6	EACH	CONNECTION, FUSED PULL APART	
							4				4			625	00480	4	EACH	CONNECTION, UNFUSED PERMANENT	
							1				1			625	18200	1	EACH	BRACKET ARM, 15'	
							1,242				1,242			625	23001	1,242	FT	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN	3
							90				90			625	23410	90	FT	NO. 12 AWG POLE AND BRACKET CABLE	
							1				1			625	26253	1	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, (IES III-M-SC DISTRIBUTION)	16
							1				1			625	34001	1	EACH	POWER SERVICE, AS PER PLAN	16
			3								3			626	00110	3	EACH	**TRAFFIC CONTROL** BARRIER REFLECTOR, TYPE 2, (BIDIRECTIONAL)	
					52						52			630	03100	52	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
					1						1			630	79200	1	EACH	SIGN ATTACHMENT ASSEMBLY, MAST ARM	
					8						8			630	79500	8	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
					30.5						30.5			630	80100	30.5	SF	SIGN, FLAT SHEET	
					4						4			630	80500	4	EACH	SIGN, DOUBLE FACED, STREET NAME	
					7						7			630	84900	7	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
					2						2			630	85000	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	
					3						3			630	86002	3	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
					0.01						0.01			644	00300	0.01	MILE	CENTER LINE	
					75						75			644	00400	75	FT	CHANNELIZING LINE, 8"	
					55						55			644	00500	55	FT	STOP LINE	
					93						93			644	00620	93	FT	CROSSWALK LINE, 12"	
					187						187			644	30000	187	FT	REMOVAL OF PAVEMENT MARKING	
					1						1			644	30020	1	EACH	REMOVAL OF PAVEMENT MARKING	
					0.01						0.01			646	10000	0.01	FT	EDGE LINE, 4"	
					48						48			646	10400	48	FT	STOP LINE	
					236						236			646	10510	236	FT	CROSSWALK LINE, 12"	
					337						337			646	50100	337	FT	REMOVAL OF PAVEMENT MARKING	

ATB MAIN & W 48TH ST.

ATB-MAIN & W. 48TH STREET
GENERAL SUMMARY

DESIGN AGENCY
Mead & Hunt

CLIENT

DESIGNER
DLW

REVIEWER
SJS 07/06/22

PROJECT ID
113599

SHEET P.6 | TOTAL 22

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 10/27/2022 TIME: 12:20:44 PM USER: 1426gd
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SHEET NUM.							PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
3	8	9	10				01/S5K/22						
												TRAFFIC SIGNALS	
			783				783	625	25604	783	FT	CONDUIT, 4", 725.051	
			278				278	625	29400	278	FT	TRENCH IN PAVED AREA	
			4				4	625	30706	4	EACH	PULL BOX, 725.08, 24"	
			3				3	625	32000	3	EACH	GROUND ROD	
			278				278	625	36011	278	FT	UNDERGROUND WARNING/MARKING TAPE, AS PER PLAN	16
			1				1	625	76000	1	EACH	ARC FLASH CALCULATIONS AND LABEL - (SIGNAL CONTROLLER)	
			1				1	632	03200	1	EACH	VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, 3 SECTION, 12" LENS, 1-WAY	
			1				1	632	03204	1	EACH	VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, 5 SECTION, 12" LENS, 1-WAY	
			9				9	632	05006	9	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	
			6				6	632	20731	6	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	15
			2				2	632	20750	2	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON	
			19				19	632	25000	19	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
			6				6	632	25010	6	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
			210				210	632	29900	210	FT	MESSENGER WIRE, 7 STRAND, ¼" DIAMETER WITH ACCESSORIES	
			158				158	632	40500	158	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
			1,915				1,915	632	40700	1,915	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
			2				2	632	64010	2	EACH	SIGNAL SUPPORT FOUNDATION	
			186				186	632	69200	186	FT	POWER CABLE, 2 CONDUCTOR, NO. 4 AWG	
			47				47	632	69900	47	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 4 AWG	
			1				1	632	70000	1	EACH	POWER SERVICE	
			1				1	632	70200	1	EACH	CONDUIT RISER, 1" DIAMETER	
			1				1	632	72130	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 12	
			1				1	632	81700	1	EACH	COMBINATION SIGNAL SUPPORT, MISC.:, SIGNAL SUPPORT TC-12.31, DESIGN 12	15
			1				1	632	90100	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION	
			1				1	633	65511	1	EACH	CABINET, TYPE TS-2, AS PER PLAN	15
			1				1	633	67101	1	EACH	CABINET FOUNDATION, AS PER PLAN	17
			1				1	633	67201	1	EACH	CONTROLLER WORK PAD, AS PER PLAN	17
			1				1	633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	15
			4				4	809	69101	4	EACH	STOP LINE RADAR DETECTION, AS PER PLAN	16
			1				1	809	69123	1	EACH	ATC CONTROLLER, AS PER PLAN, (V6.24)	15
			1				1	819	10000	1	EACH	RAILROAD PREEMPTION INTERFACE, (LOCATE ON LIGHT POLE ADJ. TO CONTROLLER)	15
			1				1	828	00100	1	EACH	LED BLANKOUT SIGN, ("NO LEFT TURN -TRAIN", 30'x24"x5.5")	
			1				1	828	00100	1	EACH	LED BLANKOUT SIGN, ("NO RIGHT TURN -TRAIN", 30"x24"x5.5")	
												MAINTENANCE OF TRAFFIC	
		48					48	614	11110	48	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
		10					10	614	13000	10	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
		16					16	614	18601	16	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	5
												INCIDENTALS	
							LS	614	11000	LS		MAINTAINING TRAFFIC	4
							13	619	16000	13	MNTH	FIELD OFFICE, TYPE A	
							LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
							LS	624	10000	LS		MOBILIZATION	

ATB-MAIN & W 48TH ST.

ATB- MAIN & W. 48TH STREET
GENERAL SUMMARY

DESIGN AGENCY Mead & Hunt

CLIENT

DESIGNER DLW

REVIEWER SJS 07/06/22

PROJECT ID 113599

SHEET P.7 | TOTAL 22

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 10/27/2022 TIME: 11:57:39 AM USER: 426egd
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CURB RAMP SUBSUMMARY

REF NO.	SHEET NO.	STATION TO STATION			201 CLEARING AND GRUBBING	202 PAVEMENT REMOVED	202 WALK REMOVED	202 CURB REMOVED	202 GUARDRAIL REMOVED	202 ANCHOR ASSEMBLY REMOVED, TYPE T	204 SUBGRADE COMPACTION	255 FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1	301 ASPHALT CONCRETE BASE, PG64-22. (449)	304 AGGREGATE BASE	407 TACK COAT	441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1. (449), PG64-22, AS PER PLAN		606 GUARDRAIL, TYPE MGS	606 ANCHOR ASSEMBLY, MGS TYPE E (NCHRP 350/MASH 2016)	608 4" CONCRETE WALK	608 CURB RAMP	609 CURB, TYPE 6		611 MANHOLE ADJUSTED TO GRADE	626 BARRIER REFLECTOR, TYPE 2, (BIDIRECTIONAL)
			TO		LS	SY	SF	FT	FT	EACH	SY	SY	CY	CY	GAL	CY		FT	EACH	SF	SF	FT		EACH	EACH
CR-1	11	14+14.60		32+19.29																	220				
R-1	11	14+07.10		32+36.40		11					11		2	2	1	1								1	
R-2	11	14+07.10		32+34.39			400																		
R-3	11	14+07.10		14+28.14				43																	
C-1	11	32+26.79		32+34.39																			8		
W-1	11	32+10.58		32+21.84																39					
W-2	11	32+21.84		32+34.39																168					
CR-2	11	0+31.54		32+26.20																	216				
R-4	11	32+34.90		0+43.45		11					11		2	2	1	1									
R-5	11	32+32.86		0+41.44			363																		
R-6	11	32+32.86		32+10.87				45																	
C-2	11	0+39.01		0+41.44																			3		
C-3	11	0+21.18		0+30.81																			11		
W-3	11	32+10.74		32+32.95																160					
CR-3	11	31+42.79		0+49.84																	62				
R-7	11	31+48.19		31+42.68			17																		
R-8	11	31+45.35		0+51.69				15																	
R-9	11	31+46.29		0+51.48								4		1											
R-10	11	0+50.05		1+55.00					92.5	1															
C-4	11	0+48.37		0+51.72																			4		
W-4	11	0+40.04		0+49.35																21					
GR-1	11	0+80.00		1+55.00														25	1						3
A-1	11	31+42.79		31+55.06										1											
CR-4	11	31+45.15		14+11.76																	69				
W-5	11	31+45.15		31+41.54																23					
R-11	11	31+54.28		31+41.54			60																		
R-12	11	14+10.46		31+51.78				10																	
R-13	11	14+11.76		31+52.29								3													
	3	GENERAL NOTE QUANTITIES			LS																				
TOTALS CARRIED TO GENERAL SUMMARY					LS	22	840	113	93	1	22	7	4	6	2	2		25	1	411	567	26		1	3

ATB MAIN & W 48TH ST.

MODEL: Sheet PAPERSIZE: 34x22 (In.) DATE: 10/27/2022 TIME: 7:24:01 AM USER: 1426egd
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DESIGN AGENCY Mead & Hunt

CLIENT

DESIGNER ANM

REVIEWER SJS 07/06/22

PROJECT ID 113599

REFERENCE NO.	SHEET NO.	STATION TO STATION	DISTANCE	611 4" CONDUIT, TYPE E FT	611 PRECAST REINFORCED CONCRETE OUTLET EACH	614 LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE HOUR	614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC CY	614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN SNMT	630 GROUND MOUNTED SUPPORT, NO. 3 POST FT	630 SIGN, FLAT SHEET SF	630 SIGN SUPPORT ASSEMBLY, POLE MOUNTED EACH	630 SIGN ATTACHMENT ASSEMBLY, MAST ARM EACH	630 SIGN, DOUBLE FACED, STREET NAME EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	630 REMOVAL OF GROUND MOUNTED SIGN AND STORAGE EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	644 STOP LINE FT	644 CENTER LINE MILE	644 CHANNELIZING LINE, 8" FT	644 CROSSWALK LINE, 12" FT		644 REMOVAL OF PAVEMENT MARKING FT	644 REMOVAL OF PAVEMENT MARKING EACH	646 STOP LINE FT	646 CROSSWALK LINE, 12" FT	646 EDGE LINE, 4" MILE	646 REMOVAL OF PAVEMENT MARKING FT	659 COMMERCIAL FERTILIZER TON	659 TOPSOIL CY	659 SEEDING AND MULCHING SY	659 WATER MGAL
		TO																													
	3	GENERAL NOTE SHEET		20	1																								0.01	1	2	0.1
	4	MOT NOTE SHEET					10																									
	5	MOT NOTE SHEET				48		16																								
PAVEMENT MARKINGS																																
SL-1	13	30+90															26														
SL-2	13	32+38															29														
SL-3	13	13+90																							24						
SL-4	13	00+63																							24						
CL-1	13	30+75	30+90															0.01													
EL-1	13	30+90	01+00																								0.01				
CH-1	13	30+00	30+75																75												
CW-1	13																									109		113			
CW-2	13																		93			106									
CW-3	13																									127		136			
PAVEMENT MARKING REMOVALS																																
	13																					81	1					88			
SIGNING																																
R-1	13	32+40												1																	
R-2	13	32+32												1	2	1															
R-3	13	32+20												1		1															
R-4	13	31+52												2		1															
R-5	13	31+56												2																	
S-3 (R10-11-24)	18	SP-2 MAST ARM								5		1																			
S-4 (R1-5-30)	13	32+40							13	6.25																					
S-5 (R2-1-24)	13	32+32							13	5																					
S-6 (R1-5-30)	13	0+50							13	6.25																					
S-7 (D1-C-VAR)	13	31+52									2		2																		
S-8 (R10-6-24)	13	EX POLE							13	5																					
S-9 (D1-C-VAR)	13	PROP. POLE									2		2																		
PED SIGN R10-2	18									0.75	1																				
										0.75	1																				
										0.75	1																				
										0.75	1																				
TOTALS CARRIED TO GENERAL SUMMARY				20	1	48	10	16	52.0	30.50	8	1	4	7	2	3	55	0.01	75	93		187	1	48	236	0.01	337	0.01	1	2	0.1

ATB MAIN & W 48TH ST.

