

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



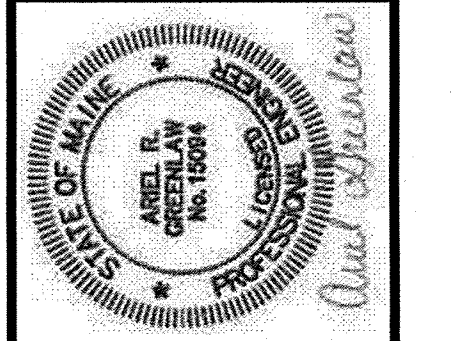
BANGOR/BREWER PENOBSCOT COUNTY I-95/I-395 FEDERAL PROJECT NO. 2532500

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED: *[Signature]* DATE: 12-13-23

COMMISSIONER: *[Signature]*

CHIEF ENGINEER: *[Signature]* 12-13-23



[Signature]
SIGNATURE
15094
P.E. NUMBER
December 11, 2023
DATE

INDEX OF SHEETS

Title Sheet 1

General Notes & Details 2-4

Site Plans 1-5 5-9

PROJECT INFORMATION

PROGRAM	DAN LORING
PROJECT MANAGER	ABEL GREENLAW
DESIGNER	HNTB
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

INSTALLATION OF
HIGHWAY TRAFFIC CAMERAS

TITLE SHEET

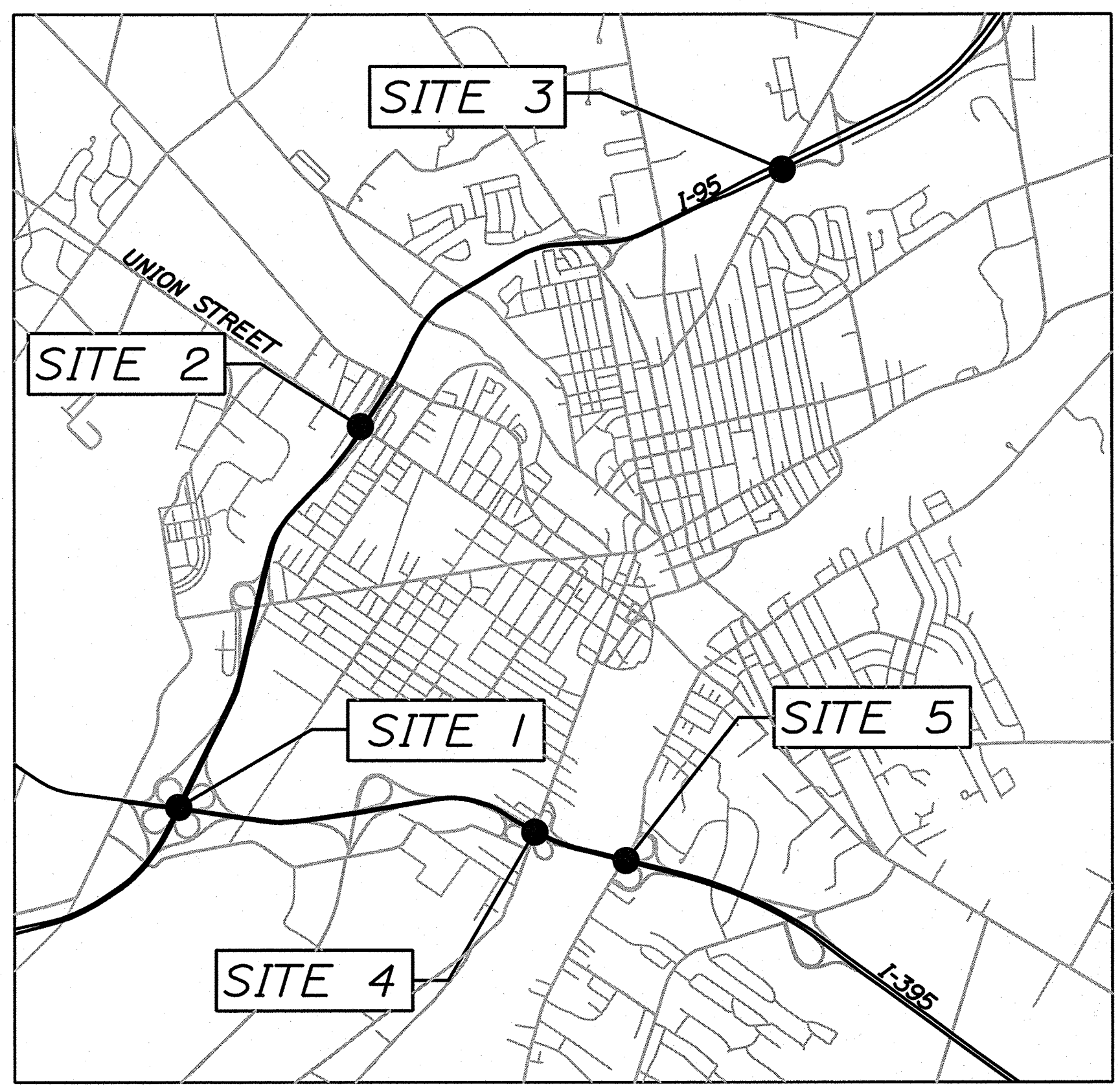
SHEET NUMBER

1

OF 9

INSTALLATION OF HIGHWAY TRAFFIC CAMERAS FIVE LOCATIONS

- Site 1: Bangor, I-95 SB South of I-395 EB
- Site 2: Bangor, I-95 NB Near Union Street
- Site 3: Bangor, I-95 NB South of Stillwater Avenue
- Site 4: Bangor, I-395 EB Near Main Street
- Site 5: Brewer, I-395 WB Near South Main St



LOCATION MAP

PLAN LEGEND

OVERHEAD UTILITY	OHU
CONDUIT - COMMUNICATION	—T—T—
CONDUIT - POWER	—E—E—
UTILITY POLES	⊙ EXISTING ⊙ PROPOSED
CABINETS	▣ EXISTING ▣ PROPOSED
HIGHWAY TRAFFIC FTZ CAMERA	— EXISTING — PROPOSED

PROJECT LOCATION	STATEWIDE
PROGRAM AREA	MULTIMODAL
OUTLINE OF WORK	THIS PROJECT WILL INSTALL HIGHWAY TRAFFIC CAMERAS AT CRITICAL LOCATIONS IN THE GREATER BANGOR REGION TO ASSIST WITH INCIDENT MANAGEMENT, REUSING EXISTING STRUCTURES AS MUCH AS POSSIBLE.



