



IOWA COMMUNICATIONS NETWORK
IOWA NATIONAL GUARD TO HWY 5 & SW 42ND ST
FIBER INSTALLATION
POLK COUNTY, WEST DES MOINES, IOWA
1625 SE COUNTY LINE ROAD TO HWY 5 & SW 42ND ST
LOCATION MAP

UTILITY
INFRASTRUCTURE
SOLUTIONS

hbk
ENGINEERING

509 SOUTH GILBERT STREET
IOWA CITY, IA 52240
PHONE: (319) 338-7557
STATE OF IOWA, DEPARTMENT OF LABOR
REGULATION NO. 00527328

PROJECT INFORMATION

SCOPE OF WORK:

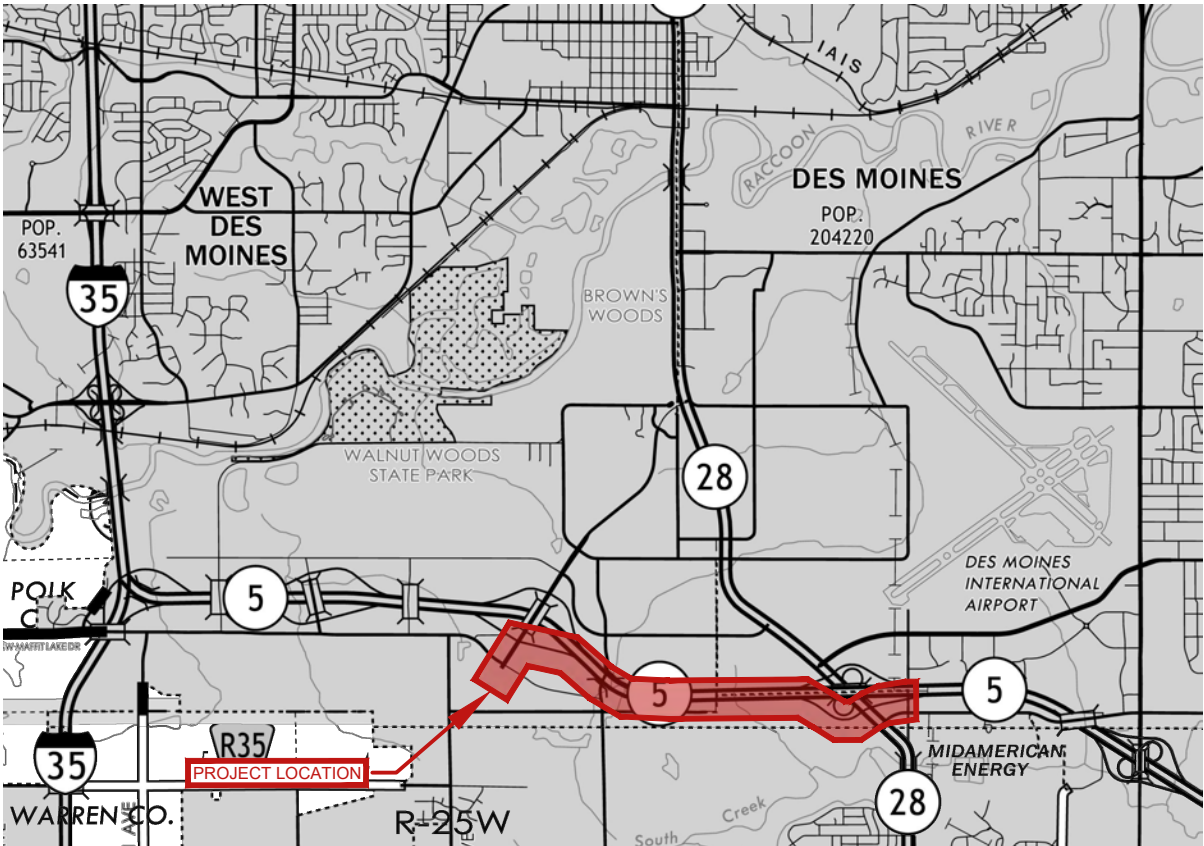
THIS PROJECT IS FOR NEW CONDUIT AND FIBER OPTIC CABLE INSTALLATION FOR THE IOWA NATIONAL GUARD FROM THE NEW WEST DES MOINES READINESS CENTER AT 1625 SE COUNTY LINE ROAD TO EXISTING ICN HANDHOLE AT HWY 5 AND SW 42ND ST. IT WILL INVOLVE APPROXIMATELY 16422' OF NEW CONDUIT INSTALLATION AND 16703' OF NEW CABLE INSTALLATION IN NEW EXISTING CONDUITS PER THE DETAILED PLAN SHEETS.

CONTACT PERSON:

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PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE MUTCD. SUBMIT LANE CLOSURE LAYOUTS AND TRAFFIC CONTROL PLANS TO THE CITY OF WEST DES MOINES PUBLIC WORKS (TRAFFIC DIVISION 222-3480) AT LEAST 48 HOURS PRIOR TO CLOSING ANY TRAFFIC LANES.



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CITY OF WEST DES MOINES REQUIREMENTS:

1. PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE MUTCD. SUBMIT LANE CLOSURE LAYOUTS AND TRAFFIC CONTROL PLANS TO THE CITY OF WEST DES MOINES PUBLIC WORKS (TRAFFIC DIVISION 222-3480) AT LEAST 48 HOURS PRIOR TO CLOSING ANY TRAFFIC LANES.
2. CONTACT THE CITY OF WEST DES MOINES ENGINEERING SERVICE DEPARTMENT (515-222-3475), AT LEAST 48 HOURS PRIOR TO ANY UTILITY WORK LOCATION IN THE CITY.
3. AT LEAST 48 HOURS PRIOR TO STARTING WORK AT ANY UTILITY WORK LOCATION CONTACT THE CITY OF WEST DES MOINES PUBLIC WORKS SEWER DIVISION (515-222-3480) PRIOR TO STARTING ANY UTILITY WORK FOR CITY SANITARY AND STORM SEWER LOCATE INFORMATION.
4. MAINTAIN AT LEAST ONE FOOT (1') OF HORIZONTAL CLEARANCE AND AT LEAST ONE FOOT (1') OF VERTICAL CLEARANCE FROM STORM SEWER PIPES AND STRUCTURES.
5. MAINTAIN AT LEAST FOUR FEET (4') OF HORIZONTAL CLEARANCE AND ONE AND ONE-HALF (1.5') OF VERTICAL CLEARANCE FROM SANITARY SEWER PIPES AND STRUCTURES.
6. CONTACT THE CITY OF WEST DES MOINES WATER WORKS DEPARTMENT (515-222-3465) AT LEAST 48 HOURS PRIOR TO STARTING ANY UTILITY WORK WITHIN 50 FEET OF ANY WATER INFRASTRUCTURE, PUBLIC OR PRIVATE.
7. MAINTAIN AT LEAST THREE FEET (3') OF HORIZONTAL AND TWO FEET (2') OF VERTICAL CLEARANCE FROM WATER MAINS.
8. MAINTAIN 4 FEET (4') OF HORIZONTAL CLEARANCE FROM SIGNAL POLES AND TRAFFIC CABINETS. DO NOT EXCEED 5 FEET (5') DEEP WITHIN 10 FEET.
9. MAINTAIN ONE FOOT (1') VERTICAL CLEARANCE FROM SIGNAL CONDUIT.
10. MAINTAIN 2 FEET (2') OF HORIZONTAL CLEARANCE AND 2 FEET (2') OF VERTICAL CLEARANCE FROM FIBER AND INTERCONNECT LINES.