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ATB-MAIN & W. 48TH STREET
SIGNING & PAVEMENT MARKING SUBSUMMARY

DESIGN AGENCY
Mead & Hunt

CLIENT

DESIGNER
DLW

REVIEWER
SJS 07/06/22

PROJECT ID
113599

SHEET P.9 TOTAL 22

SHEET NO.	LOCATION	DISTANCE	625 CONNECTION, FUSED PULL APART	625 CONNECTION, UNFUSED PERMANENT	625 NO. 4 AWG 600 VOLT DISTRIBUTION CABLE, AS PER PLAN	625 NO. 12 AWG POLE AND BRACKET CABLE	625 BRACKET ARM, 15'	625 LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, (IES III-M-SC DISTRIBUTION)	625 CONDUIT, 4", 725.051	625 PULL BOX, 725.08, 24""	625 TRENCH IN PAVED AREA	625 UNDERGROUND WARNING/MARKING TAPE, AS PER PLAN	625 GROUND ROD	625 ARC FLASH CALCULATIONS AND LABEL - (SIGNAL CONTROLLER)	625 POWER SERVICE, AS PER PLAN	632 POWER SERVICE	632 VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	632 VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, 3 SECTION, 12" LENS, 1-WAY	632 VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, 5 SECTION, 12" LENS, 1-WAY	632 PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	632 ACCESSIBLE PEDESTRIAN PUSHBUTTON	632 COVERING OF VEHICULAR SIGNAL HEAD	632 COVERING OF PEDESTRIAN SIGNAL HEAD	632 MESSENGER WIRE, 7 STRAND, 1/4" DIAMETER WITH ACCESSORIES	632 SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	632 SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	632 POWER CABLE, 2 CONDUCTOR, NO. 4 AWG	632 SERVICE CABLE, 3 CONDUCTOR, NO. 4 AWG	632 SIGNAL SUPPORT FOUNDATION	632 CONDUIT RISER, 1" DIAMETER	632 COMBINATION SIGNAL SUPPORT; MISC.:; SIGNAL SUPPORT TC-12.31, DESIGN 12	632 SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 12	632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION	633 CABINET, TYPE TS-2, AS PER PLAN	633 CABINET FOUNDATION, AS PER PLAN	633 CONTROLLER WORK PAD, AS PER PLAN	633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	809 STOP LINE RADAR DETECTION, AS PER PLAN	809 ATC CONTROLLER, AS PER PLAN , (V6.24)	819 RAILROAD PREEMPTION INTERFACE; (LOCATE ON LIGHT POLE ADJ. TO CONTROLLER)	828 LED BLANKOUT SIGN, ("NO RIGHT TURN -TRAIN", 30"x24"x5.5")	828 LED BLANKOUT SIGN, ("NO LEFT TURN -TRAIN", 30"x24"x5.5")
			EACH	EACH	FT	FT	EACH	EACH	FT	EACH	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
14-17	SIGNAL NOTES															1	1														1											
18	S-1 (R3-2-24) LED BLANKOUT																																								1	
18	S-2 (R3-1-24) LED BLANKOUT																																									1
18	**EX. NW COMBINATION SIGNAL SUPPORT**		2																		2	1	2	2		14	36															
18	EX. NW SUPPORT TO PB-1	8							16	1	8	8														13	26															
18	PB-1 TO CONTROLLER	6							24		6	6														22	132	11														
18	CONTROLLER												1	1																		1	1	1			1	1				
18	UPS																																	1								
18	**EX. SW COMBINATION SIGNAL SUPPORT**		2																		1		2	1			18									1						
18	EX. SW SUPPORT TO PB-2	10							20	1	10	10															15														
18	PB-2 TO PB-1	78		2					156		78	78															83														
18	**SP-1 COMBINATION SIGNAL SUPPORT**		2			90	1	1					1								2	1		2		14	36			1		1					2				
18	SIGNAL HEADS 2C & 2D	30																	1	1			2				69														
18	SIGNAL HEADS 4A & 4B	66															2						2				105														
18	SIGNAL HEADS 6A & 6B	62															2						2				101														
18	SIGNAL HEADS 8A & 8B	39															2						2				78														
18	SP-1 TO PB-3	11			48				22	1	11	11														16	96														
18	PB-3 TO PB-1	74		2	237				296		74	74														79	711	79														
18	**SP-2 COMBINATION SIGNAL SUPPORT**												1								1		4	1			18			1			1				1				
18	SIGNAL HEADS 2A & 2B	48															2						2				88														
18	SIGNAL HEADS 8C																1						1				21														
18	SP-2 TO PB-4	5			75				5	1	5	5															30														
18	PB-4 TO PB-3	79			252				237		79	79															252	84													
18	EXISTING POWER SOURCE TO PB-4	7							7		7	7																12	47		1										
18	LIGHTING CONTROL CENTER				630																				210																
	TOTALS CARRIED TO GENERAL SUMMARY		6	4	1242	90	1	1	783	4	278	278	3	1	1	1	9	1	1	6	2	19	6	210	158	1915	186	47	2	1	1	1	1	1	1	1	4	1	1	1	1

ATB MAIN & W 48TH ST.

ATB-MAIN & W. 48TH STREET
SIGNAL SUBSUMMARY

DESIGN AGENCY
Mead & Hunt

CLIENT

DESIGNER
DLW

REVIEWER
SJS 07/06/22

PROJECT ID
113599

SHEET P.10 | TOTAL 22

MODEL: Sheet PAPERSIZE: 34x22 (In.) DATE: 10/27/2022 TIME: 7:24:02 AM USER: H26egd
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ASPHALT PAVEMENT REMOVED AND REPLACED

PROPOSED BUILD UP

3" ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), AS PER PLAN, PG64-22 (2 LIFTS)
ITEM 407 - TACK COAT (BETWEEN LIFTS OF ITEM 441)
ITEM 407 - TACK COAT
6" ITEM 301 - ASPHALT CONCRETE BASE, PG 64-22 (449)
6" ITEM 304 - AGGREGATE BASE
ITEM 204 - SUBGRADE COMPACTION

CONCRETE PAVEMENT REMOVED AND REPLACED

PROPOSED BUILD UP

ITEM 255 - FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS QC1

CURB RAMP

R-2 W-2 WALK REMOVED AND REPLACED

R-2 W-1 WALK REMOVED AND REPLACED

W-3 R-5 WALK REMOVED AND REPLACED

W-4 WALK REMOVED AND REPLACED

W-5 WALK

NOTE:
PAVEMENT REMOVAL FOR R-4 CONSISTS OF BOTH FLEXIBLE AND RIGID PAVEMENT. REPLACE BOTH WITH THE ASPHALT PAVEMENT BUILD UP ON THIS SHEET.

NOTE:
PAVEMENT REMOVAL FOR CR-3 CONSISTS OF BOTH FLEXIBLE AND RIGID PAVEMENT. REPLACE BOTH WITH THE RIGID REPLACEMENT DESCRIBED ON THIS SHEET.

R-1 R-3 R-4 R-5 R-6 R-7 R-8 R-9 R-10 R-11 R-12 R-13

C-1 C-2 C-3 C-4

CR-1 TYPE A1 x2
CR-2 TYPE A1 x2
CR-3 TYPE A1
CR-4 TYPE A1

A-1 GR-1

14+14.60
40.55' LT

32+26.20
21.68' RT

32+19.25
9.98' LT

32+23.87, 21.99 RT

0+31.54
26.93' LT

14+16.30
13.58' RT

0+45.16
34.06' RT

31+45.15, 34.00 LT

31+42.80, 49.50 RT

POT 0+00.00

POT 14+52.74

℄ RW COLLINS BLVD.
180.31'
S75°31'15"E

℄ RW 48TH ST.
452.74'
S75°08'54"E

℄ RW MAIN AVE.
4,367.89'
14°42'55"E

CONNECT MGS TO EX TYPE 5 GUARDRAIL

MGS TYPE E ANCHOR ASSEMBLY

AGGREGATE REPLACED

STA 0+80.00, 28.0' RT
BEGIN GUARDRAIL

STA 1+30.00, 28.0' RT
END TYPE E ANCHOR ASSEEM.
BEGIN MGS GUARDRAIL

STA 1+55.00, 28.0' RT
END GUARDRAIL

PC 6722+72.00

RR EQUIPMENT DO NO DISTURB

RR EQUIPMENT DO NO DISTURB

RR EQUIPMENT DO NO DISTURB

Ex R/W

Ex RR

HORIZONTAL SCALE IN FEET
0 5 10 20

PLAN SHEET
CURB RAMP DETAILS

ATB MAIN & W 48TH ST.

MODEL: CLX_RW_48th ST - Plan (Sheet) PAPERSIZE: 34x22 (in.) DATE: 10/27/2022 TIME: 7:24:03 AM USER: 1426egd
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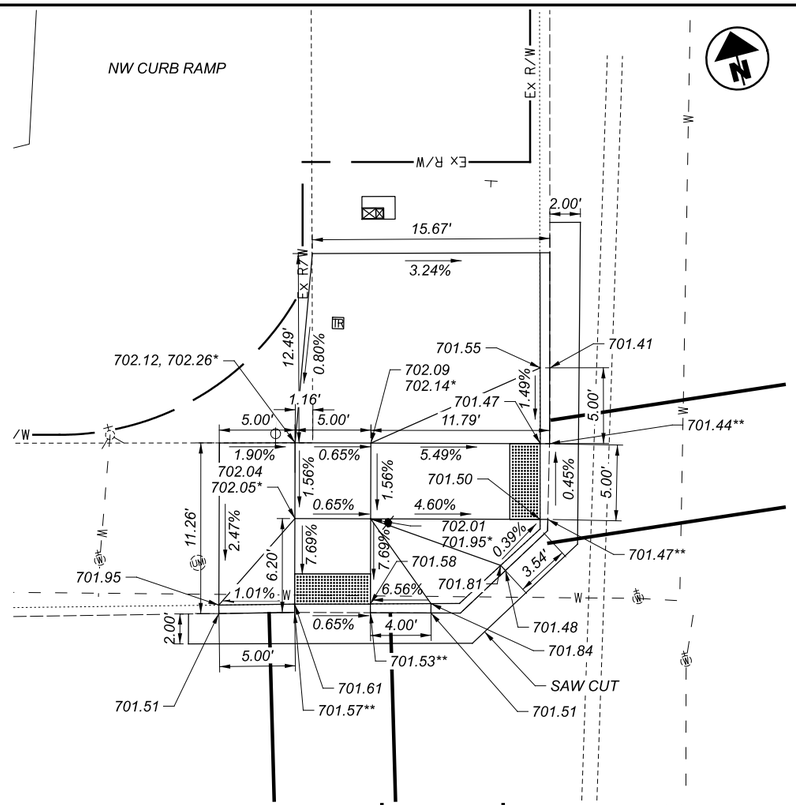
DESIGN AGENCY
Mead & Hunt
CLIENT