GENERAL NOTES

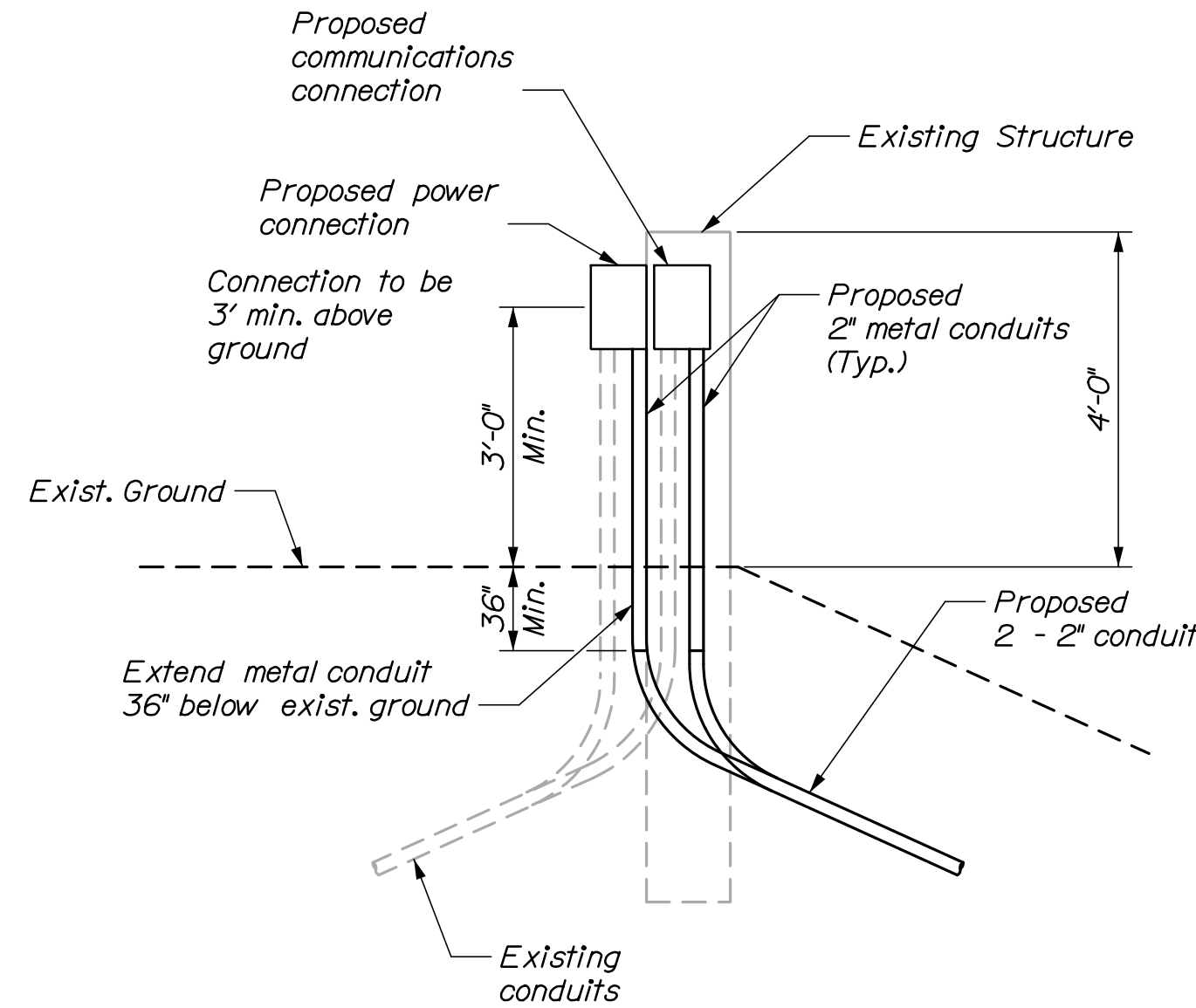
1. NO FORMAL SURVEY WAS CONDUCTED FOR THE CONSTRUCTION OF THIS PROJECT. CONDUITS, POLES, CABINETS AND OTHER ASSOCIATED ITEMS WERE NOT ASSIGNED GPS COORDINATES. DESIGN WAS BASED ON AERIAL PHOTOGRAPHY. CONTRACTOR SHALL VERIFY ALL SITE INFORMATION PRIOR TO COMMENCING ANY WORK.
2. ALL EXISTING MAINEDOT RIGHT OF WAY (ROW) LINES SHOWN ON PLANS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR. ALL WORK SHALL BE CONDUCTED COMPLETELY WITHIN THE EXISTING ROW. PROPOSED POLE LOCATIONS ARE TO BE VERIFIED BY THE RESIDENT PRIOR TO INSTALLATION TO ENSURE NO WORK IS CONDUCTED OUTSIDE OF LIMITS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ACTUAL ELEVATIONS AND MOUNTING HARDWARE FOR THE HIGHWAY TRAFFIC CAMERA EQUIPMENT INSTALLATIONS.
4. ALL NON-PAVED AREAS UNDISTURBED DURING CONSTRUCTION SHALL BE LOAMED AND SEEDED, UNLESS OTHERWISE DIRECTED BY THE RESIDENT. ANY DAMAGE TO EXISTING ROADS, SLOPES OR PIPES CAUSED BY THE CONTRACTOR'S EQUIPMENT, PERSONNEL OR OPERATION SHALL BE REPAIRED TO THE SATISFACTION OF THE RESIDENT AT THE CONTRACTOR'S EXPENSE.
5. CLEARING LIMITS SHALL BE ESTABLISHED IN THE FIELD BY THE RESIDENT.
6. THE LOCATION OF EXISTING UTILITIES AND DRAINAGE ARE NOT SHOWN ON THE PLANS. CONTRACTOR SHALL DETERMINE UTILITY LOCATIONS PRIOR TO BEGINNING ANY WORK. ALL UTILITY SPLICES WILL BE MADE IN THE CABINETS OR JUNCTION BOXES MEETING MAINEDOT SPECIFICATIONS.
7. THE CONTRACTOR SHALL TEST EXISTING EARTH TO GROUND RESISTANCE AT EACH HARDWARE AND CABINET LOCATION TO ENSURE A MINIMUM OF 25 OHMS IS MET. IF ANY LOCATION DOES NOT MEET THE MINIMUM GROUNDING REQUIREMENTS, THE CONTRACTOR SHALL INSTALL AND CONNECT ADDITIONAL GROUND RODS TO MEET THE 25 OHMS OR THE MANUFACTURER'S GROUNDING RECOMMENDATION, WHICHEVER IS MORE STRINGENT. GROUND RODS AND CONNECTIONS SHALL FOLLOW ALL NEC GUIDELINES AND SHALL BE INCIDENTAL TO OTHER CONTRACT ITEMS.
8. ALL REQUIRED CLEARING FOR HIGHWAY TRAFFIC CAMERA INSTALLATION AND CONDUIT SHALL BE INCIDENTAL TO HIGHWAY TRAFFIC CAMERA (ITEM 654.10)

EXISTING EQUIPMENT

9. THE CONTRACTOR SHALL CLEAN THE INTERIOR OF ALL EXISTING EQUIPMENT CABINETS INCLUDED IN THE PROJECT. THE CABINET, INCLUDING ALL CABLING AND WIRING, SHALL APPEAR NEAT AND TIDY. THE CONTRACTOR SHALL REPLACE ALL ACCESSORY EQUIPMENT IN EXISTING CABINETS THAT HAVE FAILED AND/OR REACHED THE END OF USEFUL LIFE, INCLUDING, BUT NOT LIMITED TO, FANS, HEATERS, SURGE PROTECTORS, FILTERS AND LIGHTBULBS. THIS WORK SHALL BE INCIDENTAL TO HIGHWAY TRAFFIC CAMERA (ITEM 654.10).