UTILITY CONTACTS			
COMPANY	CONTACT NAME	PHONE	EMAIL
MIDAMER-GAS (M52G)	JAMIE NEER	(515) 252-6972	MECDSDDESIGNLOCATES@AMERICAN.COM
CENTURYLINK (BH01)	CLEM HELSTETTER	(913) 312-2744	NATIONALRELO@CENTURYLINK.COM
CITY OF DES MOINES TRAFFIC (CDT)	MARK FOLVAG	(515) 283-4109	MAFOLVAG@DMGOV.ORG
CENTURYLINK (CTLIA01)	SADIE HULL	(918) 547-0147	SADIE.HULL@LUMEN.COM
DES MOINES, CITY OF SEWER (DMS)	STEVE JOHNSON	(515) 237-1359	SCJOHNSON@DMGOV.ORG
DES MOINES METRO WASTEWATER (DWR)	JAMES BECK	(515) 323-8055	JPBECK@DMGOV.ORG
DES MOINES WATER WORKS (DWW)	ED CLARK	(515) 323-6244	ONECALLMAPS@DMWW.COM
IOWA COMMUNICATIONS NETWORK (ICN)	DOUG EBELSHEISER	(515) 725-4742	DOUG.EBELSHEISER@ICN.STATE.IA.US
IOWA DOT TOB FIBER (IDT)	DOUG EBELSHEISER	(515) 725-4742	DOUG.EBELSHEISER@ICN.STATE.IA.US
IOWA ARMY NATIONAL GUARD (ING)	LUKE SLINGS	(515) 252-4638	LUCAS.A.SLINGS.NFG@ARMY.MIL
AUREON NETWORK SERVICES (INS)	JEFF KLOCKO	(515) 830-0445	JEFF.KLOCKO@AUREON.COM
KRAMER SERVICE GROUP LLC (KSG)	LYNN HICKS	(817) 773-4183	KSGLOCATES@YAHOO.COM
MIDAMER-ELEC (M52E)	JAMIE NEER	(515) 252-6972	MECDSDDESIGNLOCATES@MIDAMERICAN.COM
VERIZON (MC1)	JOHN BACHELDER	(972) 729-7000	ASG.INVERSTIGATIONSTEAM@ASGINC.US
METRO FIBERNET, LLC (MET)	LORI KEMPER	(812) 213-1050	811DESIGN@METRONET.COM
CITY OF DES MOINES NET (METN1)	DOUG EBELSHEISER	(515) 725-4742	DOUG.EBELSHEISER@ICN.STATE.IA.US
NORWALK, CITY OF (NWK)	WAYNE SCHWARTZ	(515) 202-2540	WSCHWARTZ@NORWALK.IOWA.GOV
MEDIACOM (POLKIA1)	JERRY BROUGHTON	(845) 587-2521	JBROUGHTON@MEDIACOMCC.COM
IOWA DOT (W16)	SCOTT SMYTH	(515) 250-5290	SCOTT.SMYTH@IOWADOT.US
WEST DES MOINES WATER WORKS (WDM)	WILLIAM MABUCE	(515)222-3510	DESIGNLOCATES@WDMWWW.COM
WEST DES MOINES TRAFFIC (WDT)	JIM DICKINSON	(515) 222-3482	JIM.DICKINSON@WDM.IOWA.GOV
WARREN WATER DISTRICT (WWD)	STAN RIPPERGER	(515) 208-5352	WWD@WARRENWATERDISTRICT.COM
ZAYO GROUP LLC (ZAY)	JOHN FERRARESI	(312) 216-0450	JOHN.FERRARESI@ZAYO.COM

*THIS CONTACT LIST IS NOT ALL-INCLUSIVE. CONTRACTOR IS RESPONSIBLE FOR REQUESTING LOCATES OF ALL UTILITIES.

NOTE:
CALL 811 FOR LOCATION OF UNDERGROUND TELEPHONE, ELECTRIC, GAS MAINS, CABLE TELEVISION AND OTHER UTILITIES.

EXISTING UNDERGROUND AND OVERHEAD UTILITIES AND DRAINAGE STRUCTURES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE INDIVIDUAL CONTRACTORS TO EXACTLY LOCATE AND PROTECT EACH EXISTING UTILITY BEFORE AND DURING ACTUAL CONSTRUCTION.



WEST DES MOINES IOWA NATIONAL GUARD
FIBER INSTALLATION

1	FOR 60% REVIEW	11/13/2023
2	FOR PERMIT PLANS	12/06/2023
3		
4		

IOWA COMMUNICATIONS NETWORK
400 EAST 14TH STREET
GRIMES STATE OFFICE BUILDING
DES MOINES, IOWA 50319
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ENGINEER GENERAL NOTES AND LEGENED

ALL CONDUIT AND HANDHOLE INSTALLATIONS, REMOVALS, MODIFICATIONS, AND TEMPORARY WORK SHALL BE DONE ACCORDING TO THE FOLLOWING NON-INCLUSIVE CONDITIONS:

SECTION 1.0 SCOPE OF WORK

1.01 INSTALLATION DESCRIPTION:

INSTALL CONDUIT AND ALL RELATED APPURTENANCES FOR FIBER OPTIC CABLE INSTALLATION. SEE PLANS FOR EXACT LOCATION, LENGTHS, QUANTITIES, AND DIMENSIONS OF PROPOSE IMPROVEMENTS.

1.02 SEE SHEET 4 FOR LOCATION OF ENGINEER'S ESTIMATE OF MATERIALS.

1.03 THE CONTRACTOR SHALL PROVIDE ALL MATERIAL, EQUIPMENT, LABOR, INSTALLATION, RESTORATION,UTILITY RELOCATION CHARGES, JOB SITE DELIVERY COSTS AND INCIDENTALS TO COMPLETE THE DESCRIBED OR ILLUSTRATED WORK, UNDER THIS CONTRACT.

1.04 ANY CHANGE-ORDER REQUEST MUST BE PRESENTED IN WRITING TO THE OWNER'S REPRESENTATIVE AND APPROVED PRIOR TO PROCEEDING WITH THE REQUESTED CHANGE. DOCUMENTATION CONCERNING ANY AND ALL CHANGE ORDERS WILL BE REDUCED TO FORMAL RECORD, FILED WITH THE OWNER'S REPRESENTATIVE, AND BE MADE AVAILABLE FOR FUTURE REFERENCE.

1.05 THE CONTRACTOR SHALL PROVIDE A MINIMUM 48 HOUR ADVANCED NOTICE TO HBK ENGINEERING (319-338-7557) TO SCHEDULE A PRE-CONSTRUCTION WALK THROUGH WITH A HBK ENGINEERING REPRESENTATIVE. THIS WALK THROUGH MUST BE COMPLETED PRIOR TO THE COMMENCEMENT OF ANY WORK WITHIN THE LIMITS OF THIS PROJECT.