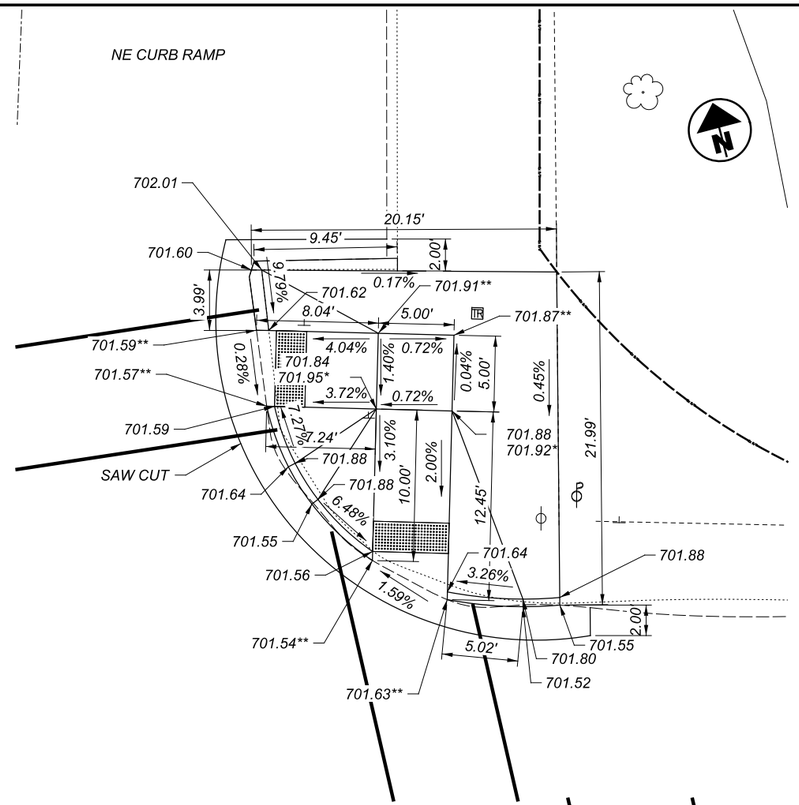
DESIGNER	ANM
REVIEWER	SJS 07/06/22
PROJECT ID	113599
SHEET	P.11
TOTAL	22

* MARKS AN EXISTING ELEVATION
** MATCH EXISTING ELEVATION

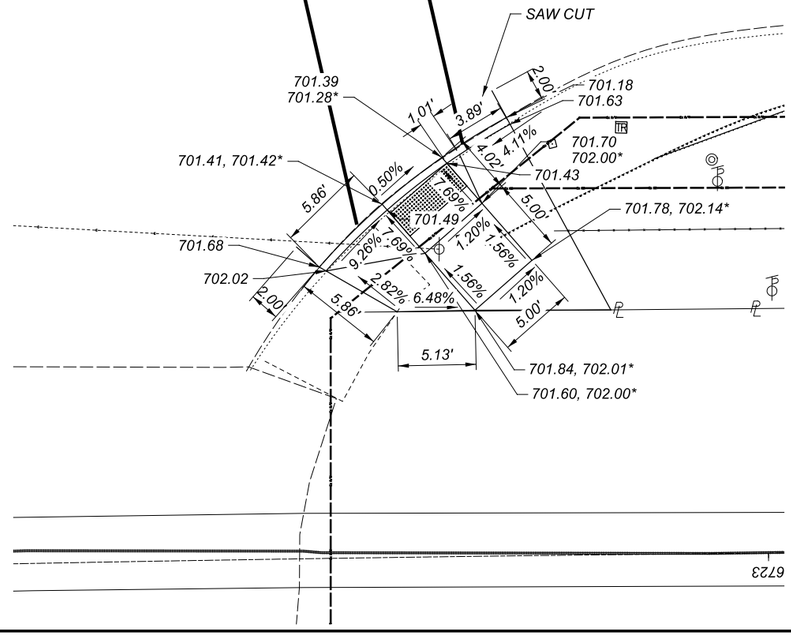
NW CURB RAMP



NE CURB RAMP



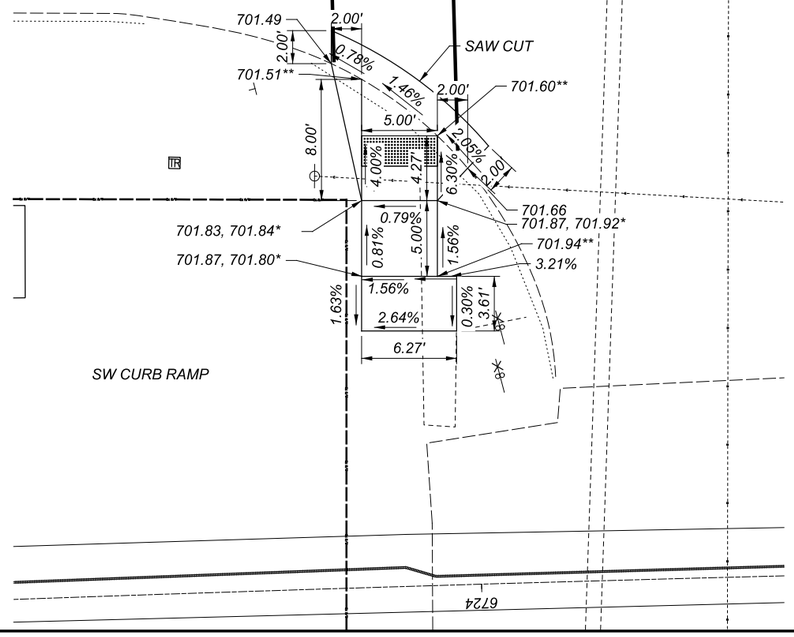
SE CURB RAMP



14

℄ RW W 48TH ST.

SW CURB RAMP



NOTE: ALL TRUNCATED DOMES SHALL BE THE RAMP WIDTH BY 24".

HORIZONTAL SCALE IN FEET
0 2.5 5 10

PLAN SHEET
CURB RAMP DETAILS

ATB MAIN & W 48TH ST.

DESIGN AGENCY
Mead & Hunt

CLIENT

DESIGNER
ANM

REVIEWER
SJS 07/06/22

PROJECT ID
113599

SHEET P.12 TOTAL 22

MODEL: Unnamed Plan - NW Curb Ramp [Sheet] PAPERSIZE: 34x22 (in.) DATE: 10/27/2022 TIME: 7:24:05 AM USER: I426egd
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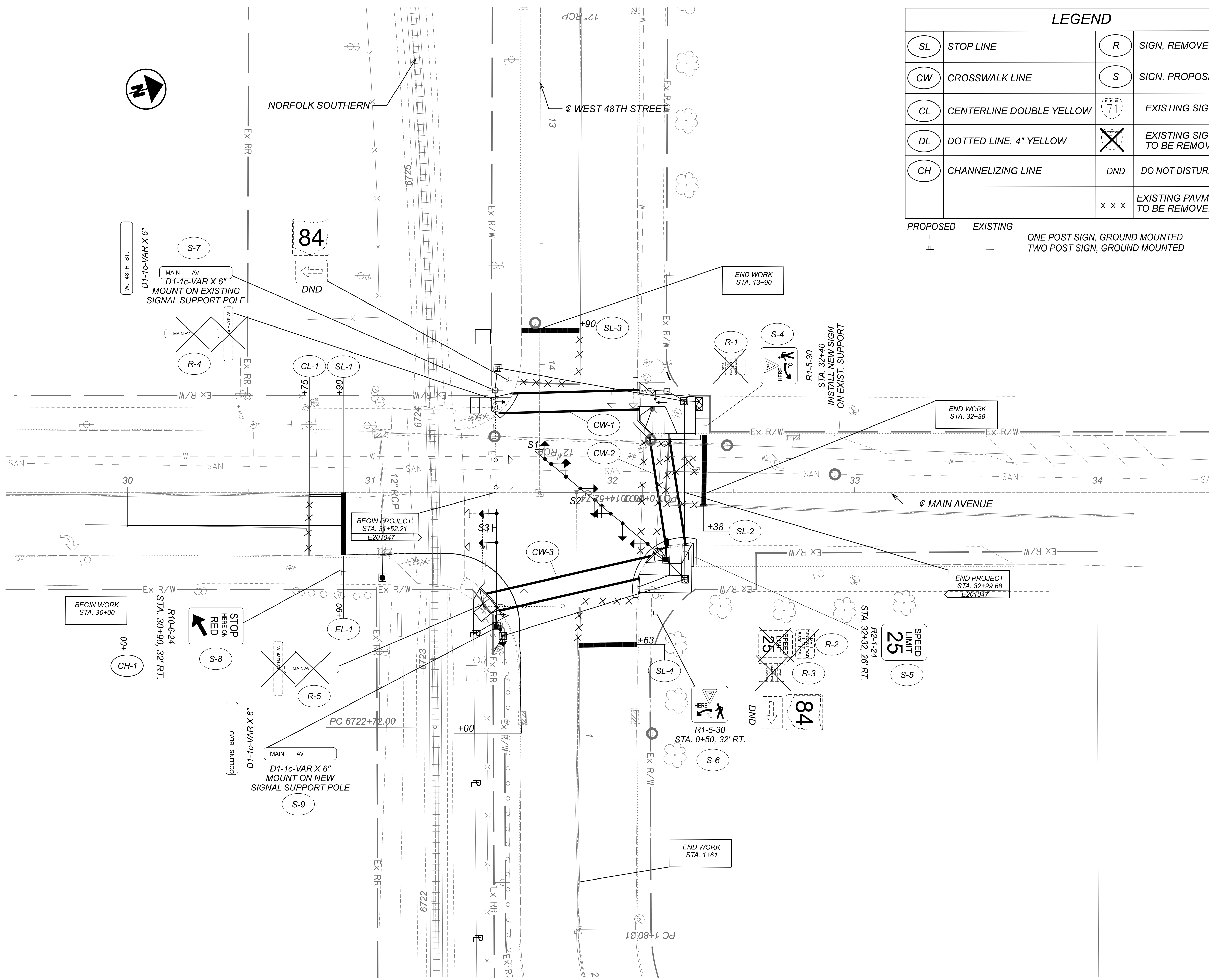
ATB-MAIN & W. 48TH STREET
SIGNING & PAVEMENT MARKING

LEGEND			
SL	STOP LINE	R	SIGN, REMOVED
CW	CROSSWALK LINE	S	SIGN, PROPOSED
CL	CENTERLINE DOUBLE YELLOW		EXISTING SIGN
DL	DOTTED LINE, 4" YELLOW		EXISTING SIGN TO BE REMOVED
CH	CHANNELIZING LINE	DND	DO NOT DISTURB
		× × ×	EXISTING PAVM'T MARKINGS TO BE REMOVED

PROPOSED EXISTING
ONE POST SIGN, GROUND MOUNTED
TWO POST SIGN, GROUND MOUNTED

HORIZONTAL SCALE IN FEET: 0 10 20 40



ATB MAIN & W 48TH ST.

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DESIGN AGENCY Mead & Hunt
CLIENT
DESIGNER DLW
REVIEWER SJS 07/06/22
PROJECT ID 113599
SHEET P.13 TOTAL 22

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, RAILROAD PREEMPTION, ETC.) IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE CITY OF ASHTABULA, CITY ENGINEER. THE CITY OF ASHTABULA ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, REPRESENTATIVES FROM ORDC, MOTT MACDONALD, THE RAILROAD AND THE CITY OF ASHTABULA ENGINEER'S OFFICE AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL THE CITY OF ASHTABULA TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL AND WHEN MOTT MACDONALD (OR ORDC) HAVE INSPECTED AND APPROVED THE INSTALLATION. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT EFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY THE CITY OF ASHTABULA TRAFFIC PERSONNEL AND MOTT MACDONALD, (OR ORDC) PRIOR TO FINAL ACCEPTANCE. THE CITY OF ASHTABULA SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 90 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY.

EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLER, CABINET, UNINTERRUPTIBLE POWER SUPPLY, VEHICLE DETECTION EQUIPMENT, LED LAMP UNITS, NETWORK AND COMMUNICATION/ INTERCONNECT EQUIPMENT.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE OR THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

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. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.

   D. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.

   E. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.

   F. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.

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.

GROUNDING AND BONDING (CONTINUED)

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. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.

      III. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.

      IV. 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.

   B. IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE MINIMUM SIZE 4 AWG.

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. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

COND. NO.	COLOR	VEHICLE SIGNAL	PEDESTRIAN SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIPMENT GROUND	EQUIPMENT GROUND
5	ORANGE	YELLOW BALL	#2 DW/FDW
6	BLUE	GREEN ARROW	#2 WALK
7	WHITE/BLACK STRIPE	YELLOW ARROW	NOT USED

6. 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.

GROUNDING AND BONDING (CONTINUED)

   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.

7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, CABINET, CONTROLLER, ETC., SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS. REMOVED ITEMS SHALL BE STORED ON THE PROJECT FOR SALVAGE BY CITY OF ASHTABULA IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

CONTROLLER
SIGNAL HEADS
PEDESTRIAN SIGNAL HEADS
MAST ARMS

THE CONTRACTOR SHALL PLUG HOLES IN THE EXISTING SIGNAL OR LIGHTING SUPPORTS WHERE MAST ARMS AND PEDESTRIAN SIGNAL HEADS ARE REMOVED. THE PLUGGED HOLES SHALL BE WEATHER TIGHT.

REMOVED ITEMS SHALL BE DELIVERED TO THE CITY FACILITY WHOSE ADDRESS IS LISTED BELOW:

CITY OF ASHTABULA ENGINEERING DEPARTMENT
ATTN: JIM TIMONERE (440) 922-7118
4717 MAIN AVENUE
ASHTABULA, OHIO 44004

IN THE EVENT THE ITEMS STORED ON THE PROJECT FOR SALVAGE BY THE LOCAL AGENCY ARE NOT REMOVED, THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT. THE COST OF PLUGGING THE HOLES ON THE EXISTING SIGNAL SUPPORTS SHALL BE INCLUDED IN PAYMENT WITH THE REMOVAL ITEMS.

POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED FROM THE ILLUMINATING COMPANY AT THE LOCATION INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120 VOLTS.

ATB-MAIN & W. 48TH STREET
SIGNAL NOTES

DESIGN AGENCY: Mead & Hunt
CLIENT
DESIGNER: DLW
REVIEWER: SJS 07/06/22
PROJECT ID: 113599
SHEET: P.14 | TOTAL: 22

633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, A CABINET RISER (8-INCH MINIMUM) AND ANCHOR BOLTS WILL BE PROVIDED FOR BASE-MOUNTED CABINETS. BEFORE PERFORMING THE WORK, THE CONTRACTOR, THE CITY OF ASHTABULA ENGINEER AND THE PROJECT ENGINEER WILL PERFORM A SITE INSPECTION TO ESTABLISH THE LOCATION OF THE UPS CABINET AND FOUNDATION.

THE UPS CABINET SHALL INCLUDE A GENERATOR POWER PANEL WITH A HEAVY-DUTY POWER RELAY VERSUS THE LINE VOLTAGE GENERATOR SWITCH. THE GENERATOR INLET SHALL BE A RECESSED PANEL WITH A DOOR THAT IS FLUSH WITH THE EXTERNAL SIDE OF THE UPS CABINET. IT SHALL INCLUDE A RECESSED PLUG, AUTOMATIC TRANSFER SWITCH AND A DOOR THAT SECURELY CLOSES OVER THE POWER CORD.

THE CABINET SHALL HAVE A DOOR STOP MECHANISM AND THERMOSTATICALLY CONTROLLED FAN.

THE CABINET SHALL INCLUDE A BATTERY BALANCING DEVICE THAT REGULATES THE BATTERIES AND OPTIMIZES PERFORMANCE.

AFTER FOUR (4) HOURS OF BATTERY RUNTIME, THE SYSTEM SHALL BE PROGRAMMED TO SWITCH THE INTERSECTION FROM FULL OPERATION TO CONTROLLER AUTOMATIC FLASH OPERATION THROUGH THE MONITOR. THE CONTROLLER SHALL BE PROGRAMMED SO THAT FLASH OPERATION SHALL BEGIN ONCE THE INTERSECTION RUNS MINOR STREET GREEN (TYP. PH. 4 &8), ALL-RED CLEARANCE, AND THEN FLASH OPERATION.

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2-HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL OR THROUGH THE CONTROLLER WITH A C11 TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER.