PROPOSED EQUIPMENT

10. THE FOLLOWING ABBREVIATIONS CAN BE FOUND ON THE SITE PLANS:
PTZ = PAN TILT ZOOM
LAT = LATITUDE
LONG = LONGITUDE
OHSS = OVERHEAD SIGN STRUCTURE
11. THE CONTRACTOR SHALL LEAVE ONE COPY OF AS-BUILT PLANS, WIRING DIAGRAMS, CABINET BLOCK DIAGRAMS AND EQUIPMENT MANUALS IN ALL EQUIPMENT CABINETS.
12. CONTRACTOR SHALL VERIFY LINE VOLTAGE AND PROVIDE ANY STEP DOWN TRANSFORMERS AS NEEDED. ALL LINE VOLTAGES SHALL BE 120 VOLTS.
13. COMMUNICATIONS AND POWER CONNECTIONS SHOWN IN PLANS ARE APPROXIMATE AND SHALL BE CONFIRMED DURING FIELD COORDINATION AFTER CONTRACT AWARD WITH THE RESIDENT ENGINEER.
14. MAINEDOT WILL PROVIDE INTEGRATION FOR HIGHWAY TRAFFIC CAMERAS INTO NEW ENGLAND COMPASS SII. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT COMMUNICATION CAN BE MADE TO AND FROM THE DEVICES. THE CONTRACTOR SHALL SUPPLY MAINEDOT WITH THE CAMERA STATION LICENSE AND NETWORK THE CAMERA IN SUCH A WAY THAT IT CAN BE INTEGRATED INTO COMPASS. THE CONTRACTOR MUST PROVIDE MAINEDOT'S ITS GROUP WITH CAMERA'S EXTERNAL IP ADDRESS.
15. HIGHWAY TRAFFIC CAMERA SYSTEMS SHALL BE INSTALLED SUCH THAT UPSTREAM AND DOWNSTREAM TRAFFIC CAN BOTH BE OBSERVED. IF RELOCATION IS REQUIRED TO IMPROVE PAN TILT ZOOM CAPABILITIES, THIS WORK SHALL BE INCIDENTAL TO HIGHWAY TRAFFIC CAMERA (ITEM 654.10).
16. HIGHWAY TRAFFIC CAMERAS SHALL BE AXIS MODEL Q6225-LE PTZ CAMERA WITH COMPATIBLE WIPER KIT OR APPROVED EQUAL.
17. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING COMMUNICATIONS AND ANY WORK REQUIRED TO PREPARE COMMUNICATIONS AT EACH SITE. ALL COMMUNICATIONS AND ANCILLARY EQUIPMENT WILL BE INCIDENTAL TO HIGHWAY TRAFFIC CAMERA (ITEM 654.10). INSTALLATION OF RADIO LINKS AS NOTED AT SITES 1 AND 2 SHALL BE PAID FOR AS POINT TO POINT WIRELESS LINK (ITEM 654.34). LINKS SHALL BE UBIQUITI BRAND NBE-5AC-GEN2 OR APPROVED EQUAL.
18. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING POWER METERS IF REQUIRED. ALL WORK SHALL CONFORM WITH THE LOCAL UTILITY REQUIREMENTS. THIS WORK SHALL BE INCIDENTAL TO HIGHWAY TRAFFIC CAMERA (ITEM 654.10).
19. HIGHWAY TRAFFIC CAMERA CONTROLLER CABINET AND ANCILLARY EQUIPMENT SHALL BE INCIDENTAL TO HIGHWAY TRAFFIC CAMERA (ITEM 654.10).
20. CONTRACTOR IS RESPONSIBLE FOR DEVELOPING CONNECTION DETAILS FOR EXTENSION ARMS AND LOWERING DEVICES. ALL ASSOCIATED MATERIALS SHALL BE INCIDENTAL TO THE FOLLOWING PAY ITEMS:
- CAMERA CONNECTION - MAST ARM (ITEM 654.101)
- CAMERA CONNECTION - HIGH MAST LIGHT (ITEM 654.102)
- CAMERA CONNECTION - OVERHEAD SIGN STRUCTURE (ITEM 654.103)



CONNECTIONS ON EXISTING STRUCTURES
NOT TO SCALE

NOTES:

1. Payment for metal conduit and connections shall be Metallic Conduit (626.21).

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

25325.00

WIN
25325.00

PROJ. MANAGER	D. LORING	BY	A. GREENLAW	DATE	12/23
DESIGN-DETAILED	W. LAVALLÉE	CHECKED-REVIEWED	A. GREENLAW	DATE	12/23
DESIGN-DETAILED	A. GREENLAW	DESIGN-DETAILED	P. BEGIN	SIGNATURE	
REVISIONS 1		REVISIONS 1		P.E. NUMBER	
REVISIONS 2		REVISIONS 2		DATE	
REVISIONS 3		REVISIONS 3			
REVISIONS 4		REVISIONS 4			
FIELD CHANGES					