1.06 THE ENGINEER WILL NOT BE RESPONSIBLE NOR ASSUME ANY LIABILITY FOR NEGLIGENT ACTS OR ERRORS OF OMISSIONS OF ANY CONTRACTOR, ANY SUBCONTRACTOR, OR ANY OF THE CONTRACTOR'S OR SUBCONTRACTORS' AGENTS OR EMPLOYEES OR ANY OTHER PERSONS (EXCEPT ENGINEER'S OWN EMPLOYEES) AT THE PROJECT SITE OR OTHERWISE PERFORMING ANY OF THE WORK OF THE PROJECT. ANY CONTRACTOR OR SUBCONTRACTOR, AS WELL AS THE ENGINEER, WILL BE RESPONSIBLE FOR HIS OWN SAFETY PROGRAM. NEITHER THE PROFESSIONAL ACTIVITIES OF THEENGINEER, NOR THE PRESENCE OF THE ENGINEER OR HIS OR HER EMPLOYEES AND SUB-CONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE ANY CONTRACTOR OF HIS OR HER OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE ENGINEER AND HIS OR HER PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH ANY HEALTH OR SAFETY PRECAUTIONS.

SECTION 2.0 MATERIALS

2.01 ALL MATERIALS INSTALLED WITHIN THE LIMITS OF THIS PROJECT SHALL BE IN CONFORMANCE WITH STANDARD RECOMMENDATIONS OF THE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA) AND AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).

2.02 ALL TRENCHED CONDUIT, ELBOWS, AND COUPLINGS SHALL BE HDPE UNLESS OTHERWISE NOTED. ALL BORED CONDUIT AND COUPLINGS SHALL BE HDPE SDR-13 UNLESS OTHERWISE NOTED.

2.03 JOB SITE MATERIAL WILL BE DELIVERED TO AND MAINTAINED AT THE STREET WORK AREAS IN A WELL MANAGED MANNER, TO MINIMIZE CONGESTION OR INCONVENIENCE TO OTHER WORKERS, OR CONTRACTORS WORKING UNDER ALTERNATE PERMITS.

SECTION 3.0 GENERAL NOTES

3.01 CONTRACTOR IS ADVISED TO READ ALL NOTES ON DRAWINGS, CAREFULLY.

3.02 THE CONTRACTOR SHALL VERIFY EXISTING STREET RIGHTS OF WAY TO THE EXTENT NECESSARY TO VERIFY PROPOSED WORK REMAINS WITHIN THESE RIGHTS OF WAY AND DOES NOT INFRINGE ONTOPRIVATE PROPERTY NOT OWNED BY THE OWNER.

3.03 SCALE FOR DRAWINGS IS FOR GENERAL INFORMATION ONLY. LOCATIONS AND DIMENSIONS SHALL BE TAKEN AS SHOWN AND THE DRAWINGS SHALL NOT BE SCALED.

3.04 CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL PUBLIC AND PRIVATE UTILITIES AS WELL AS CITY AND STATE AGENCIES.

3.05 INSTALL CONDUIT MINIMUM OF 10'-0" BELOW ALL WATERWAYS AND CULVERT CROSSINGS. CONTRACTOR TO VERIFY CULVERT DEPTH PRIOR TO CONDUIT INSTALLATION.

3.06 NUMEROUS ELEVATION CHANGES. TOPOGRAPHY LINES SHOWN ON DRAWING FOR REFERENCE ONLY.

3.07 DUE TO EXISTING FORESTED AREAS, SOME TREE REMOVAL AND TRIMMING REQUIRED FOR CONDUIT OR HANDHOLE INSTALLATION WITHIN THE RIGHT-OF-WAY.

3.08 RIGHT OF WAY LOCATIONS ARE APPROXIMATE. FIBER INSTALLATION 6'-0" MINIMUM OFF RIGHT-OF-WAY.

SECTION 4.0 SAFETY

4.01 CONTRACTOR SHALL TAKE ALL NECESSARY SAFETY PRECAUTIONS TO PROTECT UTILITIES, PEDESTRIANS, WORKERS AND VEHICULAR TRAFFIC. THE CONTRACTOR SHALL PROVIDE TEMPORARY FENCES, BARRICADES, ETC. AS REQUIRED TO PROTECT ADJACENT PROPERTY AND THE PUBLIC DURING ALL PHASES OF CONSTRUCTION.

4.02 THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY BARRICADES, SIGNAGE, WARNING LIGHTS AND OTHER DEVICES AND KEEP ALL TRAFFIC CONTROL OPERATIONAL 24 HOURS A DAY AT ALL OPEN TRENCH LOCATIONS AND AT LOCATIONS WHICH DO NOT HAVE A FINISHED SURFACE OR ROAD PLATES.

4.03 THE CONTRACTOR SHALL COORDINATE INGRESS AND EGRESS TO ADJACENT PROPERTIES AND/OR CONSTRUCTION AFFECTED BY THE PROPOSED WORK.

SECTION 5.0 EXISTING UTILITIES

5.01 EXISTING CONDITIONS, STRUCTURES, UTILITIES AND SURFACE FEATURES SHOWN WERE OBTAINED FROM UTILITY ATLASES AND FROM DRAWINGS FURNISHED BY THE VARIOUS UTILITIES AND ARE ASSUMED TO BE ACCURATE AND CORRECT. THE CONTRACTOR SHALL PERFORM HIS OWN SURVEY AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS OF EXISTING STRUCTURES PRIOR TO STARTING ANY WORK.

5.02 FOR BORED INSTALLATIONS, THE CONTRACTOR SHALL PERFORM TEST HOLES AT ALL UTILITY CROSSINGS TO VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO ANY EXCAVATION, AND TO LOCATE ANY POSSIBLE OBSTRUCTIONS. ALL TEST HOLES SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

5.03 FOR TRENCHED INSTALLATIONS, THE CONTRACTOR SHALL PERFORM TEST HOLES PER PLAN OR AS DEEMED NECESSARY TO VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO ANY EXCAVATION, AND TO LOCATE ANY POSSIBLE OBSTRUCTIONS. ALL TEST HOLES SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

5.04 THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL OVERHEAD OBSTRUCTIONS PRIOR TO THE COMMENCEMENT OF WORK.

5.05 EXISTING UTILITIES ARE SHOWN AT THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL CONTACT IOWA ONE CALL AT 1(800)-292-8989 A MINIMUM OF 48 HOURS (EXCLUDING WEEKENDS AND GOVERNMENT HOLIDAYS) PRIOR TO COMMENCEMENT OF ANY PAVEMENT CUTS OR EXCAVATION TO REQUEST LOCATING AND MARKING OF EXISTING UTILITIES PRIOR TO PERFORMING ANY EXCAVATION WORK IN OR AROUND ANY UTILITY.

5.06 ALL EXCAVATION WORK NEAR AND AROUND EXISTING STRUCTURES AND UTILITIES SHALL BE BY HAND METHOD.

5.07 ALL DISCREPANCIES SHOULD BE REPORTED TO ENGINEER OF RECORD AT HBK ENGINEERING (319-338-7557). ANY QUESTIONS OR COMMENTS THE CONTRACTOR MAY HAVE ARE TO BE DISCUSSED WITH THE OWNER AND ENGINEER PRIOR TO CONSTRUCTION.

5.08 FURTHER, THE CONTRACTOR SHALL RECORD THE LOCATION AND ELEVATION OF ALL UTILITIES ENCOUNTERED, AND INSTALLATION OF NEW WORK, AS THE WORK PROGRESSES AND SHALL PREPARE RECORD DRAWINGS (RED-LINES) BASED ON HIS RECORDS. AS PART OF THE RECORD DRAWINGS, CONTRACTOR SHALL ALSO PROVIDE HORIZONTAL AND VERTICAL CONFIGURATION OF CONDUITS WHERE MULTIPLE CONDUITS ARE INSTALLED. THESE RECORDS TO BE SUPPLIED TO HBK ENGINEERING, LLC AT COMPLETION OF WORK.