THIS ITEM SHALL INCLUDE A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL CABINET IS BEING POWERED BY A UPS. THE LED HOUSING SHALL BE NEMA 4X, IP65 OR IP66, RATED FOR OUTDOOR USE AND BE TAMPER/SHATTER RESISTANT. IT SHALL BE A DOMED ENCLOSURE CONTAINING A RED LENS WITH LED THAT IS VISIBLE FROM 100 FOOT MINIMUM. THE ENCLOSURE AND LED MODULE SHOULD BE PLACED ON THE SIDE OF THE UPS CABINET FACING TOWARDS THE MAINLINE ROADWAY AND SEALED FROM WATER INTRUSION. IT SHOULD BE WIRED USING MINIMUM 20GA STRANDED, INSULATED HOOKUP WIRE TO THE STATUS RELAY OUTPUTS OF THE UPS. THE WIRES SHALL BE TERMINATED BY LUGS AT THE DISPLAY END AND PERMANENTLY LABELED "BACKUP POWER STATUS DISPLAY," WITH WIRE POLARITY INDICATED. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER (THE "BACKUP" OPERATING CONDITION). THIS ITEM INCLUDES PROGRAMMING THE UPS STATUS RELAY OUTPUTS TO PRODUCE THE LAMP STATUS DISPLAYS. THESE STATUS DISPLAYS WILL BE SOLID 100% DUTY CYCLE (NOT FLASHING) DISPLAYS. THE OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732 THE FOLLOWING SHALL APPLY:

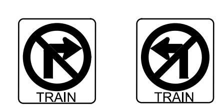
1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.
4. THE PEDESTRIAN SIGNAL HEAD SHALL BE OF THE LED COUNTDOWN TYPE.
5. NEW ATTACHMENT HARDWARE AND FITTINGS SHALL BE USED.
6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODTHE CITY OF ASHTABULA ENGINEER, IN WRITING, WITH THE LED MANUFACTURER NAME SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

PAYMENT FOR ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND NEW ATTACHMENT HARDWARE.

828 LED BLANKOUT SIGN (TURN PROHIBITION)

THE CONTRACTOR SHALL PROVIDE AND INSTALL A SOLID FILLED RED SYMBOL, SOLID FILLED WHITE ARROW NO RIGHT TURN SYMBOL AND A NO LEFT TURN SYMBOL SIGN ON THE TRAFFIC SIGNAL MAST ARM AT THE LOCATIONS INDICATED ON THE PLANS. THE SYMBOL SIGN SHALL BE A WEATHER TIGHT NEMA ENCLOSURE. THE FOLLOWING SPECIFICATIONS SHALL APPLY:

VOLTAGE: 120V
ILLUMINATION: LED
SYMBOL HEIGHT: 20.0"
CABINET SIZE: 30"H x 24"W x 5.5" D
FINISH: BLACK
WARRANTY: 5 YEARS



THE SIGNS SHALL BE WIRED TO ACTIVATE DURING THE RAILROAD PREEMPTION PHASES AND REMAIN ON FOR THE ENTIRE RAILROAD PREEMPTION CYCLE.

THE MAST ARM MOUNTING BRACKET SHALL BE SUPPLIED BY THE SIGN MANUFACTURER AND INSTALLED BY THE CONTRACTOR. THE SIGN SHALL BE ACTIVATED (ON) WHEN THE CONTROLLER RECEIVES A RAILROAD PREEMPTION CALL. THE REMAINING TIME THE SIGN SHALL BE BLANK OR (OFF).

PAYMENT FOR THE ABOVE ITEM SHALL BE PAID AT THE UNIT PRICE BID PER EACH FOR ITEM 828, LED BLANKOUT SIGN, LED BLANKOUT SIGN COMPLETE WHICH PRICE SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS MOUNTING HARDWARE FOR RIGID MOUNTING INCLUDING THE POWER CABLE AND ALL INCIDENTALS TO COMPLETE THE WORK.

809 ATC CONTROLLER, AS PER PLAN

THE CONTROLLER UNIT SHALL BE FURNISHED AND INSTALLED PER SS 809 AND BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS (TAP) LIST.

THE CONTROLLER SHALL BE AN ECONOLITE COBALT AND COMPATIBLE WITH THE CABINET TYPE BEING INSTALLED.

633 CABINET, TYPE TS-2, AS PER PLAN

THE CABINET SHALL BE FURNISHED AND INSTALLED ACCORDING TO CMS 633 AND 733 AND BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS LIST (TAP).

THE GROUND-MOUNTED CABINET SHALL BE A NEMA TS-2, TYPE 1, CABINET SIZE 7 WITH 16 LOAD SWITCH BAYS, LED UNDER-SHELF LIGHTING, POWER HARNESSES FOR BOTH TS2 TYPE 1 AND TYPE 2 CONTROLLERS AND SHALL HAVE A MINIMUM OF THREE SHELVES.

EACH CABINET SHALL COME EQUIPPED WITH TWO 16-CHANNEL CABINET DETECTOR RACKS (CDR) INCLUDING BUS INTERFACE UNITS (BIU). THE LOOP DETECTOR TERMINATION PANEL FOR THE SECOND DETECTOR RACK SHALL BE OMITTED.

THE CABINET SHALL BE FURNISHED WITH AN EDI MMU AS ALLOWED ON THE TAP/APPROVED PRODUCTS LIST.

PAYMENT FOR ITEM 633 CABINET, TYPE TS-2, AS PER PLAN WILL BE AT THE CONTRACT BID PRICE PER EACH COMPLETE AND IN PLACE INCLUDING ALL CONNECTIONS TESTED AND ACCEPTED.

632 COMBINATION SIGNAL SUPPORT, MISC.:, SIGNAL SUPPORT TYPE TC-12.31 (WITH LIGHT POLE EXTENSION)

THIS SUPPORT SHALL CONSIST OF A TC-12.31 DESIGN 12 POLE WITH A TC-81.22 DESIGN 14 SIGNAL ARM AND A LIGHT POLE EXTENSION. ALL SIGNAL SUPPORT ITEMS REQUIRED BY C&MS ITEM 632 SHALL BE INCLUDED AS PART OF THIS SUPPORT.

THE SIGNAL MAST ARM SHALL BE CUSTOM DESIGNED TO ADDRESS THE EXPECTED LOADS SUCH AS WIND, SNOW AND ICE LOADS. THIS WILL INCLUDE BUT IS NOT LIMITED TO RE-DESIGNING THE ARM TUBES, WELDS, BOLTS, PLATES, AND GUSSETS TO SUPPORT THE LOADING ON THE MAST ARM.

THE MAUFACTURER SHALL SUBMIT DETAILED STRUCTURAL CALCULATIONS SHOWING THE ADEQUACY OF ANY PROPOSED NON STANDARD SIGNAL SUPPORT DESIGN. THE DESIGN OF THE SUPPORTS AND THE MAST ARM SHALL BE PER THE AASHTO LDFDLTS-1.

THE CONTRACTOR SHALL HAVE THE SIGNAL SUPPORT AND MAST ARM DESIGNED AND REVIEWED BY THE CITY OF ASHTABULA ENGINEER PRIOR TO FABRICATION AND ACCEPTANCE.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH SUPPORT FURNISHED, IN PLACE, COMPLETE AND ACCEPTED.

632, POWER SERVICE (TRAFFIC SIGNALS)

POWER SERVICE FOR THE TRAFFIC SIGNALS SHALL BE AS SPECIFIED IN ODOT'S CMS SECTION 632.24. THE FOLLOWING ESTIMATED QUANTITY IS CARRIED TO THE SIGNAL SUBSUMMARY.

ITEM 632 - POWER SERVICE 1 EACH

819 RAILROAD PREEMPTION INTERFACE

INSTALL A RAILROAD PREEMPTION INTERFACE PANEL PER TC-86.10. BASED UPON TC-86.10, THE PROCESSOR INTERFACE IS REQURIED FOR THIS PROJECT. INSTALL A INDICATOR PANEL PER CMS 819.09 ON THE EXISTING LIGHT POLE ADJACENT TO THE TRAFFIC SIGNAL CONTROLLER. THE INDICATOR PANEL SHALL BE FACING THE TRAFFIC SIGNAL CABINET. MOUNT THE INDICATOR PANEL NO LESS THAN TEN FEET ABOVE THE ROADWAY LEVEL. ALSO, LOCATE THE INDICATORS SO AS TO PROVIDE A MINIMAL VISIBILITY TO ROADWAY USER AT OR APPROACHING THE INTERSECTION.

THE CONTRACTOR SHALL SCHEDULE A FINAL FIELD TEST, PRIOR TO THE 10-DAY SIGNAL BURN TEST, WITH THE ORDC,THEIR REPRESENTATIVE AND A REPRESENTATIVE FROM THE RAILROAD. THE FINAL FIELD TEST SHALL INCLUDE CHECKING THAT THE SIGNAL IS CONNECTED TO THE RAILROAD CONTROLLER AND OPERATES PER THE PLANS DURING A PREEMPTION CALL.

CONTACTS:
OHIO RAIL DEVELOPMENT COMMISSION (ORDC)
ALLEN BELL
PHONE: (614) 301-3548
EMAIL: Allen.Bell@dot.ohio.gov

OHIO RAIL DEVELOPMENT COMMISSION REPRESENTATIVE
SAM BOBKO
PHONE: (216) 535-4493
EMAIL: sam.bobko@mottmac.com

RAILROAD REPRESENTATIVE
PEASE, AARON J
PHONE: (440) 429-1960
EMAIL: Aaron.Pease@nscorp.com

PAYMENT FOR ALL MATERIALS AND COST FOR THIS ITEM SHALL BE COMPLETE AND INCLUDED IN ITEM 819-RAILROAD PREEMPTION INTERFACE, 1 EACH. THIS QUANTITY HAS BEEN CARRIED TO SHEET P.10.

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WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER, ORDC AND THE CITY OF ASHTABULA ENGINEER WITH 72-HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE(S)SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

632 SIGNAL SUPPORT FOUNDATION

PRIOR TO ORDERING THE SIGNAL SUPPORTS, THE CONTRACTOR SHALL CONTACT OUPS TO HAVE ALL THE UTILITIES LOCATED IN THE FIELD THEN MEET WITH THE PROJECT ENGINEER TO LOCATE THE PROPOSED SUPPORT LOCATIONS TO INSURE THERE ARE NO CONFLICTS WITH UTILITIES. IF THERE ARE ISSUES, THE PROJECT ENGINEER SHALL PROVIDE GUIDANCE AS TO THE RELOCATION OF THE SUPPORT POLES.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH SUPPORT FURNISHED, IN PLACE, COMPLETE AND ACCEPTED.

SPECIAL, MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND WHICH ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN.

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF THE EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF THE CITY OF ASHTABULA ENGINEER AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION, A WRITTEN RECORD OF THE CONDITION OF EXISTING LIGHTING SHALL BE MADE BY THE CITY OF ASHTABULA ENGINEER. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE NOT STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF THE CITY OF ASHTABULA ENGINEER AND THE CONTRACTOR.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE THE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT SHALL BE MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS.

REPLACEMENT OF KNOCKED DOWNED UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY ON A UNIT BASIS.

BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENT.

SPECIAL, MAINTAIN EXISTING LIGHTING (CONT.)

WHEN THE SEQUENCE OF CONSTRUCTION ACTIVITIES REQUIRES, OR SHOULD THE CONTRACTOR DESIRE, THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY LIGHTING OF THIS PORTION OF THE ROADWAY.

PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOUR SETS OF THE TEMPORARY LIGHTING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.

THIS PLAN SHALL SHOW LOCATIONS OF POLES, LENGTHS OF BRACKET ARMS, STYLES OF LUMINAIRES, MOUNTING HEIGHTS, WIRING METHODS AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 1.2 FOOTCANDLES WITH AN AVERAGE TO MINIMUM UNIFORMITY NOT TO EXCEED 3:1. MOUNTING HEIGHT OF TEMPORARY LUMINAIRES SHALL NOT BE LESS THAN 30 FEET, AND THE MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET. TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "B" FOR STRENGTH REQUIREMENTS AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED. HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA. IF BREAKAWAY POLES ARE USED TO MEET THESE CRITERIA, THEN UNDERGROUND WIRING SHALL BE USED. RECONDITIONED OR USED MATERIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING.

ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. WHEN NO LONGER NEEDED, THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

THE MAINTAINING AGENCY WILL PAY FOR ELECTRICAL ENERGY CONSUMED BY EXISTING POWER SERVICES AND BY PROPOSED PERMANENT POWER SERVICES AFTER ACCEPTANCE OF THE LIGHTING WORK. THE CONTRACTOR WILL PAY FOR ELECTRICAL ENERGY, INSTALLATION, REMOVAL AND MAINTENANCE OF ANY TEMPORARY POWER SERVICES.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL "MAINTAIN EXISTING LIGHTING" SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN. THE UNIT PRICE BID FOR ITEM SPECIAL "REPLACEMENT OF EXISTING LIGHTING UNIT" SHALL BE FULL PAYMENT FOR THE REPLACEMENT OF AN EXISTING LIGHTING UNIT WHICH HAS BEEN KNOCKED DOWN AFTER THE AFOREMENTIONED INSPECTION AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO PROVIDE A REPLACEMENT FOR SUCH UNIT.