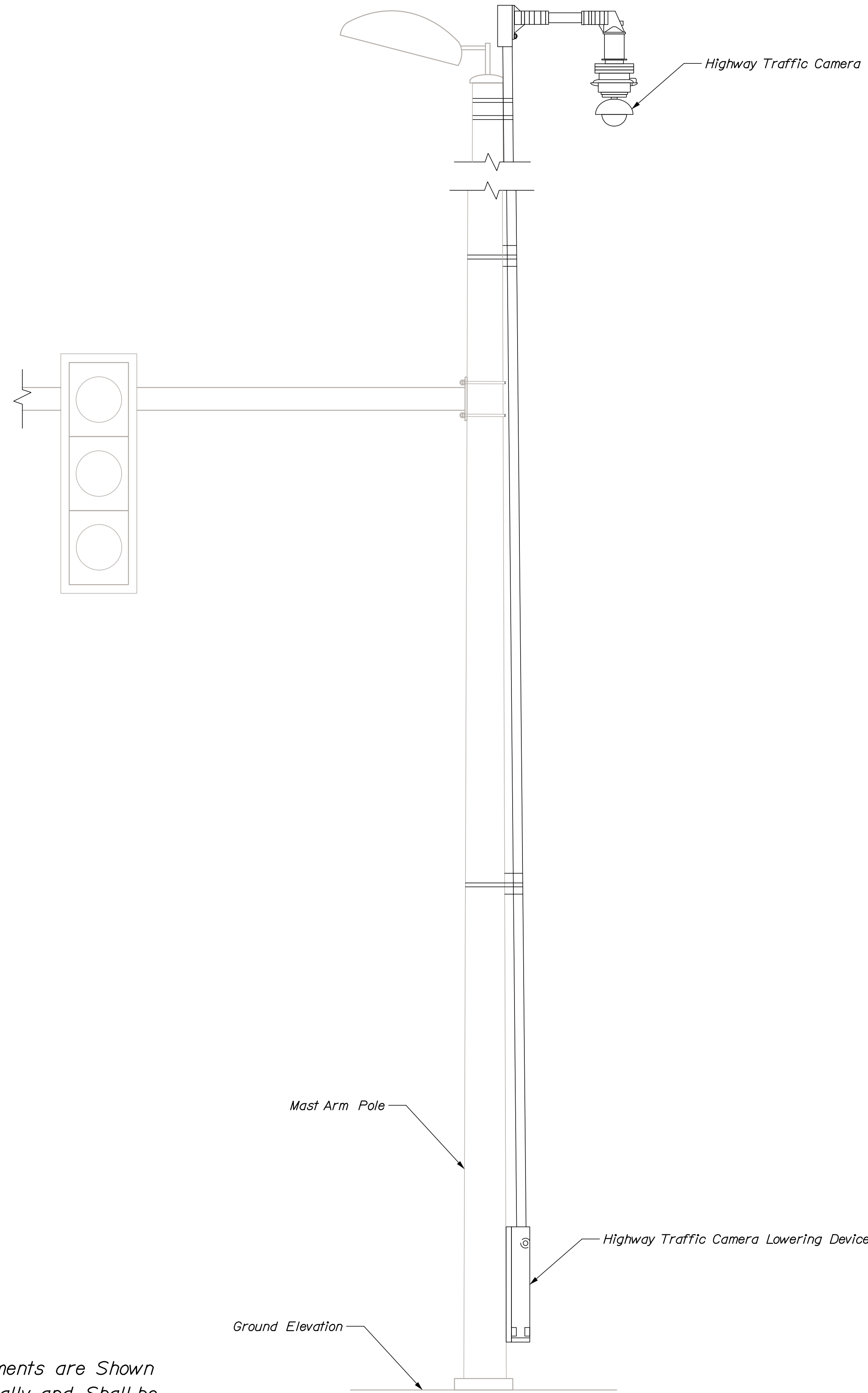
INSTALLATION
OF
HIGHWAY TRAFFIC CAMERAS

GENERAL NOTES & DETAILS

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