5.09 AT SEWER DRAINS FROM HOMES OR OTHER BUILDINGS, IF THERE IS INTERFERENCE, REPLACE INKIND. IN ALL CASES WHERE SEWER WORK IS DONE, A PERMIT SHOULD BE OBTAINED AND A SEWER INSPECTOR SHOULD BE PRESENT DURING THE WORK.

5.10 CONTRACTOR SHALL SUPPORT ALL WATER MAINS IN EXCESS OF 12" IN DIAMETER WITH A PERMANENT TYPE OF STRUCTURE UNLESS OTHERWISE NOTIFIED BY THE WATER DEPARTMENT, AND IS INCLUDED IN COST FOR DOING THE WORK. AT NO TIME DURING CONSTRUCTION SHALL WATER MAINS GO UNSUPPORTED FOR A SPAN GREATER THAN 8'-0".

5.11 CONTRACTOR RESPONSIBLE FOR OBTAINING AND PROVIDING REVIEW AND DESIGN OF ANY AND ALL TEMPORARY UTILITY SUPPORT SYSTEMS PRIOR TO CONSTRUCTION.

5.12 CONTRACTOR SHALL NOTIFY ALLIANT IN SITUATIONS WHERE STEEL PIPE CONDUCTOR IS NICKED DURING EXCAVATION. ALLIANT WILL EVALUATE THE EXTENT OF THE DAMAGE SO AS TO DETERMINE WHETHER REPAIR IS REQUIRED PRIOR TO BACKFILL AND GRADE SURFACE RESTORATION.

SECTION 6.0 WORK

6.01 NO STORAGE OF EQUIPMENT OR MATERIALS IN THE ROADWAY IS PERMITTED UNLESS THE CONTRACTOR OBTAINS WRITTEN PERMISSION FROM THE CITY, STATE, AND/OR GOVERNING BODY.

6.02 THE CONTRACTOR SHALL MARK ALL OPENINGS ON THE SURFACE PRIOR TO THE COMMENCEMENT OF EXCAVATION. ALL OPENINGS ON PAVED SURFACES SHALL BE SAW CUT PRIOR TO REMOVAL OF PAVEMENT.

6.03 CONTRACTOR RESPONSIBLE FOR OBTAINING AND PROVIDING REVIEW AND DESIGN OF ANY AND ALL SHORING SYSTEMS PRIOR TO CONSTRUCTION.

6.04 CONTRACTOR SHALL ASSUME ALL ELECTRICAL CABLES ARE ENERGIZED AND SHALL BE SUPPORTED SO AS NOT TO STRESS ANY PORTION OF THE CABLE.

6.05 CONTRACTOR SHALL PROVIDE APPROPRIATE ENGINEERED DE-WATERING MEASURES, IF NECESSARY, TO ENSURE GROUNDWATER TABLE REMAINS AT A DEPTH BELOW THE BASE OF THE EXCAVATION AT ALL TIMES DURING EXCAVATION, INSTALLATION AND BACKFILLING OPERATIONS.

6.06 THE ENGINEER SHALL BE NOTIFIED FOR RESOLUTION OF SITUATIONS WHERE CONDUIT DEPTH BELOW GRADE DEVIATES BY MORE THAN 3" AS CURRENTLY SHOWN ON PLAN/PROFILE DRAWINGS.

6.07 THE ENGINEER SHALL ALSO BE NOTIFIED FOR DISPOSITION OF SITUATIONS WHERE THE CONDUIT CANNOT MAINTAIN SEPARATIONS PER PLAN.

SECTION 7.0 RESTORATION

7.01 THE CONTRACTOR SHALL OBTAIN A PERMIT TO PERFORM ALL RESTORATION WORK IN THE CONTRACTOR'S NAME. ALL PAVING SHALL BE COMPLETED WITHIN 15 WORKING DAYS AFTER EXCAVATION IS BACKFILLED UNLESS OTHERWISE ARRANGED IN ADVANCE WITH GOVERNING AGENCY.

7.02 CONTRACTOR SHALL BREAK OUT SIDEWALK, DRIVEWAY, CURB AND GUTTER, PAVEMENT AND RESTORE TO PERMANENT CONDITION. CONTRACTOR TO CONFORM CONCRETE TO COLOR, FINISH, AND TEXTURE OF EXISTING SIDEWALKS, CURB AND GUTTER.

7.03 THE CONTRACTOR IS RESPONSIBLE FOR THE RESTORATION OF THE AREAS DISTURBED BY CONSTRUCTION ACTIVITIES. CONTRACTOR TO PAY ALL FEES AND OBTAIN ALL PERMITS FOR RESTORATION.

7.04 THE CONTRACTOR IS TO RESTORE ALL DAMAGED STRUCTURES AND UTILITIES TO THE SATISFACTION OF THE FACILITY OWNER, IN THE EVENT THAT DAMAGE OCCURS.

LEGEND

FENCE	
EXISTING ROW LINE	
EXISTING FIBER OPTIC LINE	
EXISTING OVERHEAD LINE	
EXISTING STORM DRAIN	
EXISTING ELECTRIC (BURIED)	
EXISTING GAS LINE	
EXISTING STORM SEWER	
EXISTING SANITARY SEWER	
EXISTING WATER LINE	
EXISTING ICN FIBER	
EXISTING ICN (AERIAL)	
EXISTING ICN CONDUIT	
TO BE ABANDONED	
PROPOSED ICN FIBER	
PROPOSED AERIAL	
PROPOSED ICN CONDUIT	
CENTERLINE OF ROAD	
EXISTING WATERWAY BOUNDARY	
PROPOSED ICN HANDHOLE	
EXISTING ICN HANDHOLE	
PROPOSED HANDHOLE (BY OTHERS)	
EXISTING STORM CULVERT LOCATION	
EXISTING STORM MANHOLE	
EXISTING STORM INLET	
EXISTING SANITARY MANHOLE	
EXISTING SANITARY CLEAN OUT	
EXISTING FIBER OPTIC MANHOLE	
EXISTING FIBER OPTIC HANDHOLE	
EXISTING COMMUNICATIONS MANHOLE	
EXISTING COMMUNICATIONS HANDHOLE	
EXISTING COMMUNICATIONS PEDESTAL	
EXISTING ELECTRIC MANHOLE	
EXISTING ELECTRIC TRANSFORMER	
EXISTING ELECTRIC PEDESTAL	
EXISTING ELECTRIC HANDHOLE	
EXISTING UTILITY POLE	
EXISTING GUY ANCHOR	
EXISTING LIGHT POLE	
EXISTING WATER MANHOLE	
EXISTING WATER VALVE	
EXISTING MONITORING WELL	
EXISTING FIRE HYDRANT	
EXISTING NATURAL GAS MANHOLE	
EXISTING NATURAL GAS VALVE	
EXISTING TREE	

WEST DES MOINES IOWA NATIONAL GUARD
FIBER INSTALLATION



1	FOR 60% REVIEW	11/13/2023
2	FOR PERMIT PLANS	12/06/2023
3		
4		

IOWA COMMUNICATIONS NETWORK
400 EAST 14TH STREET
GRIMES STATE OFFICE BUILDING
DES MOINES, IOWA 50319
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ICN GENERAL NOTES

STANDARD INSTALLATION REQUIREMENTS:

GENERAL REQUIREMENTS:

1.

THE CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITIES.
2.