625 UNDERGROUND WARNING/MARKING TAPE, AS PER PLAN

UNDERGROUND WARNING/MARKING TAPE SHALL BE IN ACCORDANCE WITH CMS 725.22 EXCEPT THE TAPE SHALL NOT BE FURNISHED WITH TRACER WIRE OR MINIMUM BREAK STRENGTH.

625, LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF SS 813 AND 913, LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS SHALL BE AS FOLLOWS:

LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS WITH AN IES III-M-SC DISTRIBUTION SHALL BE:

1) COOPER / EATON NAVION ROADWAY AND AREA LUMINAIRE WITH 16 LEDS EACH AND TYPE III ROADWAY OPTICS (VERD-G-A02-E-U-T3-7030-10K-1P66-4B-AP)

2) GE EVOLVE LED ROADWAY STREETLIGHT ERL2 (ERL2-019C330AGRAYLR)

3) AUTOBAHN SERIES ATBL PERFORMANCE PACKAGE, 3000K, ROADWAY TYPE III DISTRIBUTION (ATBL-A-MVILT-R3-4B)

OR EQUAL AS APPROVED BY THE ENGINEER.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 625, "LUMINAIRE, CONVENTIONAL, SOLID STATE (LED) AS PER PLAN, (IES III-M-SC DISTRIBUTION) FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625, POWER SERVICE, AS PER PLAN (LIGHTING)

THIS ITEM IS FOR THE MAINTAINING OF THE EXISTING LIGHTING POWER SERVICE AT STATION 2+70. IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED.

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

POWER COMPANY : ILLUMINATING COMPANY
ADDRESS : 6896 MILLER ROAD, BRECKSVILLE, OH 44141
PHONE # : (440) 717-6845
CONTACT NAME : JOHN ZASSICK

THE ENGINEER SHALL ENSURE THAT EACH POWER SERVICE ELECTRICAL ENERGY ACCOUNT IS IN THE NAME OF AND THAT THE BILLING ADDRESS IS TO THE MAINTAINING AGENCY NOTED IN THE PLANS. THIS SHALL BE DONE NOT ONLY FOR EACH NEW POWER SERVICE ESTABLISHED BY THIS PROJECT BUT ALSO FOR EACH EXISTING POWER SERVICE, SINCE THERE MAY BE A REASSIGNMENT OF THE RESPONSIBILITY FOR AN EXISTING SERVICE AS A RESULT OF THE WORK PERFORMED BY THIS PROJECT.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 625, "POWER SERVICE, AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER. THE FOLLOWING IS CARRIED TO THE SIGNAL SUBSUMARY FOR THE LIGHTING.

ITEM 625 - POWER SERVICE , AS PER PLAN 1 EACH

809 STOP-LINE RADAR DETECTION, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A STOP-LINE RADAR DETECTION WAVETRONIX MATRIX DETECTION UNIT OR ADVANCE RADAR DETECTION, WAVETRONIX SMARTSENSOR ADVANCE DETECTION UNIT (MODEL SS-200E). THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER. SURGE PROTECTION DEVICES, AS RECOMMEDNDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
4. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
5. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR--PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BEHARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.
6. THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING EXISTING LOOPS.
7. THE INSTALLATION SHALL INCLUDE ALL CONTROLLER PROGRAMMING FOR COMPLETE INSTALLATION, WHICH INCLUDES MODIFICATIONS FOR REMOVAL OF EXISTING DETECTION.
8. THE CONTRACTOR SHALL CONTACT THE CITY OF ASHTABULA ENGINEER THREE WORKING DAYS PRIOR TO INSTALLING THE DETECTION TO REMOVE THE CABINET LOCKS. ANY LOOP DETECTORS DISTRUBED BY THE PLANING SHOULD BE ABANDONED IN PLACE.
9. THE CONTRACTOR SHALL DISCONNECT AND LEAVE THE LOOP DETECTOR AMPLIFIERS IN THE CONTROLLER.

PAYMENT FOR ITEM 809 STOP-LINE RADAR DETECTION, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED.

ATB-MAIN & W. 48TH STREET
SIGNAL NOTES

DESIGN AGENCY
Mead & Hunt
CLIENT

DESIGNER DLW
REVIEWER SJS 07/06/22
PROJECT ID 113599
SHEET P.16 TOTAL 22

ATB MAIN & W 48TH ST.

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 1/2/2022 TIME: 8:45:51 AM USER: l670dlw
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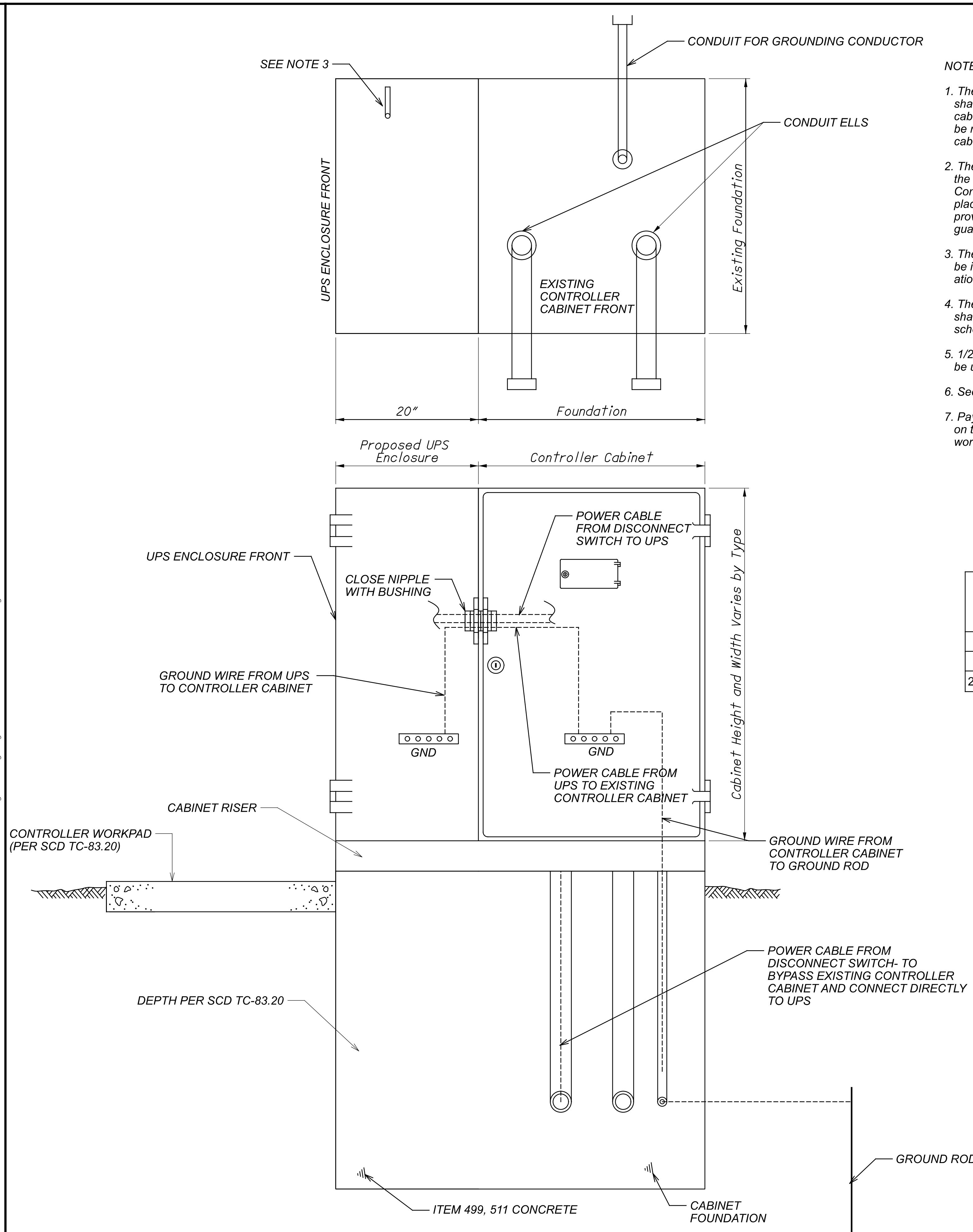


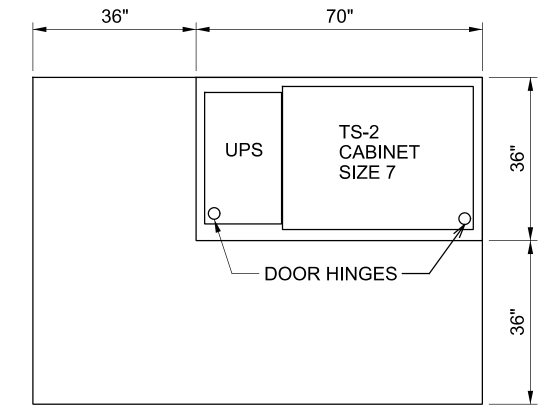
NOTES:

1. The Uninterruptible Power Supply (UPS) enclosure shall be mounted flush up against the traffic signal cabinet and sealed with silicone. The Contractor shall be responsible for providing the necessary power cable between the UPS unit and signal cabinet.
2. The UPS should be placed on the opposite side of the pull box on a 332/336 cabinet (per Standard Construction Drawing (SCD) TC-83.20). The UPS placement for a NEMA cabinet varies, placement should provide adequate access with respect to slope, guardrail spacing, etc.
3. The size, number, and location of anchor bolts shall be in accordance with the manufacturer's recommendations.
4. The size, number, and orientation of conduit ells shall be as shown in the plan, except that a ¾" schedule 40 PVC shall be installed in each foundation.
5. 1/2" preformed joint filler as per CMS 705.03 shall be used between foundations and adjacent paved areas.
6. See SCD TC-83.20 for further details.
7. Payment for the controller and UPS work pad as shown on this sheet will be included under item 633, Controller work pad, as per plan.

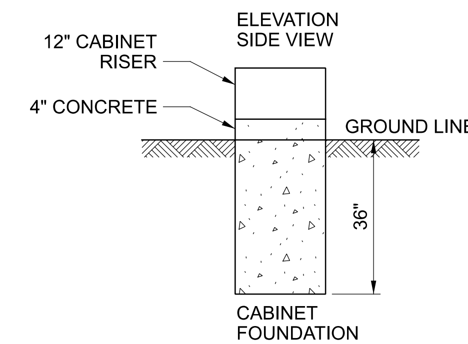
TYPE	W (IN.)	D (IN.)	FOUNDATION CONCRETE (CU. YD.)
TS-1	60	24	1.23
TS-2	70	36	2.16
2070/170	50	36	1.54

TS-2 SIZE 6/7 CABINET DETAIL (TYP.)

CABINET & WORK PAD DETAIL PLAN VIEW



CABINET FOUNDATION DETAIL



633 CONTROLLER WORK PAD, AS PER PLAN
633 CABINET FOUNDATION, AS PER PLAN

NOTES:

1) THE SIZE OF THE UPS FOUNDATION MAY VARY BASED ON THE CABINET SIZE PROVIDED.
2) UPS FOUNDATION ELEVATION SHOULD MATCH CABINET FOUNDATION ELEVATION.
3) THE UPS CABINET SHALL BE MOUNTED FLUSH UP AGAINST THE SIGNAL CABINET AND SEALED.
4) CONDUIT AND WIRING FROM THE SIGNAL CABINET TO THE UPS SHALL BE INSTALLED THROUGH THE CABINET RISER.

THIS DRAWING REPLACES PIS 208321 DATED 04-20-2012.

ATB-MAIN & W. 48TH STREET
SIGNAL NOTES

DESIGN AGENCY: Mead & Hunt
CLIENT
DESIGNER: DLW
REVIEWER: SJS 07/06/22
PROJECT ID: 113599
SHEET: P.17 TOTAL: 22

ATB MAIN & W 48TH ST.