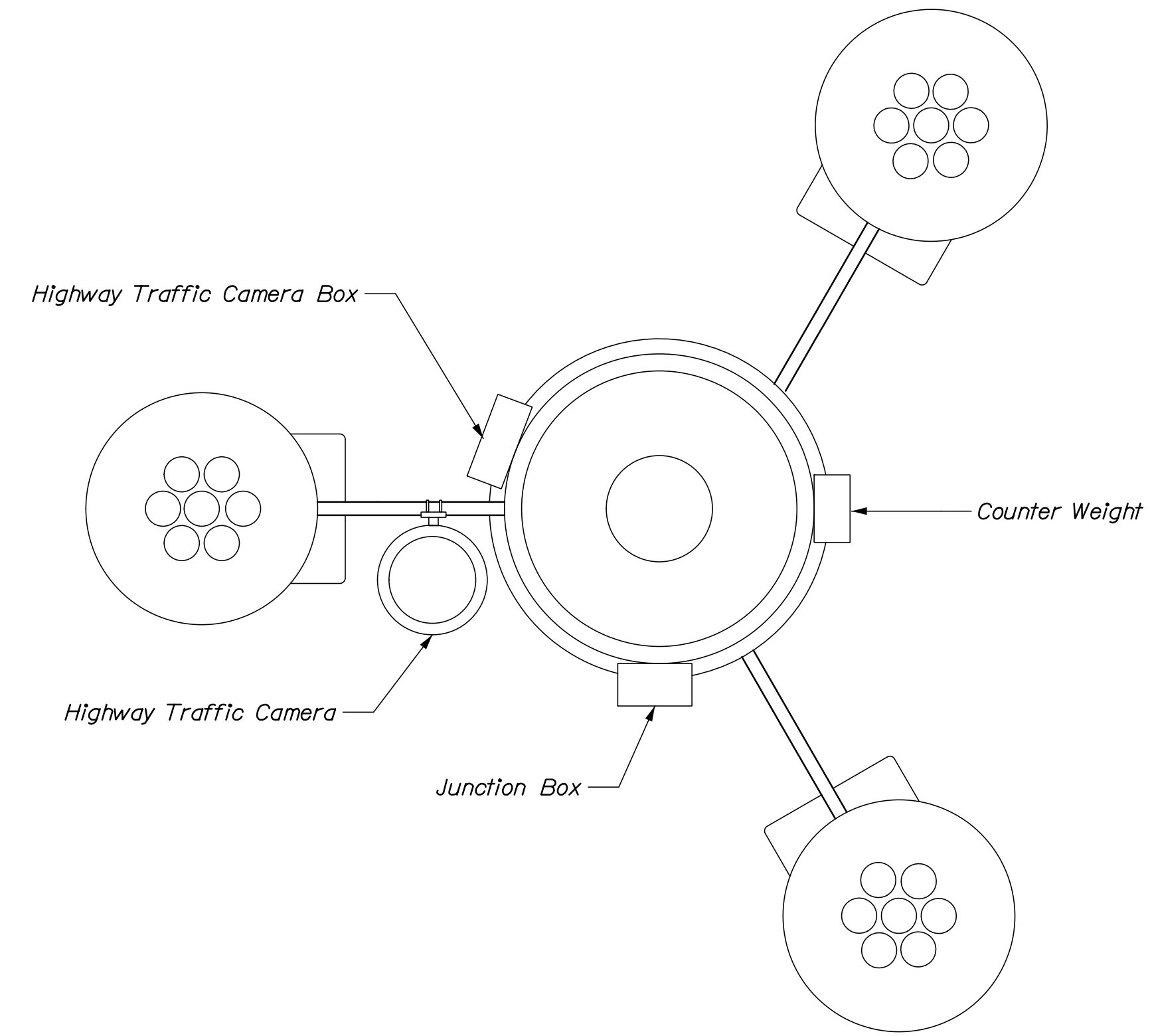
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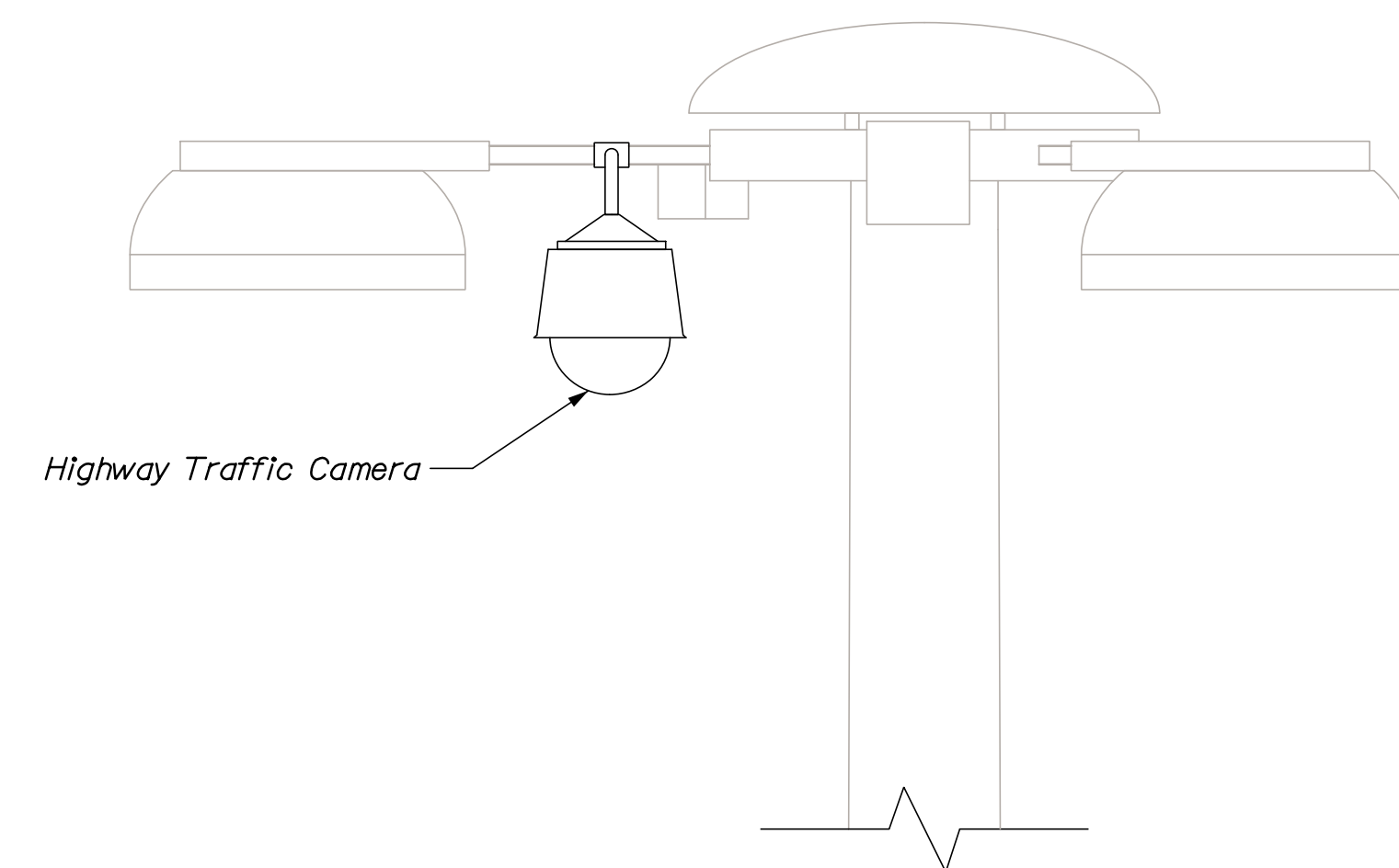