PROVIDE THE OWNERS OF ANY NATURAL GAS UTILITY 48 HOURS ADVANCE NOTICE THAT WORK IS SCHEDULED IN THE VICINITY OF THEIR LINES/MAINS SO THAT THEY CAN PROVIDE STANDBY AND PROTECT SERVICES.
3.

MAINTAIN PROOF OF NOTIFICATION TO AND RECEIPT OF NOTIFICATION BY THE GAS UTILITY.
4.

PERMITS AND COORDINATION
- 4.1.

SECURE ALL NECESSARY STATE AND LOCAL (CITY, COUNTY, ETC.) PERMITS, PUBLIC OR PRIVATE EASEMENTS, FACILITY PERMITS, USAGE PERMITS, AND ANY OTHER PERMIT REQUIRED BY AN AUTHORITY HAVING JURISDICTION (AHJ). ALL CONTRACTORS AND SUBCONTRACTORS MUST BE LICENSED AND BONDED WITH THE CITY OF CLEAR LAKE.
- 4.2.

ICN WILL OBTAIN AND PROVIDE COPIES OF IDOT PERMITS.
- 4.3.

IF PERMITS ARE REQUIRED TO BE IN THE NAME OF THE OWNER RATHER THAN THE CONTRACTOR, THE CONTRACTOR SHALL PREPARE THE PERMIT FOR THE OWNER'S SIGNATURE.
- 4.4.

COORDINATE INSTALLATION WITH ALL OWNERS AND AHJ OVER THE ROUTE, THE FIBER, RIGHT-OF-WAY AND BUILDINGS IN WHICH END POINTS WILL BE LOCATED.
- 4.5.

FAILURE TO COORDINATE WITH THE AHJ AND TO OBTAIN ALL NECESSARY PERMITS IS AT THE PERIL OF THE CONTRACTOR.
- 4.6.

RIGHT-OF-WAY PERMIT FEES ARE AN AUTHORIZED EXTRA ABOVE THE QUOTED BID PRICE. EXCAVATION PERMITS SHALL BE BY THE CONTRACTOR.
- 4.7.

ENSURE ALL FACILITIES ARE PLACED WITHIN THE PUBLIC RIGHT-OF-WAY.
5.

ENSURE THAT PERSONNEL WORKING IN THE ROW ARE EQUIPPED WITH AND USE PROPER SAFETY EQUIPMENT AND ATTIRE.
6.

ALL TOOLS AND TEST EQUIPMENT REQUIRED TO DO A PROJECT SHALL BE PROVIDED BY THE CONTRACTOR OR ITS SUBCONTRACTOR(S). SECURITY OF TOOLS AND TEST EQUIPMENT SHALL BE THE RESPONSIBILITY OF EACH WORKER. THE ICN SHALL NOT BE RESPONSIBLE FOR THE SECURITY OF ANY PROPERTY LEFT ON ICN'S PROPERTY OR ON PROPERTY CONTROLLED BY THE ICN OR THE STATE OF IOWA.
7.

CONTRACTOR SHALL BE RESPONSIBLE FOR INSTRUCTING ITS EMPLOYEES IN SAFETY MEASURES CONSIDERED APPROPRIATE FOR THE JOB. IN ADDITION, THE CONTRACTOR SHALL NOT PERMIT PLACING OR USE OF TOOLS OR MATERIALS IN TRAFFIC LANES OR OTHER LOCATIONS. THE TOOLS OR MATERIALS SHALL NOT BE PLACED IN SUCH A MANNER SO AS TO CREATE SAFETY HAZARDS TO STATE EMPLOYEES, CONTRACTING AGENCY EMPLOYEES, THE PUBLIC OR THEMSELVES.
8.

EXCAVATIONS AND TRENCHES: THE ICN REQUIRES ALL OPEN EXCAVATIONS OR TRENCHES TO BE MONITORED AND ATTENDED TO DURING CONSTRUCTION PER. THE ICN REQUIRES ALL OPEN EXCAVATIONS AND TRENCHES BACKFILLED THE SAME DAY. IF THE CONTRACTOR IS REQUIRED TO LEAVE AN EXCAVATION OR TRENCH OPEN, THEN THE CONTRACTOR SHALL PROPERLY FENCE AND/OR COVER THE EXCAVATION FOR SAFETY. CONTRACTOR SHALL FOLLOW ALL OSHA REQUIREMENTS FOR EXCAVATION AND TRENCH SAFETY.
9.

CONTRACTOR AND ITS EMPLOYEES SHALL COMPLY WITH ALL OSHA REGULATIONS. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS.
10.

CONTRACTOR SHALL COMPLY WITH ALL IOWA ONE CALL REQUIREMENTS AS PROVIDED BY IOWA CODE, CHAPTER 480.
11.

PROVIDE ALL LABOR AND SUPERVISION FOR THE PROJECT.
12.

PROVIDE AND INSTALL MATERIALS NEEDED TO RESULT IN A FULLY FUNCTIONAL SYSTEM MEETING ICN STANDARDS, WHETHER OR NOT THE MATERIALS OR METHODS ARE SPECIFICALLY MENTIONED IN THIS DOCUMENT. SEE THE LIST OF ICN-FURNISHED MATERIALS.
13.

INSTALL CABLE ROUTE MARKERS FURNISHED BY ICN. WHERE POSSIBLE, INSTALL MARKERS ADJACENT TO POLES, BUILDINGS OR IN OTHER PROTECTED AREAS.
14.

A COPY OF THIS SCOPE OF WORK AND THE ENGINEERING PLAN FOR THIS PROJECT SHALL BE ON SITE AND AVAILABLE ANY TIME WORK IS BEING PERFORMED. FAILURE TO HAVE THE REQUIRED DOCUMENTS ON SITE MAY RESULT IN ICN REQUIRING THE CONTRACTOR TO STOP WORKING UNTIL THE REQUIRED DOCUMENTS ARE ON-SITE.
15.

SUBCONTRACTORS SHALL MEET THE SAME QUALIFICATIONS STATED FOR CONTRACTORS. CONTRACTOR SHALL OBTAIN APPROVAL OF THE CONTRACTING AGENCY'S PROJECT MANAGER PRIOR TO USING A SUBCONTRACTOR ON ANY PROJECT.
16.

RESTORE ALL DAMAGE TO PRIVATE PROPERTY, RIGHT-OF-WAY, ICN PROPERTY, AND ANY OTHER PROPERTY DAMAGED IN THE COURSE OF THE WORK.
- 16.1.

ANY DISRUPTION OF GRASS IN AN INDIVIDUAL'S YARD OR IN A PRIVATE MAINTAINED AREA OF THE PUBLIC RIGHT OF WAY (THE AREA BETWEEN THE SIDEWALK AND THE STREET CURB) MUST BE RESTORED THROUGH RE-SODDING. ANY DISRUPTION OF THE GRASS IN THE MEDIAN WAY OR AN UNIMPROVED SHOULDER MUST BE RESTORED EITHER THROUGH RE-SODDING OR RE-SEEDING AS REQUIRED BY THE ROW OWNER.
- 16.2.

AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
- 16.3.

DIRT SHALL BE MECHANICALLY COMPACTED AROUND HANDHOLES AND PITS.
- 16.4.

LAWNS SHALL BE SODDED WITH LIKE GRASS.
- 16.5.

CONTRACTOR IS RESPONSIBLE FOR WATERING THE SOD UNTIL IT HAS KNITTED TO THE GROUND BENEATH.
- 16.6.

ALL DEBRIS SHALL BE REMOVED FROM THE CONSTRUCTION AREAS INCLUDING BUT NOT LIMITED TO: CONSTRUCTION MATERIALS, TRASH, LARGE OBJECTS OR STONES WITHIN BACKFILLED AREAS, ETC.