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 10/27/2022 TIME: 7:24:11 AM USER: l426egd
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MAST ARM MOUNTED SIGNS

TRAIN (R3-2-24) S1

TRAIN (R3-1-24) S2

NO TURN ON RED R10-11-24 S3

LED BLANKOUT SIGNS (USE OPEN LOAD SWITCH BAYS)

THIS SIGN IS PAID FOR UNDER ITEM 630 SIGNING QUANTITIES

SIGNAL HEADS

2D*

2A, 2B, 2C* 4A, 4B 6A, 6B 8A, 8B, 8C

* SIGNAL HEADS 2C AND 2D SHALL BE OPTICALLY PROGRAMABLE DIRECTED TO SHADED AREA AS SHOWN IN THE PLANS

PEDESTRIAN SIGNAL

PEDESTRIAN HEADS (LED, COUNTDOWN, TYPE D2)

PEDESTRIAN SIGNS

START CROSSING Watch For Vehicles / DON'T START Finish Crossing If Started / TIME REMAINING To Finish Crossing / DON'T CROSS / PUSH BUTTON TO CROSS

R10-3E-9
2 - RIGHT ARROWS

CROSS ONLY ON SIGNAL

R10-2
4 - PLACE AT ALL 4 CORNERS FOR THE NORTH/SOUTH CROSSWALKS

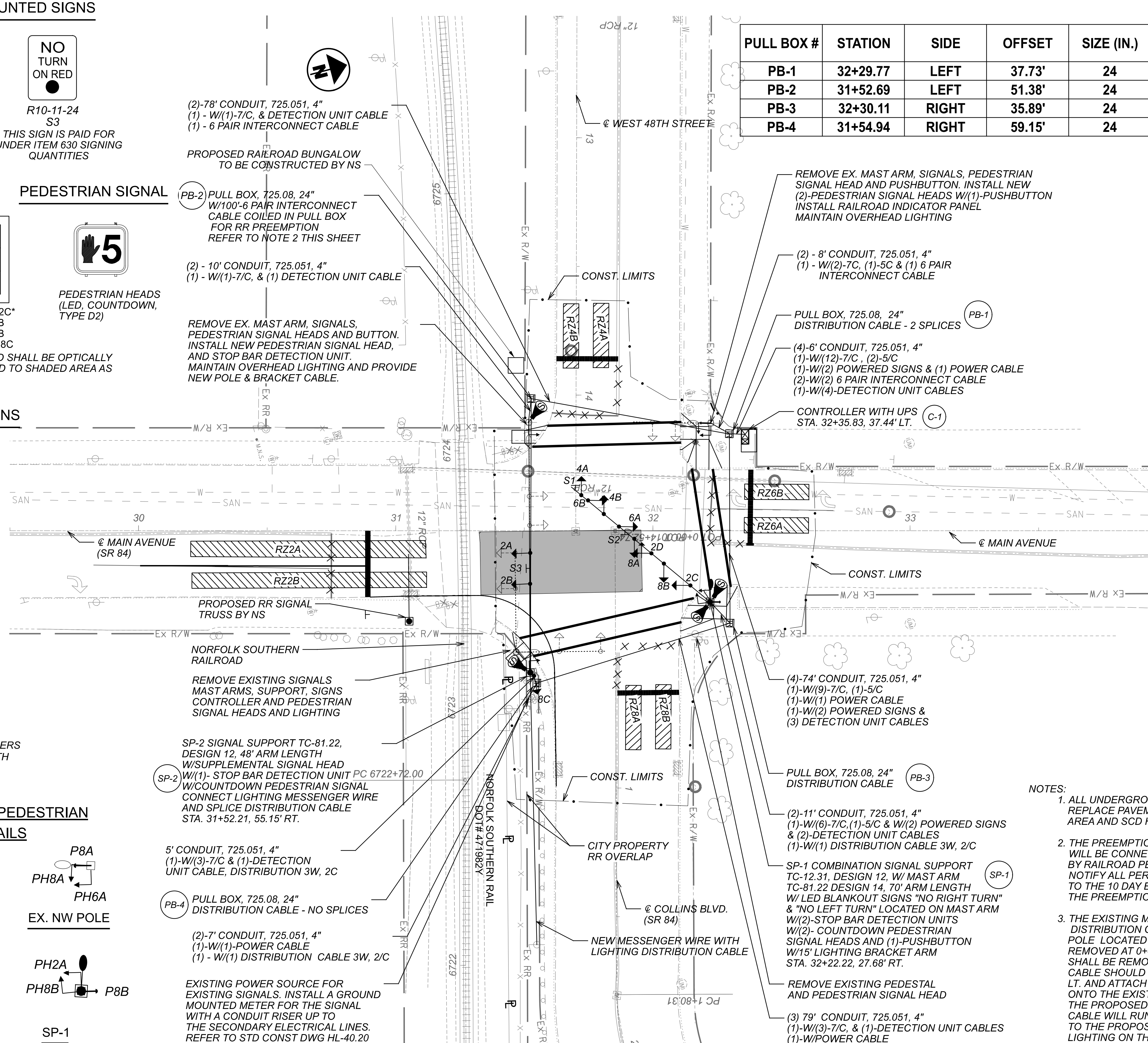
SIGNAL POLE & PEDESTRIAN POLE DETAILS

EX. SW POLE: PH6B

EX. NW POLE: P8A, PH8A, PH6A

SP-2: PH2B, 8C

SP-1: PH2A, PH8B, P8B



PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB-1	32+29.77	LEFT	37.73'	24
PB-2	31+52.69	LEFT	51.38'	24
PB-3	32+30.11	RIGHT	35.89'	24
PB-4	31+54.94	RIGHT	59.15'	24

LEGEND

	PROP	EXIST
TRAFFIC SIGNAL, 2 UNIT, 3 UNIT, OR PHB HEAD, 12"		
TRAFFIC SIGNAL, 4 OR 5 UNIT HEAD, 12"		
STOP-LINE RADAR DETECTION UNIT		
SIGNAL SUPPORT POLE		
PEDESTRIAN HEAD		
PEDESTRIAN PUSH BUTTON		
PEDESTAL SUPPORT		
LUMINAIRE, CONVENTIONAL		
CONTROLLER CABINET AND WORK PAD (TS-2)		
TRAFFIC PULL BOX		
DETECTION ZONE		
OPTICALLY PROGRAMMABLE AREA		
SINGLE POST SIGN		

HORIZONTAL SCALE IN FEET 0 10 20 40

NOTES:

1. ALL UNDERGROUND WORK WILL BE OPEN TRENCH. REPLACE PAVEMENT PER ITEM 625-TRENCH IN PAVED AREA AND SCD HL-30.22
2. THE PREEMPTION CABLE (6 PAIR INTERCONNECT CABLE) WILL BE CONNECTED TO THE NEW RAILROAD BUNGALOW BY RAILROAD PERSONAL. THE CONTRACTOR SHALL NOTIFY ALL PERSONAL AS DESCRIBED IN THE NOTES PRIOR TO THE 10 DAY BURN TEST TO PERFORM A ON-SITE TEST OF THE PREEMPTION.
3. THE EXISTING MESSENGER WIRES WITH EXISTING LIGHTING DISTRIBUTION CABLE THAT RUNS FROM THE EXISTING LIGHT POLE LOCATED AT 1+60, LT. TO EXISTING SIGNAL POLE TO BE REMOVED AT 0+40 AND ONTO THE EXISTING SIGNAL POLE 14+10, LT SHALL BE REMOVED. A NEW MESSENGER WIRE AND DISTRIBUTION CABLE SHOULD BE INSTALLED AT THE EXISTING LIGHT POLE AT 1+60, LT. AND ATTACH TO THE NEW SIGNAL POLE SP-2 AND CONTINUE ONTO THE EXISTING SIGNAL POLE 14+40, LT. PROVIDE A SPLICE AT THE PROPOSED SIGNAL POLE SP-2. AT THE SPLICE THE DISTRIBUTION CABLE WILL RUN UNDERGROUND UTILIZE THE PROPOSED CONDUITS TO THE PROPOSED SIGNAL POLE SP-1 TO POWER THE PROPOSED LIGHTING ON THE SIGNAL POLE.

ATB-MAIN & W. 48TH STREET SIGNAL PLAN

DESIGN AGENCY Mead & Hunt

CLIENT

DESIGNER DLW

REVIEWER SJS 07/06/22

PROJECT ID 113599

SHEET P.18 TOTAL 22

ATB MAIN & W 48TH ST.

MODEL: Plan [Sheet] PAPERSIZE: 34x22 (in.) DATE: 10/27/2022 TIME: 7:24:13 AM USER: l426egd
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SIGNAL TIMING CHART

INTERSECTION: MAIN STREET AND W 48TH STREET									
MAINTAINING AGENCY: THE CITY OF ASHTABULA									
START UP		DUAL ENTRY: YES		PHASES:			2+6		
		REST IN RED:		RING 1 -			RING 2 -		
START IN: ALL RED		OVERLAP				A	B	C	D
TIME FOR FLASH OR ALL RED: 5 sec									
FIRST PHASE(S): 2+6		PHASES				-	-	-	-
COLOR DISPLAYED: GREEN									
INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)		1	2	3	4	5	6	7	8
DIRECTION		-	NB	-	EB	-	SB	-	WB
MINIMUM GREEN (INITIAL)	(SEC.)		25		20		25		20
ADDED INITIAL	*(SEC./ACTUATION)								
MAXIMUM INITIAL	(SEC.)								
PASSAGE TIME (PRESET GAP)	(SEC.)		1		0.5		1		0.5
TIME BEFORE REDUCTION	*(SEC.)								
MINIMUM GAP	*(SEC.)								
TIME TO REDUCE	*(SEC.)								
MAXIMUM GREEN I	(SEC.)		40		20		40		20
MAXIMUM GREEN II	(SEC.)								
YELLOW CHANGE	(SEC.)		3.5		3.5		3.5		3.5
ALL RED CLEARANCE	(SEC.)		3		2		3		2
WALK	(SEC.)		8		-	-	8		8
PEDESTRIAN CLEARANCE	(SEC.)		15		-	-	15		11
RECALL — MAXIMUM	(ON/OFF)	-	OFF	-	OFF	-	OFF	-	OFF
RECALL — MINIMUM	(ON/OFF)	-	ON	-	OFF	-	ON	-	OFF
RECALL — PEDESTRIAN	(ON/OFF)	-	OFF	-	OFF	-	OFF	-	OFF
MEMORY	(ON/OFF)	-	ON	-	OFF	-	ON	-	OFF

*VOLUME DENSITY CONTROLS

NOTES:

1. *ALL MOVEMENTS ARE ACTUATED. THE PRIMARY THRU MOVEMENT SHOULD HAVE MIN RECALL ACTIVE TO REST IN GREEN.*

2. *NEW PRE-SIGNAL WILL OPERATE ø2*

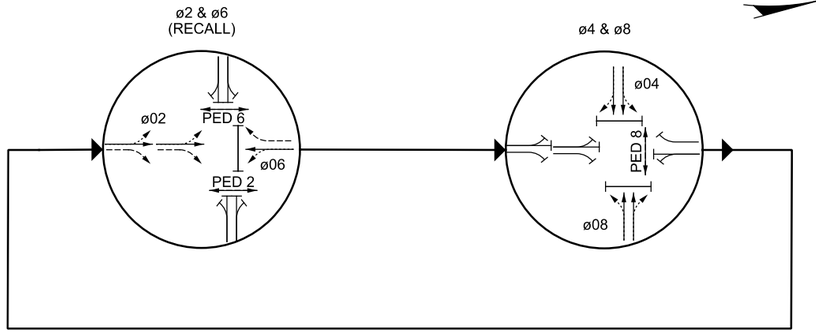
3. *ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.*

4. *FOR ANY ENTRY TO FLASHING OPERATION, PROGRAMMING SHALL RUN MINOR STREET GREEN (TYP. ø4 & ø8), ALL-RED CLEARANCE, AND THEN FLASHING OPERATION.*

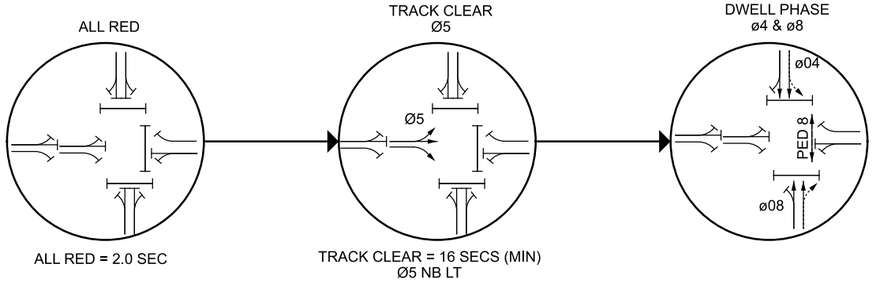
RADAR DETECTION CHART

DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY PROGRAMMED IN CONTROLLER (SEC.)	EXTENSION PROGRAMMED IN CONTROLLER (SEC.)	DELAY INHIBITED PHASE	PURPOSE	DETECTION ZONE LENGTH (FT)
RDZ2A	NB TH/LT	PRESENCE	2				CALL/EXTEND PHASE 2	90'
RDZ2B	NB RT	PRESENCE	2				CALL/EXTEND PHASE 2	90'
RDZ4A	EB TH/LT	PRESENCE	4				CALL/EXTEND PHASE 4	30'
RDZ4B	EB TH/RT	PRESENCE	4				CALL/EXTEND PHASE 4	30'
RDZ6A	SB TH/LT	PRESENCE	6				CALL/EXTEND PHASE 6	30'
RDZ6B	SB RT	PRESENCE	6				CALL/EXTEND PHASE 6	30'
RDZ8A	WB TH/LT	PRESENCE	8				CALL/EXTEND PHASE 8	30'
RDZ8B	WB TH/RT	PRESENCE	8				CALL/EXTEND PHASE 8	30'

PHASING DIAGRAM



PREEMPTION PHASING DIAGRAM



LED BLANKOUT SIGNS S1 & S2 SHALL BE ACTIVE DURING ALL PHASES OF PREEMPTION

NOTE: ONCE A PREEMPTION CALL IS RECEIVED AT THE SIGNAL CONTROLLER, THE PEDESTRIAN SIGNAL HEADS WILL EITHER BEGIN AND/OR COMPLETE IT'S CLEARANCE PHASE (FLASHING DON'T WALK) PRIOR TO ENTERING THE ALL RED PHASE.

LEGEND	
VEHICLE ø	
PERMITTED ø	

ATB MAIN & W 48TH ST.