CAMERA CONNECTION - MAST ARM
NOT TO SCALE

NOTES:
1. Attachments are Shown Conceptually and Shall be Designed per Note 20 of Sheet 2.



CAMERA CONNECTION - HIGH MAST LIGHT
NOT TO SCALE



CAMERA CONNECTION - HIGH MAST LIGHT:
ELEVATION VIEW
NOT TO SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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WIN
25325.00

SIGNATURE

P.E. NUMBER

DATE

PROJ. MANAGER	D. LORING	BY	DATE
DESIGN-DETAILED	W. LAVALLÉE	A. GREENLAW	12/23
CHECKED-REVIEWED	A. GREENLAW	P. BEGIN	12/23
DESIGN-DETAILED			
REVISIONS 1			
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REVISIONS 3			
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FIELD CHANGES			

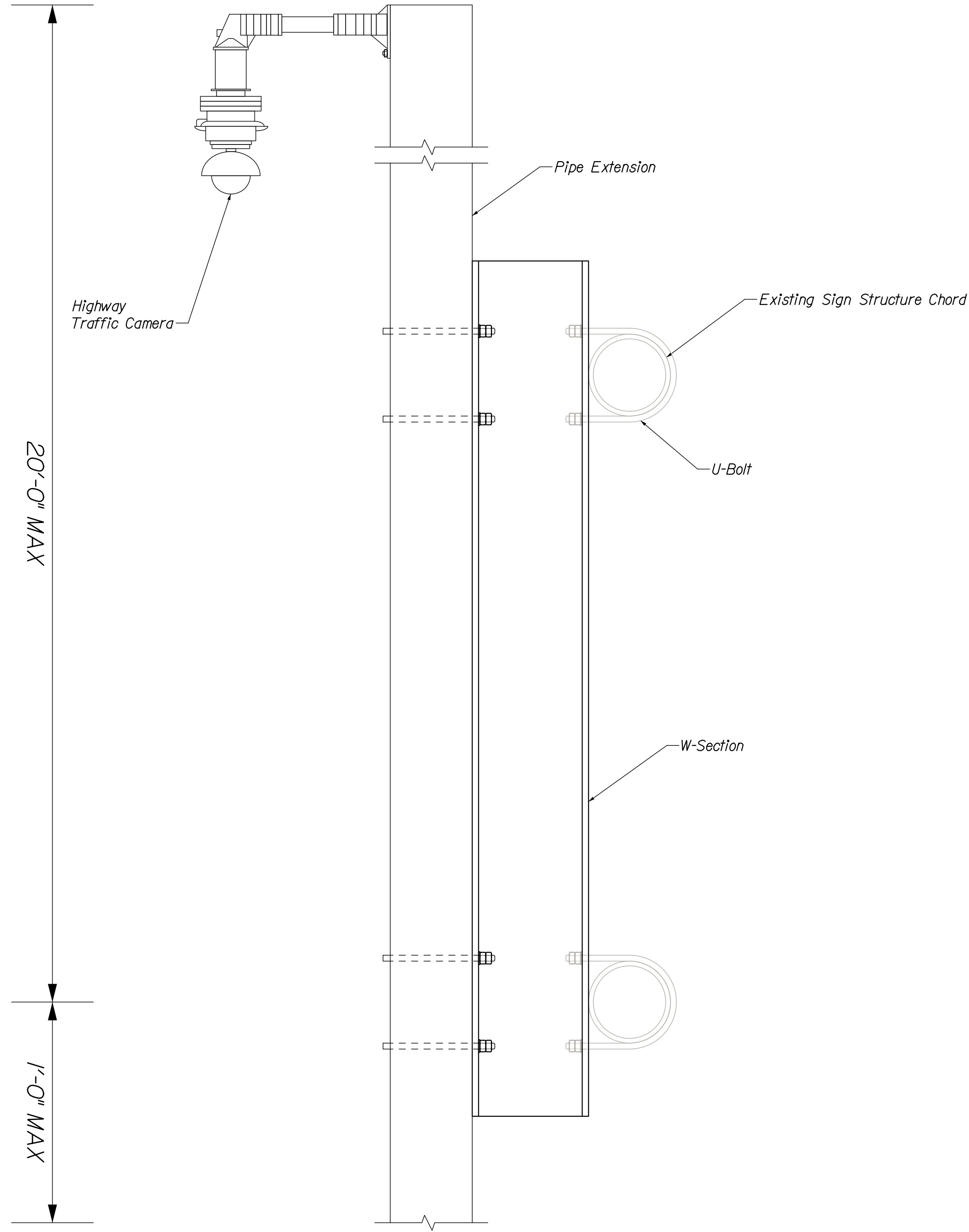
INSTALLATION
OF
HIGHWAY TRAFFIC CAMERAS
CONNECTION DETAILS

SHEET NUMBER

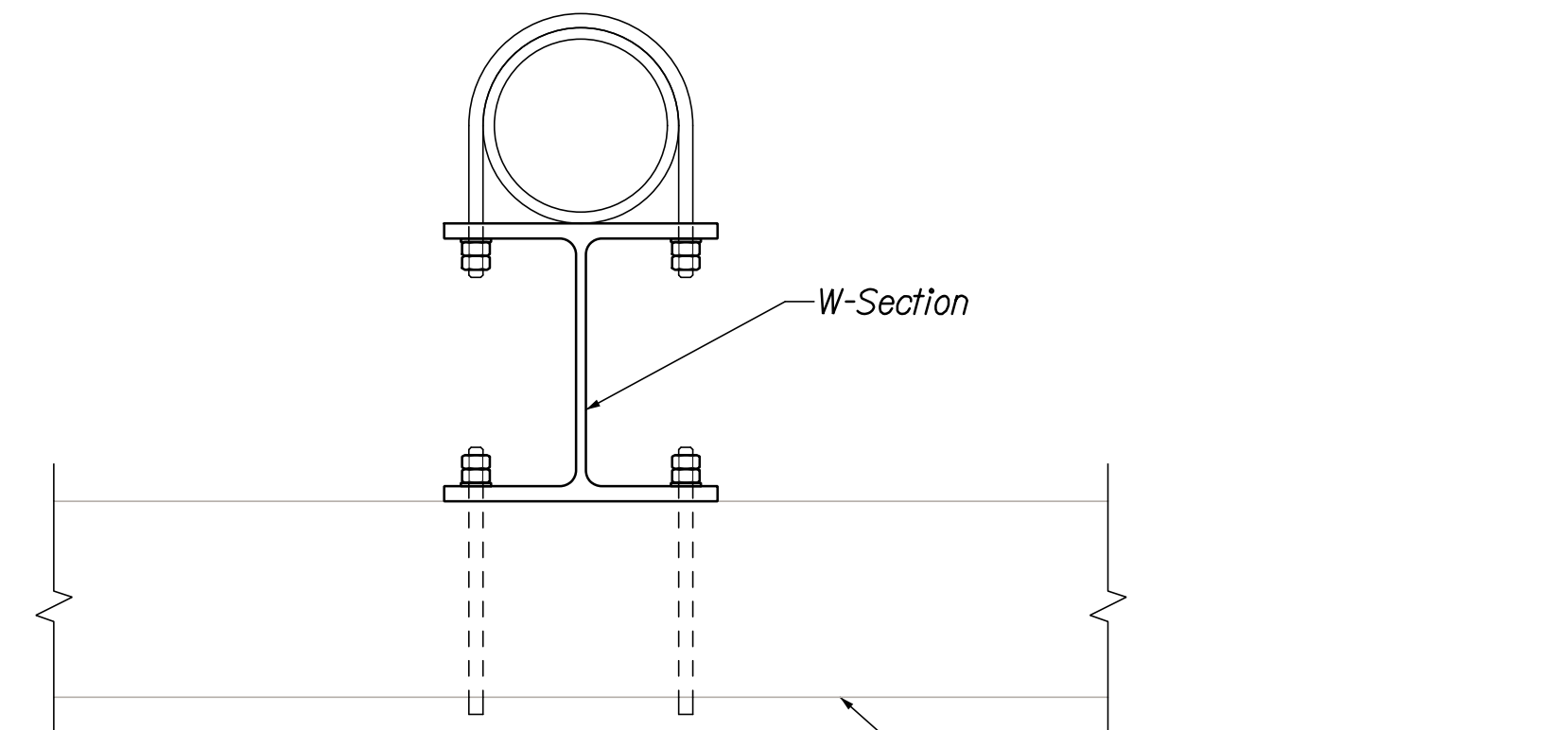
3

OF 9





Section
 NOT TO SCALE
 Existing Sign Truss Except Top and Bottom
 Chord Not Shown for Clarity



Plan
 NOT TO SCALE
 Existing Sign Truss Except Top and Bottom
 Chord Not Shown for Clarity

NOTES:
 1. Attachments are Shown Conceptually
 and Shall be Designed per Note 20
 on Sheet 2.

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 25325.00
 WIN
 25325.00

DESIGNED	DATE
CHECKED	12/23
DESIGNED	12/23
REVISIONS 1	SIGNATURE
REVISIONS 2	P.E. NUMBER
REVISIONS 3	DATE
REVISIONS 4	
FIELD CHANGES	

PROJ. MANAGER	D. LORING	BY	DATE
DESIGNED	W. LAVALLÉE	A. GREENLAW	12/23
CHECKED	W. LAVALLÉE	A. GREENLAW	12/23
DESIGNED	A. GREENLAW	P. BEGIN	
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

INSTALLATION
 OF
 HIGHWAY TRAFFIC CAMERAS
 CAMERA SIGN
 MOUNTING DETAILS

SHEET NUMBER
 4
 OF 9



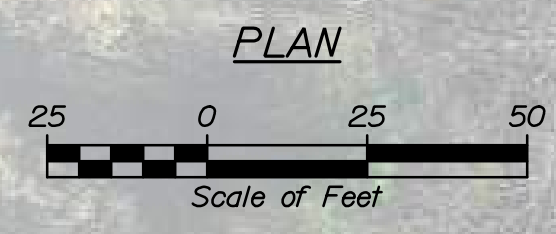


Proposed 2" Conduit for Power From Nearest Light Pole. Power Wire to be Carried from Nearest Lighting Cabinet at LAT: 44°47'15.36"N LONG: 68°48'46.23"W.