DUCT INSTALLATION REQUIREMENTS

1.

HDPE DUCT SHALL BE NO LESS THAN 36-42 INCHES DEEP.
2.

DUCT SHALL BE INSTALLED IN THE PUBLIC RIGHT-OF-WAY.
3.

WHEN CROSSING A HIGHWAY IN DOT RIGHT-OF-WAY, DUCT SHALL BE NO LESS THAN 48 INCHES BELOW GRADE UNDER THE ROADWAY AND SHOULDERS. HDPE MAY BE USED UNDER THE ROADWAY AND SHOULDERS IF INSTALLED AT A MINIMUM DEPTH OF 48".
4.

SHOULD IT BE NECESSARY TO CROSS PRIVATE PROPERTY, THE CONTRACTOR MAY APPLY TO THE ICN FOR AN EXCEPTION, AND REQUEST PERMISSION TO SECURE AN EASEMENT. THE EASEMENT IS REQUIRED TO BE IN THE NAME OF ICN AND THE CONTRACTOR SHALL HAVE THE EASEMENT PREPARED BY A LAND SURVEYOR LICENSED IN THE STATE OF IOWA. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES UNLESS PREVIOUSLY AUTHORIZED BY THE ICN.
5.

AT THE CONCLUSION OF THE PROJECT, PROVIDE AND LEAVE A PULL ROPE IN ALL DUCTS, CONDUITS AND PATHWAYS, INCLUDING INDOOR, OUTDOOR, NEW AND EXISTING.
6.

DIRT SHALL BE MECHANICALLY COMPACTED AT ALL DUCT SPLICES, BORE PITS AND AROUND HANDHOLES.
7.

GROUND SHALL BE RESTORED TO THE CONDITION FOUND PRIOR TO CONSTRUCTION AND DEBRIS REMOVED PRIOR TO SODDING OR SEEDING.
8.

ALL CONDUITS SHALL BE PLUGGED VIA DUCT SEAL OR OTHER METHOD UPON COMPLETION OF CABLE INSTALLATION.
9.

IF SCHEDULE 40 PVC CONDUIT IS UTILIZED, ALL ANGLES (45, 90 DEGREE OR OTHER) REQUIRE FITTINGS TO LONG SWEEP TO ACCOMMODATE MINIMUM CABLE BEND RADIUSES.
10.

THE ICN REQUIRES PICTURES BY THE CONTRACTOR AND/OR ON- SITE INSPECTION BY ICN STAFF PRIOR TO COMPLETION OF THE PROJECT WHERE PIPE AND FITTINGS ARE NOT EXPOSED; I.E. UNDERGROUND, BEHIND A WALL, ETC.

HANDHOLE REQUIREMENTS

1.

INSTALL HANDHOLES SO THAT THE LID IS LEVEL AND FLUSH WITH THE SURROUNDING NATURAL GRADE. THE LID SHALL NOT EXTEND ABOVE THE SURROUNDING NATURAL GRADE.
2.

PROVIDE ¼" OPENING HARDWARE CLOTH TYPE SCREEN WIRE BELOW THE HANDHOLE.
3.

PROVIDE 5-6 INCHES OF ¾" CRUSHED ROCK BELOW THE HANDHOLE. ROCK SHALL BE COMPACTED. GRAVEL SHALL EXTEND A MINIMUM OF 6 INCHES BEYOND THE OUTSIDE WALLS OF THE HANDHOLE. DO NOT USE PEA GRAVEL OR OTHER ROUND STONE.
4.

DO NOT PLACE GRAVEL INSIDE HANDHOLE ABOVE THE HARDWARE CLOTH.
5.

CONDUIT SHALL EXTEND A MINIMUM OF 6" ABOVE THE HARDWARE CLOTH/GRAVEL.
6.

FAILURE OF THE CONTRACTOR TO INSTALL HANDHOLES AS SPECIFIED WILL CAUSE THE CONTRACTOR TO RETURN AND RE-INSTALL THE HANDHOLE ACCORDING TO THIS SPECIFICATION BEFORE PAYMENT FOR THE PROJECT IS MADE.
7.

HANDHOLE INSTALLATIONS SHALL FOLLOW ICN STANDARD TYPICAL INSTALLATION; SEE TYPICAL DRAWING.

FIBER INSTALLATION REQUIREMENTS

1.

INSTALL FIBER ACCORDING TO INDUSTRY "BEST PRACTICES".
2.

THE CONTRACTOR SHALL NOT VIOLATE THE MANUFACTURER'S MINIMUM INSTALLATION BEND RADIUS WHEN THE CABLE IS UNDER TENSION, OR THE MINIMUM INSTALLED BEND RADIUS.
3.

TO PREVENT EXCEEDING THE MANUFACTURER'S MAXIMUM PULLING TENSION DURING INSTALLATION OF THE FIBER OPTIC CABLE, THE CONTRACTOR SHALL USE A "BREAK-AWAY" PULLING SWIVEL WHEN INSTALLING CABLE.
4.

THE "BREAK-AWAY" FUNCTION SHALL ACTIVATE AT OR BELOW THE MAXIMUM PULLING TENSION SPECIFIED BY THE CABLE MANUFACTURER.
5.

THE CONTRACTOR SHALL TEST ALL STRANDS OF THE FIBER, ON THE REEL, PRIOR TO BEGINNING FIBER INSTALLATION. CONFIRM THAT ALL STRANDS MEET MANUFACTURER'S LOSS SPECIFICATIONS.
6.

THE CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION.
7.

SLACK LOOPS IN HANDHOLES SHALL BE COILED, INSTALLED, AND SECURED TO AVOID DAMAGE TO THE COIL AND NOT INTERFERE WITH LIDS.
8.

SLACK LOOPS AT SPLICES SHALL BE COILED TO MATCH THE EXISTING FIBER CABLE TAILS AND ALLOWANCE FOR SPLICE PREPARATION.
9.

ICN FIBER IN ALL HANDHOLES SHALL BE LABELED WITH ICN WRAP AROUND CABLE TAGS OR OTHER LABELED CABLE TAGS.

BUILDING ENTRY REQUIREMENTS

1.

WEATHER-SEAL ALL PENETRATIONS.
2.

USE MORTAR OR SIMILAR CEMENT TO SEAL PENETRATION OF BRICK OR CEMENT BLOCK.
3.

FIRESTOP PENETRATIONS OF ANY FIRE-RATED FLOOR, WALL OR CEILING.
4.

REPLACE THE FIRESTOP MATERIAL IN ANY EXISTING FIRESTOPPED PENETRATION USED BY THE CONTRACTOR.
5.

ALL OUTDOOR CONDUITS, OF ANY LENGTH, SHALL BE GALVANIZED IRON PIPE (GIP). EMT, PVC AND PLASTIC ARE PROHIBITED.
6.

IMMEDIATELY UPON INSTALLATION, SEAL THE ENDS OF ALL DUCTS WITH DUCT SEAL OR EXPANSION FOAM TO PREVENT SILTATION OR FILLING WITH MOISTURE. THIS APPLIES TO BOTH NEW AND EXISTING DUCTS.
7.

AT THE CONCLUSION OF THE PROJECT, ENSURE THAT A PULL ROPE IS LEFT IN ALL PATHWAYS, BOTH INSIDE AND OUTSIDE, NEW AND EXISTING.

LOCATE FACILITY REQUIREMENTS

1.