MODEL: Sheet PAPERSIZE: 34x22 (In.) DATE: 10/27/2022 TIME: 7:24:4 AM USER: 1426egd
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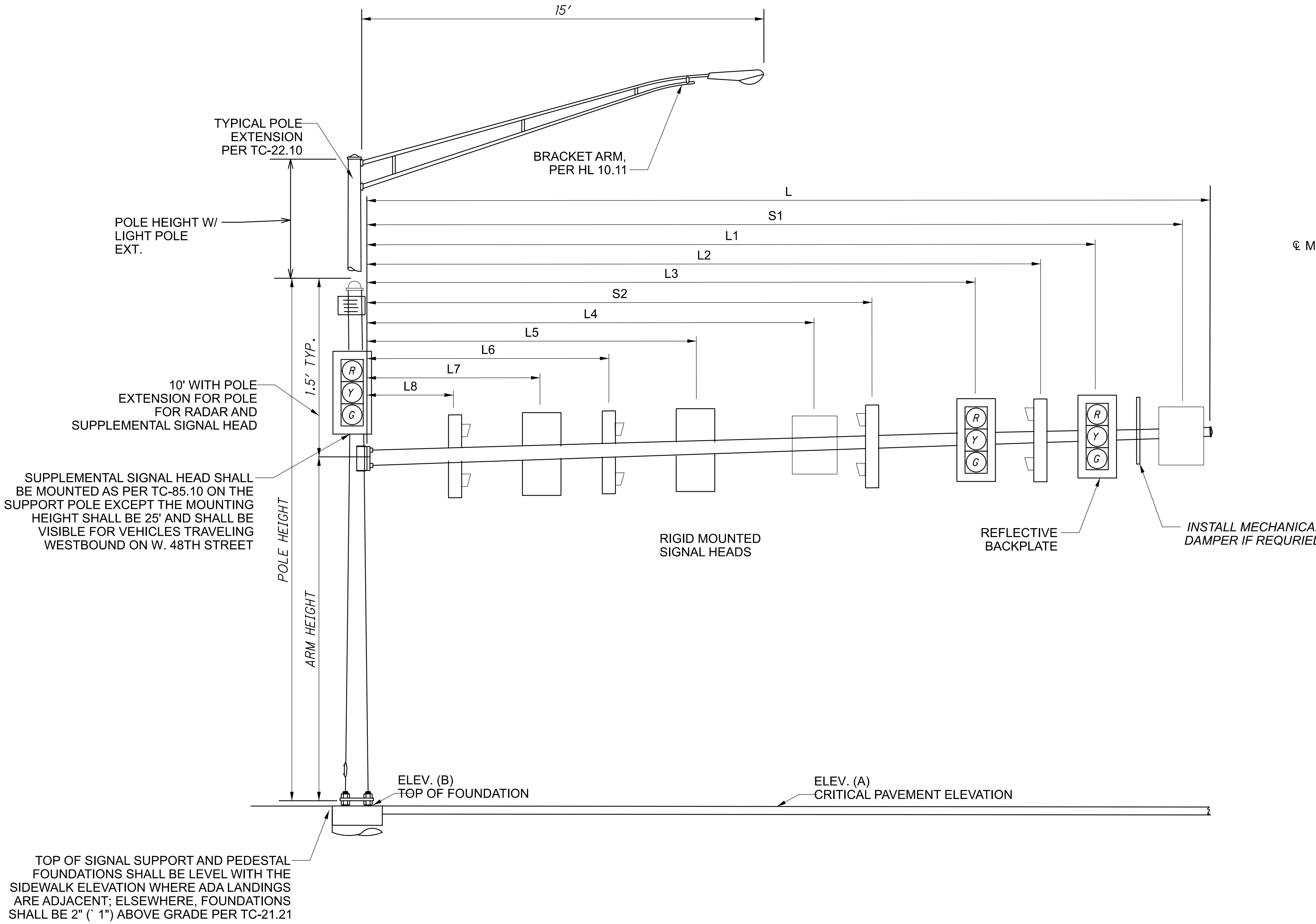
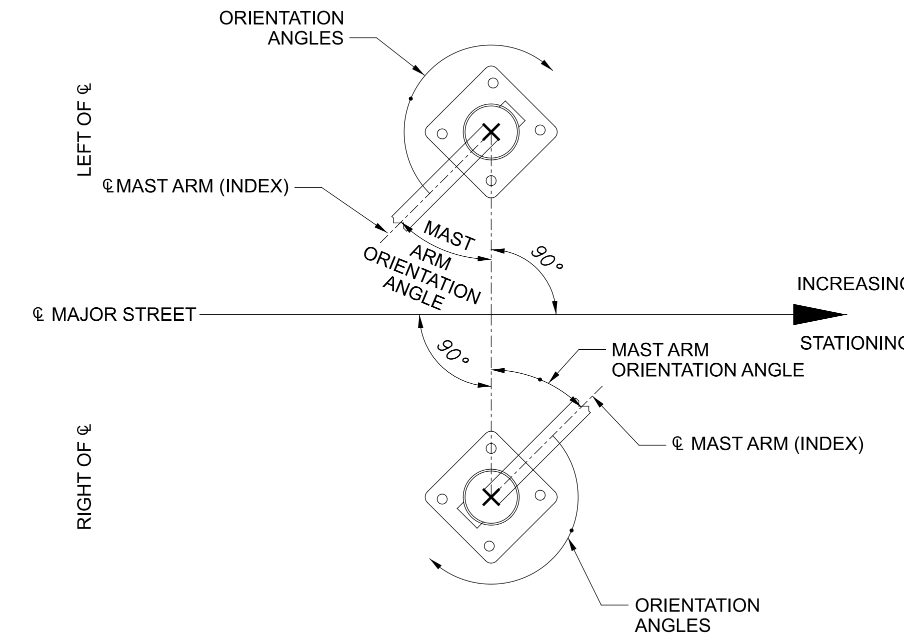
ATB-MAIN & W. 48TH STREET
SIGNAL DETAILS

DESIGN AGENCY Mead & Hunt
CLIENT
DESIGNER DLW
REVIEWER SJS 07/06/22
PROJECT ID 113599
SHEET P.19 TOTAL 22





SIGNAL POLE ORIENTATION

NOTES:

- ALL ANGLES ARE MEASURED CLOCKWISE.
- THE INDEX FOR EXISTING POLES IS THE EXISTING MAST ARM TO BE REMOVED.

SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS															ORIENTATION ANGLES FROM MAST ARM										
			A	B	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	L4	L5	L6	L7	L8	S1	S2	MAST ARM A ANGLE	MAST ARM B ANGLE	PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	CONTROLLER	BRACKET ARM	HANDHOLE	CABLE ENTRANCE 12" FROM TOP	POLE MOUTED SIGNAL HEAD	STOP BAR DETECTOR
							FT	FT	FT	FT	FT	FT				FT		FT	FT	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG
SP-1	32+22.22	27.68' RT	702.7	703.73	TC-12.31	12	34	19																						
			MAST	ARM	TC-81.22	14			70	65	62	54	46	39	30	24	10	68	43	310	-	47/313	140	-	-	50	180	-	-	79/260
SP-2	31+52.21	55.15' RT	702.21	702.58	TC-81.22	12	23	19.5	48	46	34							40		0	-	0	-	-	-	-	180	-	-	305
EX. SW POLE	31+52.69	51.38' LT																		-	-	0	-	-	-	-	-	-	-	221
EX NW POLE	32+29.77	37.73' LT																		-	-	0/90	0	-	-	-	-	-	-	-

ATB-MAIN & W. 48TH STREET SIGNAL DETAILS

DESIGN AGENCY: Mead & Hunt

CLIENT

DESIGNER: DLW

REVIEWER: SJS 07/06/22

PROJECT ID: 113599

SHEET: P.20 TOTAL: 22

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ATB MAIN & W 48TH ST.

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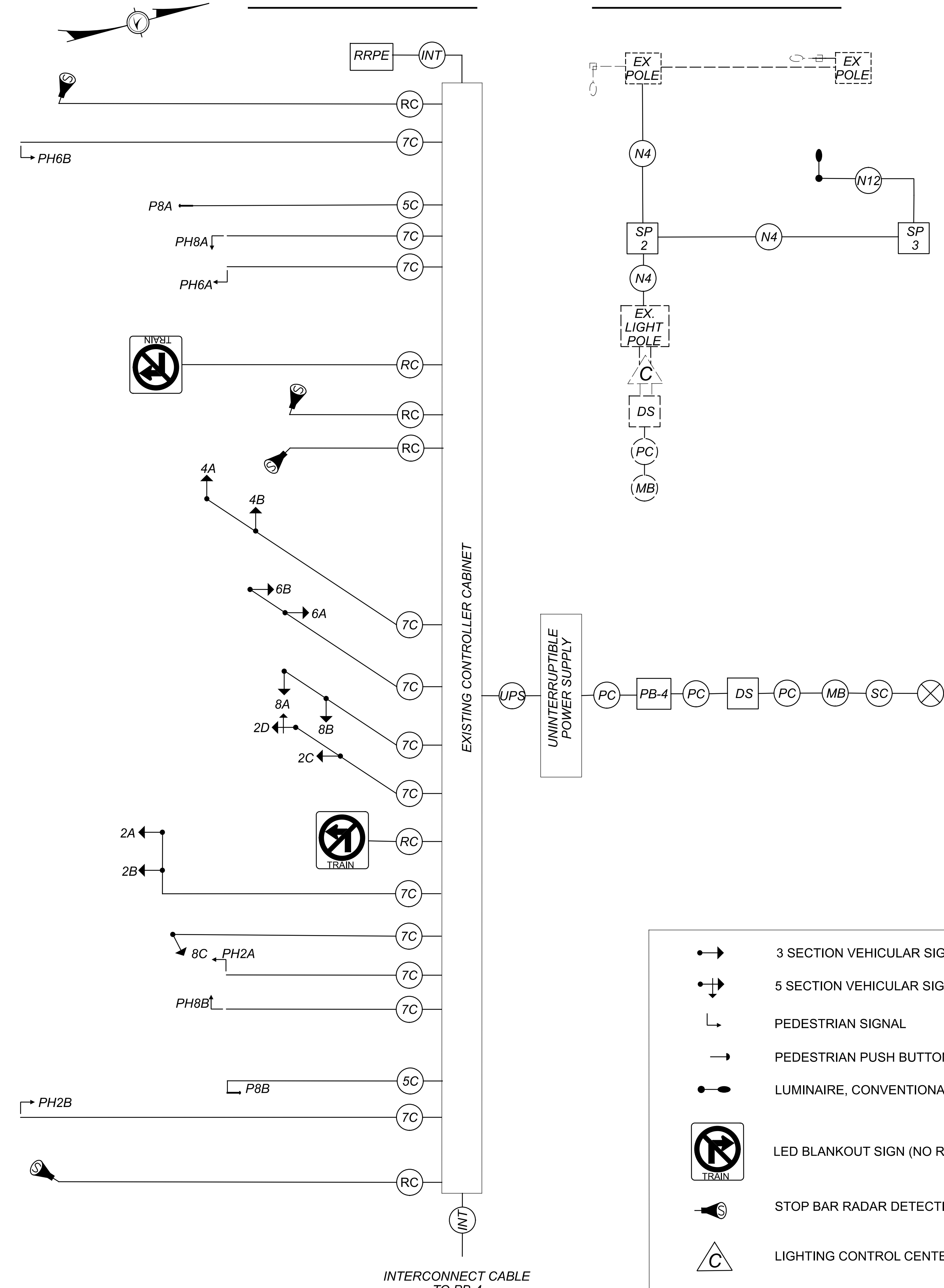
SIGNAL WIRING DIAGRAM

LIGHTING WIRING DIAGRAM



FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2A, 2B (NB)	R	Ø 2R	R
	Y	Ø 2Y	
	G	Ø 2G	
	-	-	
	-	-	
-	-	-	-
	-	-	
	-	-	
	-	-	
	-	-	
4A, 4B (EB)	R	Ø4R & LS 14R (DWELL)	R
	Y	Ø4Y & LS 14Y (DWELL)	
	G	Ø4G & LS 14G (DWELL)	
	-	-	
	-	-	
6A, 6B (SB)	R	Ø 6R	R
	Y	Ø 6Y	
	G	Ø 6G	
-	-	-	-
	-	-	
	-	-	
	-	-	
	-	-	
8A, 8B, 8C (WB)	R	Ø8R & LS 14 R (DWELL)	R
	Y	Ø8Y & LS 14 Y (DWELL)	
	G	Ø8G & LS 14 G (DWELL)	
LS = LOAD SWITCH			

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2D (NB)	R	Ø2R & LS 13R (TRACK CLEAR)	R
	Y	Ø2Y & LS 13Y (TRACK CLEAR)	
	G	Ø2Y & LS 13Y (TRACK CLEAR)	
	<--Y---	LS 13Y (TRACK CLEAR)	
	<--G---	LS 13G (TRACK CLEAR)	
2C (NB RT)	R	Ø2R & LS 13R (TRACK CLEAR)	R
	Y	Ø2Y & LS 13Y (TRACK CLEAR)	
	G	Ø2Y & LS 13Y (TRACK CLEAR)	
	-	-	
	-	-	
PEDESTRIAN MOVEMENTS			
PED 2	W	2 PED/ LS 10 G	OUT
	DW	2 PED/ LS 10 R	
PEDESTRIAN MOVEMENTS			
PED 6	W	6 PED/ LS 11 G	OUT
	DW	6 PED/ LS 11 R	
PED 8	W	8 PED/ LS 12 G	OUT
	DW	8 PED/ LS 12 R	
OVERLAPS			
OLA	R	Ø2R & LS 13R (TRACK CLEAR)	R
	Y	Ø2Y & LS 13Y (TRACK CLEAR)	
	G	Ø2Y & LS 13Y (TRACK CLEAR)	
	<--Y---	LS 13Y (TRACK CLEAR)	
	<--G---	LS 13G (TRACK CLEAR)	
S1	"NO RIGHT TURN"	LS 15 R	OUT
S2	"NO LEFT TURN"	LS 15 R	OUT