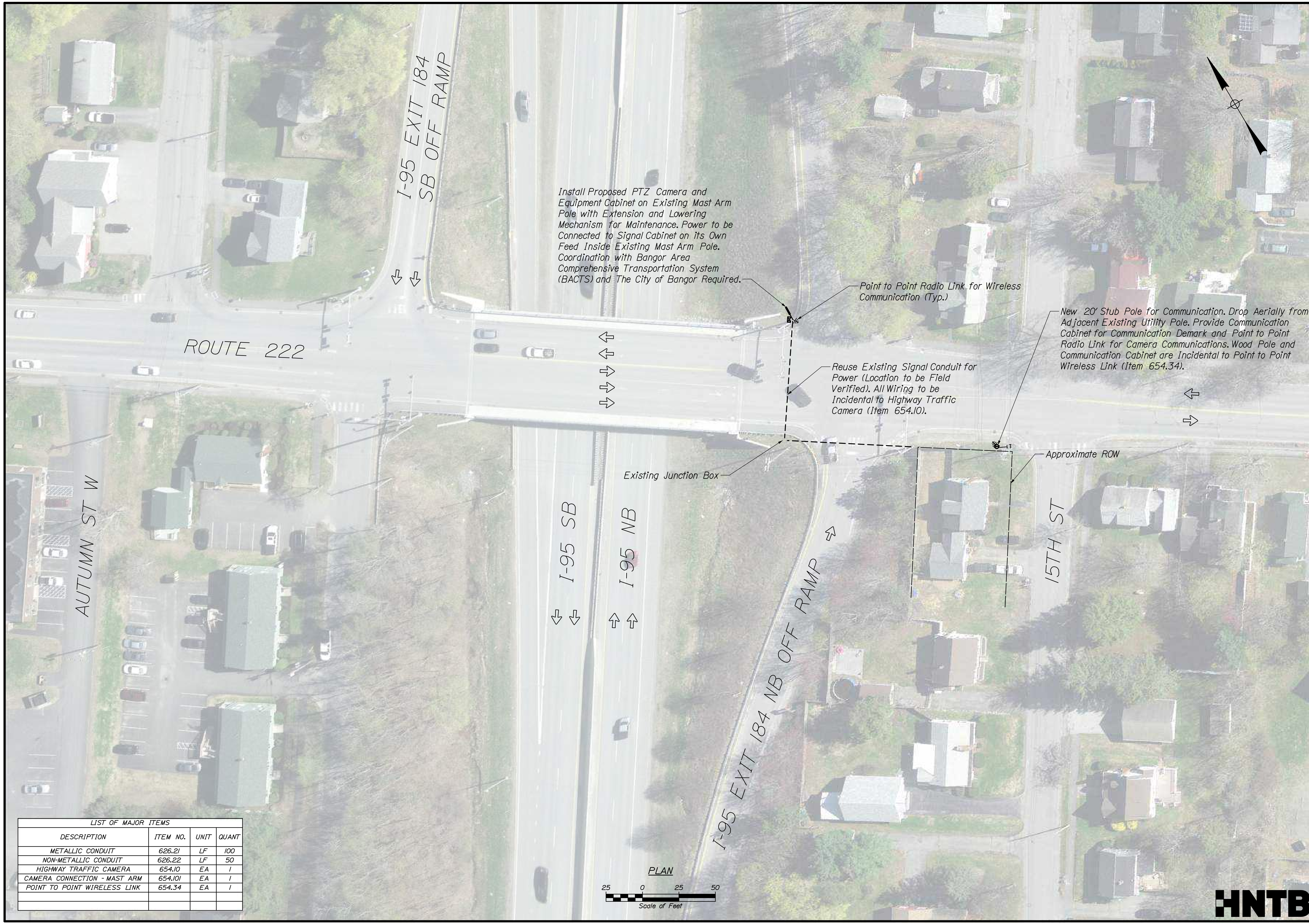
Install Proposed PTZ Camera and Equipment Cabinet on Existing Overhead Sign Structure with 20' Extension and Lowering Mechanism for Maintenance. Communications for Camera via Wireless Point to Point Radio Link Connected to Communications Shelter Located at LAT: 44°47'13.87"N LONG: 68°48'43.00"W.

Junction Box (Typ.)

LIST OF MAJOR ITEMS			
DESCRIPTION	ITEM NO.	UNIT	QUANT
PRECAST CONCRETE JUNCTION BOX	626.11	EA	2
METALLIC CONDUIT	626.21	LF	100
NON-METALLIC CONDUIT	626.22	LF	50
HIGHWAY TRAFFIC CAMERA	654.10	EA	1
CAMERA CONNECTION - OHSS	654.103	EA	1
POINT TO POINT WIRELESS LINK	654.34	EA	1



STATE OF MAINE DEPARTMENT OF TRANSPORTATION 25325.00 WIN 25325.00		SIGNATURE P.E. NUMBER DATE	
INSTALLATION OF HIGHWAY TRAFFIC CAMERAS SITE 1: BANGOR, I-95 SB SOUTH OF I-395 EB		SHEET NUMBER 5 OF 9	
PROJ. MANAGER DESIGN-DETAILED CHECKED-REVIEWED DESIGNS-DETAILED REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES	D. LORING W. LAVALLÉE A. GREENLAW A. GREENLAW P. BEGIN	BY A. GREENLAW P. BEGIN	DATE 12/23 12/23



LIST OF MAJOR ITEMS			
DESCRIPTION	ITEM NO.	UNIT	QUANT
METALLIC CONDUIT	626.21	LF	100
NON-METALLIC CONDUIT	626.22	LF	50
HIGHWAY TRAFFIC CAMERA	654.10	EA	1
CAMERA CONNECTION - MAST ARM	654.101	EA	1
POINT TO POINT WIRELESS LINK	654.34	EA	1

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		25325.00	
WIN		25325.00	
PROJ. MANAGER	D. LORING	BY	DATE
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CHECKED-REVIEWED	A. GREENLAW	P. BEGIN	12/23
DESIGN-DETAILED			SIGNATURE
REVISIONS 1			P.E. NUMBER
REVISIONS 2			DATE
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
INSTALLATION OF HIGHWAY TRAFFIC CAMERAS		SHEET NUMBER	
SITE 2: BANGOR, I-95 NB NEAR UNION STREET		6	
		OF 9	





Install Proposed PTZ Camera and Pole Mounted Equipment Cabinet on Existing Overhead Sign Structure with 20' Extension and Lowering Mechanism for Maintenance.