TRACER WIRE SHALL BE CONTINUOUS.
2.

SPLICES IN THE TRACER WIRE ARE NOT ALLOWED. IF TRACER WIRE IS ACCIDENTALLY SEVERED, REQUEST PERMISSION FROM ICN TO SPLICE.
3.

SPLICE ONLY IN HANDHOLES.
4.

USE EITHER AN EPOXY SPLICE KIT, SCOTCH 3M 3832 OR A MOLEX PERMASEAL BUTT SPLICE. 10-12 GA. SPLICE MATERIALS SHALL BE DESIGNED FOR UNDERGROUND APPLICATIONS.
5.

LEAVE THE WIRE SPLICE VISIBLE IN THE HANDHOLE.
6.

ROUTE A GROUND WIRE FROM THE GROUND INSIDE THE BUILDING, THROUGH THE ENTRY TO THE TII 163 TERMINAL.
7.

SECURE ALL RISER CONDUITS WITH 3 EACH TWO-HOLE CONDUIT STRAPS.
8.

WIRE THE PEDESTAL/TERMINAL SO THAT LOCATES MAY BE PERFORMED IN ANY DIRECTION AND FROM THE FAR END.
9.

DO NOT LEAVE ANY EXPOSED TRACER WIRE OR GROUND WIRE.
10.

PERMANENTLY GROUND THE TRACER WIRE AT THE HANDHOLE ON THE FURNISHED GROUND ROD.
11.

AT THE CONCLUSION OF THE PROJECT LEAVE THE TRACER WIRE SHIELD SHORTED TO GROUND IN THE LOCATE TERMINAL.
12.

USE TRACER WIRE THAT IS RATED FOR DIRECT BURIAL WHERE REQUIRED. TRACER WIRE SHALL BE #12 AWG, SOLID HF CCS 30 MIL HDPE HIGH FLEX TRACER WIRE: EITHER SOLID COPPER OR COPPER CLAD STEEL.
13.

LABEL ALL WIRES IN THE LOCATE TERMINAL/PEDESTAL/TRIVIEW. (I.E. "GROUND", "FACING DMACC", "FACING NORTH" ETC.)
14.

FAILURE TO LABEL THE LOCATE WIRES WILL CAUSE THE CONTRACTOR TO RETURN AND PROPERLY LABEL THE WIRES BEFORE PAYMENT FOR THE PROJECT IS MADE.
15.

BOND TRACER WIRE(S) WITHIN SPLICE ENCLOSURES UTILIZING A 3M 4460-D\FO SHIELD BONDING KIT.
16.

ROUTE TRACER WIRE(S) OUT OF SPLICE ENCLOSURE THROUGH A SINGLE PORT UTILIZING A FOSC CLOSURE SEALING KIT.
17.

AT SPLICE LOCATIONS WITH NO LOCATE PEDESTAL, TRACER WIRES SHALL BE BONDED TOGETHER, WITHIN THE SPLICE ENCLOSURE.
18.

AT EACH END OF ANY TRACER WIRE, USE APPROPRIATE-SIZED RING TERMINAL (CRIMP) CONNECTORS USING APPROPRIATE CRIMP TOOL; OR CREATE A WIRE EYELET AS PER TYPICAL INSTALLATION OF TRI-VIEW LOCATE PEDESTAL DETAIL.

DELIVERABLES/ACCEPTANCE:

1.

CONTRACTOR SHALL PROVIDE CONSTRUCTION REDLINE AS-BUILTS WITH:
- 1.1.

OFFSETS TO FIXED OBJECTS TO THE CABLE/CONDUIT RUNNING LINE, HANDHOLES AND NEW FACILITIES.
- 1.2.

METER MARKS OF CABLE INSTALLATIONS AT HANDHOLE ENTRY/EXIT, SPLICE LOCATIONS, BUILDING ENTRIES, ETC.
- 1.3.

DEPTHS OF CABLE AND/OR CONDUIT INSTALLATION.
- 1.4.

ONE ORIGINAL SET OF AS-BUILT DRAWINGS MUST BE PROVIDED WITHIN TWO (2) WEEKS AFTER COMPLETION OF CONSTRUCTION FOR THE ICN MANAGEMENT RECORDS. REDLINE AS-BUILT DRAWINGS MUST BE COMPLETE.
2.

CONTRACTOR SHALL PROVIDE SPLICING REDLINE OF ALL SPLICING COMPLETED AND VALIDATION THAT THE SPLICE PLAN WAS FOLLOWED.
3.

CONTRACTOR IS RESPONSIBLE TO LOCATE FIBER UNTIL ACCEPTANCE BY THE ICN. ACCEPTANCE INCLUDES:
- 3.1.

SUBMISSION OF CONSTRUCTION AND SPLICING RED LINE DRAWINGS BY CONTRACTOR.
- 3.2.

ASSIGNMENT OF LINK NUMBER BY THE ICN (IF APPLICABLE).
- 3.3.

SUBMISSION OF FINAL AS BUILT DRAWING BY THE ICN TO THE ICN NETWORK MAINTENANCE PROVIDER.
- 3.4.

SUBMISSION TO IOWA ONE CALL AND THE ICN NETWORK MAINTENANCE PROVIDER'S CONTRACT LOCATER.
- 3.5.

THE MEASUREMENTS IN THE STATEMENT OF WORK ARE ESTIMATES AND NEED TO BE VERIFIED BY THE CONTRACTOR.
4.

ONLY WRITTEN MODIFICATIONS TO THIS SCOPE OF WORK ARE BINDING - VERBAL CHANGES TO THIS SCOPE OF WORK BY ANY PERSON OR PERSONS ARE NOT BINDING, UNLESS CONFIRMED IN WRITING.
5.

FINAL PAYMENT WILL NOT BE PROCESSED UNTIL ALL DELIVERABLES ARE RECEIVED AND ACCEPTED.

CITY OF WEST DES MOINES REQUIREMENTS:

1.

CONTACT THE CITY OF WEST DES MOINES ENGINEERING SERVICE DEPARTMENT (515-222-3475), AT LEAST 48 HOURS PRIOR TO ANY UTILITY WORK LOCATION IN THE CITY.
2.

AT LEAST 48 HOURS PRIOR TO STARTING WORK AT ANY UTILITY WORK LOCATION CONTACT THE CITY OF WEST DES MOINES PUBLIC WORKS SEWER DIVISION (515-222-3480) PRIOR TO STARTING ANY UTILITY WORK FOR CITY SANITARY AND STORM SEWER LOCATE INFORMATION.
3.

MAINTAIN AT LEAST ONE FOOT (1') OF HORIZONTAL CLEARANCE AND AT LEAST ONE FOOT (1') OF VERTICAL CLEARANCE FROM STORM SEWER PIPES AND STRUCTURES.
4.

MAINTAIN AT LEAST FOUR FEET (4') OF HORIZONTAL CLEARANCE AND ONE AND ONE-HALF (1.5') OF VERTICAL CLEARANCE FROM SANITARY SEWER PIPES AND STRUCTURES.
5.

CONTACT THE CITY OF WEST DES MOINES WATER WORKS DEPARTMENT (515-222-3465) AT LEAST 48 HOURS PRIOR TO STARTING ANY UTILITY WORK WITHIN 50 FEET OF ANY WATER INFRASTRUCTURE, PUBLIC OR PRIVATE.
6.



MAINTAIN AT LEAST THREE FEET (3') OF HORIZONTAL AND TWO FEET (2') OF VERTICAL CLEARANCE FROM WATER MAINS.
7.