LS 13 ONLY ACTIVATED DURING TRACK CLEAR OF THE PREEMPTION - GREEN/YELLOW ARROW & GREEN/YELLOW BALL
LS 14 ONLY ACTIVATED DURING DWELL OF PREEMPTION - ACTIVATES PHASE 4+8
LS 15 ONLY ACTIVATE DURING ALL PHASES OF PREEMPTION - LED BLANKOUT SIGNS S1 & S2

LEGEND

- 3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- 5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY
- PEDESTRIAN SIGNAL
- PEDESTRIAN PUSH BUTTON
- LUMINAIRE, CONVENTIONAL
- LED BLANKOUT SIGN (NO RIGHT TURN/NO LEFT TURN)
- STOP BAR RADAR DETECTION UNIT
- LIGHTING CONTROL CENTER
- INT — 6 PAIR INTERCONNECT CABLE
- RC — RADAR DETECTION CABLE/ POWER CABLE FOR BLANKOUT SIGN
- POWER SOURCE
- SC — SERVICE CABLE, 3 CONDUCTOR, NO. 4 AWG
- PC — POWER CABLE, 2 CONDUCTOR, NO. 4 AWG
- MB — METER BASE
- DS — DUAL LIGHTING/SIGNAL DISCONNECT SWITCH
- UPS — UNINTERRUPTIBLE POWER SUPPLY CABLE
- RRPE — RAILROAD PREEMPTION INDICATOR PANEL
- SP 1 — SIGNAL SUPPORT POLE NO.
- N4 — NO. 4 AWG DISTRIBUTION CABLE (3 WIRE, 2 CONDUCTOR)
- N12 — NO. 12 AWG POLE & BRACKET CABLE (2 WIRE, 2 CONDUCTOR)
- PE — PHOTOELECTRIC CELL
- 7C — SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
- 5C — SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
- PBX — PULL BOX NUMBER

ATB-MAIN & W. 48TH STREET
SIGNAL DETAILS

DESIGN AGENCY Mead & Hunt
CLIENT
DESIGNER DLW
REVIEWER SJS 07/06/22
PROJECT ID 113599
SHEET P.21 TOTAL 22

MATERIAL SPECIFICATIONS FOR BBS GENERATOR POWER PANEL EQUIPMENT

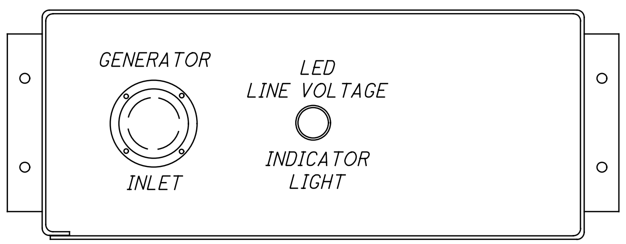
GENERATOR INLET - The inlet shall be 30 amp, 125/250V, locking, four (4) wire grounding and meet the NEMA configuration number L14-30-P 30A 125/250V specification. The inlet shall be a Hubbell catalog #2715.

LINE VOLTAGE GENERATOR SWITCH - The switch shall be 30 amp, 125/250V AC, two (2) pole, three (3) position (On, Off, On). The switch shall be a Hubbell catalog #1388.

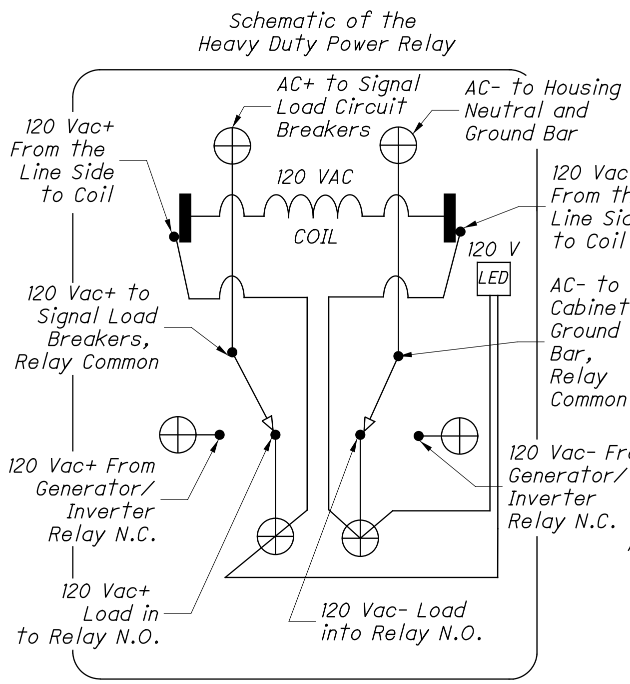
LINE VOLTAGE INDICATOR LIGHT - The indicator light shall be 125V AC light emitting diode with a red lens.

LINE VOLTAGE CIRCUIT BREAKER - The circuit breaker shall be single pole single throw and a minimum of 30 amps. The amperage shall be increased to accomodate greater loads, if necessary. The gauge of the power cable shall be of proper size per N.E.C.

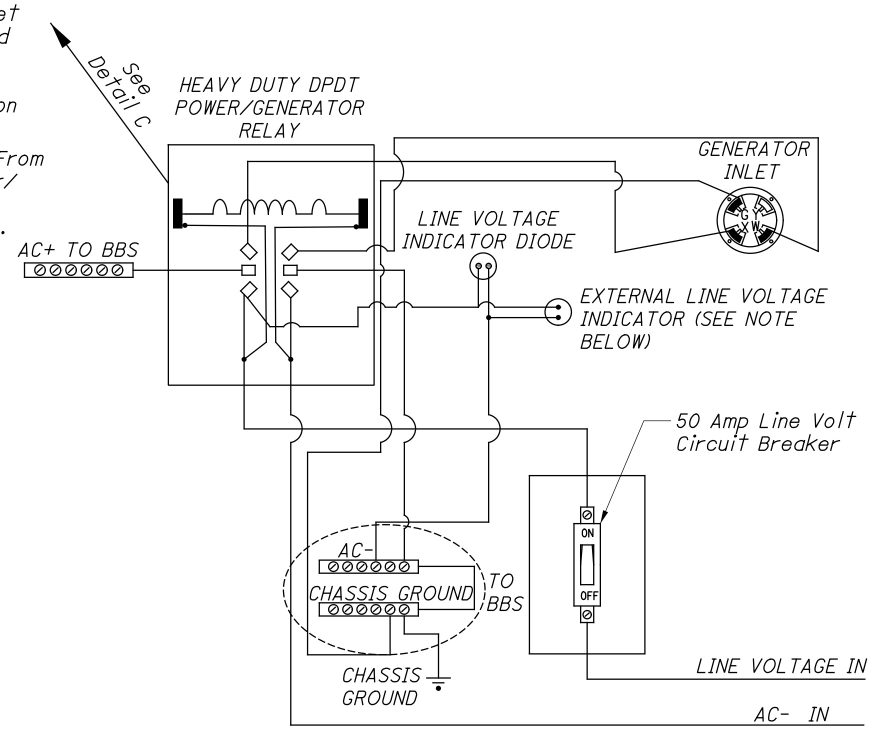
EXTERNAL LINE VOLTAGE INDICATOR LIGHT - The indicator light shall be a 1" waterproof NEMA 4X or IP66 LED lamp with a green lens.



FRONT VIEW OF GENERATOR POWER PANEL



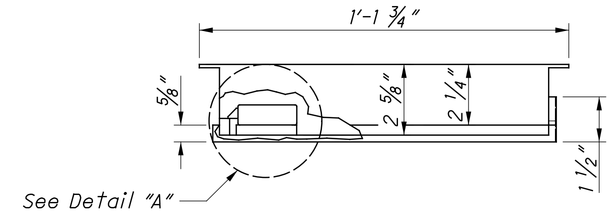
DETAIL "C"
SCHEMATIC OF THE H.D.
DPDT GEN / POWER RELAY



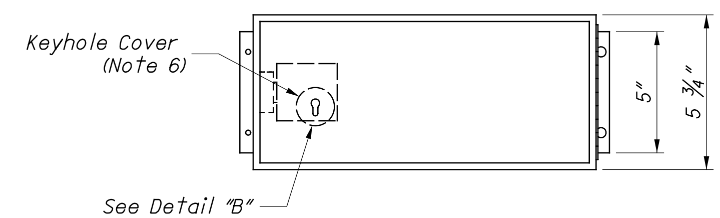
ELECTRICAL HOOKUP DETAIL FOR THE BBS GENERATOR POWER PANEL

NOTE: EXTERNAL LINE VOLTAGE INDICATOR LIGHT required when called for in the plans. EXTERNAL LINE VOLTAGE INDICATOR LIGHT shall be located on the enclosure exterior for visibility from the adjacent roadway when all cabinet, and generator panel doors are closed.

GENERATOR POWER PANEL ENCLOSURE



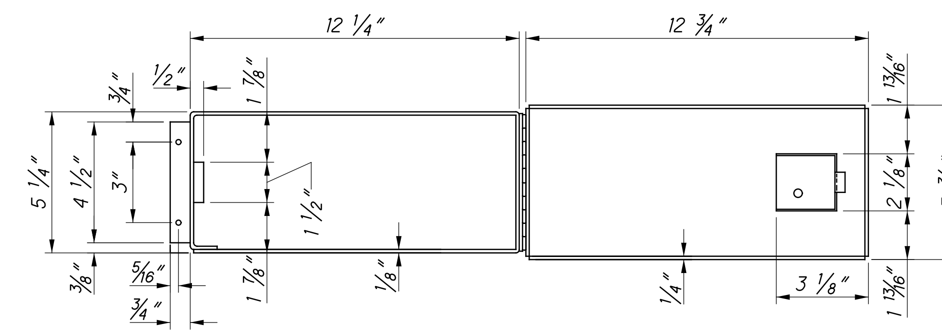
TOP VIEW



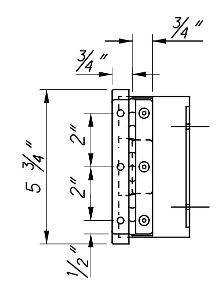
FRONT VIEW CLOSED DOOR

NOTES:

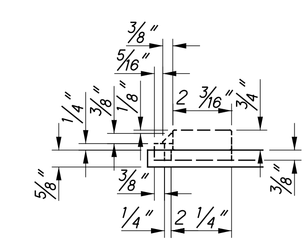
1. The enclosure shall be constructed of 1/8" thick alumimum.
2. The lock shall be the standard police door type, keyed with the standard flasher door skeleton key.
3. The door shall be sealed with a foam rubber gasket to prevent moisture from entering the enclosure.
4. The enclosure shall be mounted onto the outside of the controller cabinet with non-accessible bolts and sealed with a high quality silicon caulk at all surfaces touching the cabinet.
5. The hinge shall be of stainless steel or equivalent corrosive-resistant material.
6. Keyhole shall be covered with a movable circular aluminum or brass cover with top pivot pin.



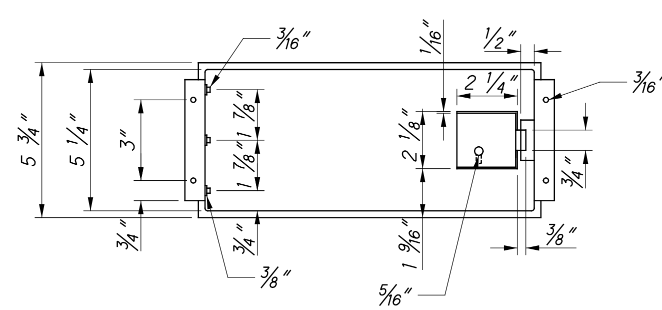
FRONT VIEW OPEN DOOR



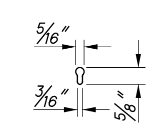
RIGHT SIDE VIEW
CLOSED DOOR



DETAIL "A"



BACK VIEW CLOSED DOOR



DETAIL "B"

THIS DRAWING REPLACES PIS 203012 DATED 04-20-2012.

PLAN INSERT SHEET
BATTERY BACKUP SYSTEM (BBS) GENERATOR POWER PANEL

DESIGN AGENCY: Mead & Hunt
CLIENT
DESIGNER: DLW
REVIEWER: SJS 07/06/22
PROJECT ID: 113599
SHEET: P.22 TOTAL: 22

ATB MAIN & W 48TH ST.

MODEL: Sheet PAPERSIZE: 34x22 (in.) DATE: 10/27/2022 TIME: 7:24:16 AM USER: l426eqd
X:\40\2500\20017_01\10988_VAR-STW GES ORDC 2020\113599_ATB-Main and W 48th St\400-Engineering\Signals\Sheets\113599_CM002.dgn