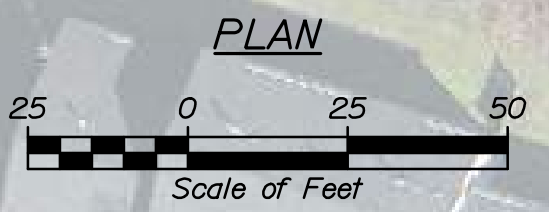
Proposed 2" Conduit for Power and Communications to Camera Cabinet

Cut Abandoned Utility Pole Incidental to Highway Traffic Camera (Item 654.10)

Draw Power and Communications Aerially From Existing Wood Pole to New Wood Pole

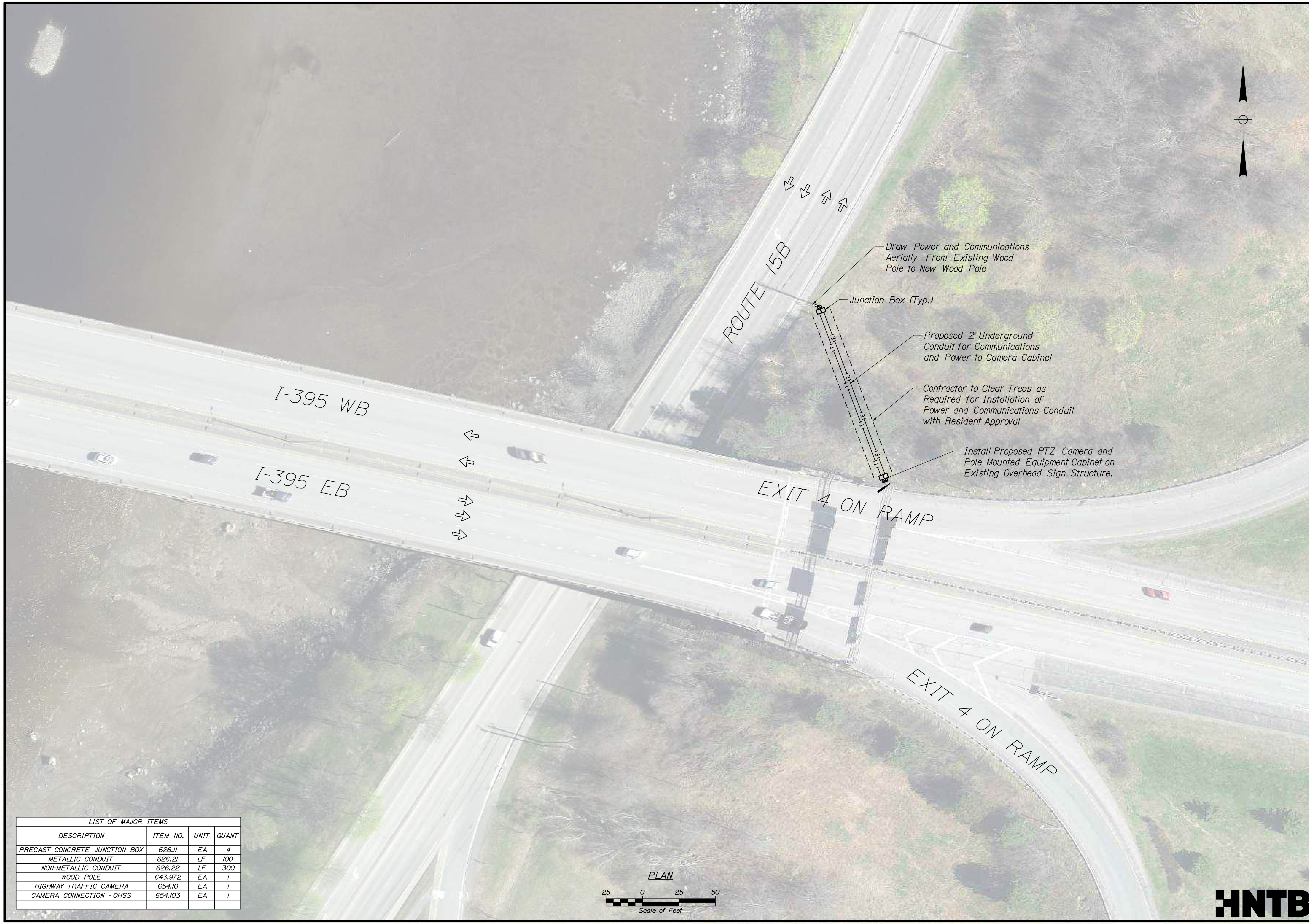
Junction Box (Typ.)

LIST OF MAJOR ITEMS			
DESCRIPTION	ITEM NO.	UNIT	QUANT
PRECAST CONCRETE JUNCTION BOX	626.11	EA	4
METALLIC CONDUIT	626.21	LF	100
NON-METALLIC CONDUIT	626.22	LF	550
WOOD POLE	643.972	EA	1
HIGHWAY TRAFFIC CAMERA	654.10	EA	1
CAMERA CONNECTION - OHSS	654.103	EA	1

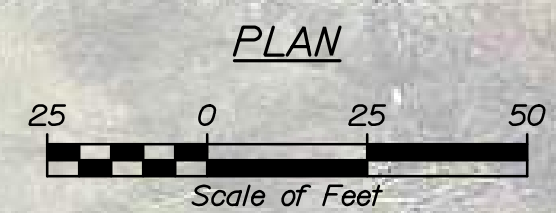


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DESIGN-DETAILED			
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REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SIGNATURE		P.E. NUMBER	
DATE		DATE	
INSTALLATION OF HIGHWAY TRAFFIC CAMERAS SITE 3: BANGOR, I-95 NB SOUTH OF STILLWATER AVE			
SHEET NUMBER			
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OF 9			





LIST OF MAJOR ITEMS			
DESCRIPTION	ITEM NO.	UNIT	QUANT
PRECAST CONCRETE JUNCTION BOX	626.11	EA	4
METALLIC CONDUIT	626.21	LF	100
NON-METALLIC CONDUIT	626.22	LF	300
WOOD POLE	643.972	EA	1
HIGHWAY TRAFFIC CAMERA	654.10	EA	1
CAMERA CONNECTION - OHSS	654.103	EA	1



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		25325.00 WIN 25325.00																																										
INSTALLATION OF HIGHWAY TRAFFIC CAMERAS SITE 5: BREWER, I-395 WB NEAR SOUTH MAIN STREET	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>PROJ. MANAGER</th> <th>D. LORING</th> <th>BY</th> <th>DATE</th> </tr> <tr> <td>DESIGN-DETAILED</td> <td>W. LAVALLÉE</td> <td>A. GREENLAW</td> <td>12/23</td> </tr> <tr> <td>CHECKED-REVIEWED</td> <td>A. GREENLAW</td> <td>P. BEGIN</td> <td>12/23</td> </tr> <tr> <td>DESIGN-DETAILED</td> <td></td> <td></td> <td></td> </tr> <tr> <td>REVISIONS 1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>REVISIONS 2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>REVISIONS 3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>REVISIONS 4</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FIELD CHANGES</td> <td></td> <td></td> <td></td> </tr> </table>	PROJ. MANAGER	D. LORING	BY	DATE	DESIGN-DETAILED	W. LAVALLÉE	A. GREENLAW	12/23	CHECKED-REVIEWED	A. GREENLAW	P. BEGIN	12/23	DESIGN-DETAILED				REVISIONS 1				REVISIONS 2				REVISIONS 3				REVISIONS 4				FIELD CHANGES				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>SIGNATURE</th> <th>P.E. NUMBER</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	SIGNATURE	P.E. NUMBER	DATE			
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