MAINTAIN 4 FEET (4') OF HORIZONTAL CLEARANCE FROM SIGNAL POLES AND TRAFFIC CABINETS. DO NOT EXCEED 5 FEET (5') DEEP WITHIN 10 FEET.
8.

MAINTAIN ONE FOOT (1') VERTICAL CLEARANCE FROM SIGNAL CONDUIT.
9.

MAINTAIN 2 FEET (2') OF HORIZONTAL CLEARANCE AND 2 FEET (2') OF VERTICAL CLEARANCE FROM FIBER AND INTERCONNECT LINES.



WEST DES MOINES IOWA NATIONAL GUARD FIBER INSTALLATION				 
1	FOR 60% REVIEW	11/13/2023	IOWA COMMUNICATIONS NETWORK 400 EAST 14TH STREET GRIMES STATE OFFICE BUILDING DES MOINES, IOWA 50319 ICN © 2021, COPY WITH PERMISSION	
2	FOR PERMIT PLANS	12/06/2023		
3				
4				
SCALE: NONE		SIZE: 11" X 17"	ICN GENERAL NOTES	PAGE 3 OF 29

ICN PROVIDED MATERIALS			
CATEGORY	ITEM DESCRIPTION	UNIT	QTY
FDP, BULKHEADS, TRAYS	CORNING CCH-01U RACK MOUNT FDP	EA	1
FDP, BULKHEADS, TRAYS	CORNING CCH 6f SM SC CASSETTE LOADED	EA	1
FDP, BULKHEADS, TRAYS	LEVITON STORAGE RING 24-INCH	EA	1
LOCATE FACILIIES	TRIVIEW TEST STATION	EA	2
LOCATE FACILIIES	TRIVIEW WARNING MARKER 78IN	EA	12
LOCATE FACILIIES	ICN SNAP AROUND	EA	20
SPLICE CLOSURE	*450B SPLICE CLOSURE	EA	2
SPLICE TRAY	*B TRAY 24-POS	EA	2
SHIELD BOND CONNECTOR	*SHIELD BOND CONNECTOR	EA	6
SEALING KIT	*FOSC CLOSURE SEALING KIT	EA	2

CONTRACTOR SUPPLIED MATERIALS			
CATEGORY	ITEM DESCRIPTION	UNIT	QTY
DUCT	1.25" ORANGE HDPE DUCT	LFT	16422
FIBER CABLE	48F ARMORED SM CABLE	LFT	19,200
HANDHOLES	24X36X36 TIER 15 HH W/LID	EA	13
LOCATE FACILITIES	6 AWG BARE SOLID COPPER GROUND WIRE	LFT	20
LOCATE FACILITIES	12 AWG HDPE ORANGE SOLID COPPER WIRE	LFT	250
LOCATE FACILITIES	1/2" X 6' GROUND ROD	EA	2
LOCATE FACILIIES	1/2" GROUND ROD CLAMP	EA	2

ESTIMATE OF QUANTITIES				
ITEM NO.	ITEM	UNIT	PLANNED TOTAL	AS-BUILT TOTAL
1	MOBILIZATION	LS	1	
2	INSTALL 24" X 36" X 36" HANDHOLE	EA	13	
3	1.25" CONDUIT	LF	16422	
5	48 SM ARMORED FIBER (TOTAL)	LF	18228	
6	48 SM ARMORED FIBER (RUNNING LINE)	LF	16703	
7	48 SM ARMORED FIBER (COIL)	LF	1525	
8	TYCO 450B SPLICE ENCLOSURE	EA	2	
9	CONSTRUCTION ROW SURVEY	EA	1	

NOTE: CONDUIT INSTALLATION METHOD SHALL BE BORED UNDER ANY ROADWAYS, DRIVEWAYS, AND PAVED SURFACES. THE METHOD BETWEEN PLOW VERSUS BORE FOR CONDUIT INSTALLATION IS AT THE CONTRACTORS DISCRETION. 48" MINIMUM DEPTH BELOW ALL PAVED SURFACES.

NOTE ON HDPE CONDUIT AND SPLICES:

1. HDPE SHALL BE ORANGE SMOOTH WALL SDR 13.5
2. DUCT SPLICES SHALL BE MADE OF THE FOLLOWING (IN ORDER OF PREFERENCE.)
- ELECTROFUSION
- CRIMP ON
- CLAMP ON / BOLT ON (SPLIT COUPLINGS)
- PUSH ON
3. **ALL SPLICES SHALL BE AIR AND WATER TIGHT**
4. DUCT SPLICES SHALL BE OF A TYPE MADE SPECIFICALLY FOR JOINING HDPE CONDUIT
5. ALL DUCT SPLICES SHALL BE MADE IN SUCH MANNER AS TO ALLOW CONTINUOUS PULLING OF CABLE THROUGH DUCT.

NOTE ON OSP FIBER CABLE

Single Mode, Single Armor, Gel Free, Loose Tube OSP cable (12-strand minimum, refer to Materials)
Tensile Strength: 600 lb short term
Attenuation: 0.35/0.25 dB at 1310/1440 nm

NOTE ON HANDHOLE(S):

Polymer Concrete (Quazite, New Basis, Martin, e.g.) 24"x36"x30" Tier 15
Hybrid Polymer Concrete - Fiberglass (Oldcastle FRP, e.g.) 24"x36"x30" Tier 15

*NOTE ON CONTRACTOR PROVIDED MATERIAL(S):

Contractor shall supply all other materials required for proper installation, including but not limited to: HDPE, Duct Splices, Grounding and Tracer Wires, Rock, Wire Mesh, etc.

ANY EXCEPTIONS MUST BE AGREED UPON IN WRITING PRIOR TO CONSTRUCTION.

LISTING OF CONDUIT & FIBER WORK					
CONDUIT RUN	FROM	TO	LENGTH	1 1/4" CONDUIT	48 SM ARMORED FIBER, UNDERGROUND
1	TELECOM ROOM	HH1-EX	281		281
2	HH1-EX	HH2	66	66	66
3	HH2	HH3	1874	1874	1874
4	HH3	HH4	1249	1249	1249
5	HH4	HH5	1060	1060	1060
6	HH5	HH6	978	978	978
7	HH6	HH7	79	79	79
8	HH7	HH8	1396	1396	1396
9	HH8	HH9	1279	1279	1279
10	HH9	HH10	1400	1400	1400
11	HH10	HH11	1029	1029	1029
12	HH11	HH12	1337	1337	1337
13	HH12	HH13	1176	1176	1176
14	HH13	HH14	2073	2073	2073
15	HH14	HH15-EX	1426	1426	1426
TOTAL			16703	16422	16703

NOTE: THIS TABLE SHOWS APPROXIMATE LENGTHS IN CONDUIT ONLY AND DOES NOT INCLUDE ANY COILS OR SLACK FOR FIBER CABLES, TRACER WIRE, PULL ROPE, ETC. CONTRACTOR SHALL VERIFY NECESSARY QUANTITIES INCLUDING COILS.

LISTING OF HANDHOLE WORK				
HANDHOLE LABEL	HANDHOLE TYPE	ROUTE	STATION	48 SM ARMORED FIBER COIL
NG 1625 SE COUNTY LINE ROAD	BLDG	VETERANS PKWY	0+00	50
HH1	EXISTING HH	VETERANS PKWY	2+81	10
HH2	24" X 36" X 36"	HWY 5	3+47	100
HH3 - MIDSHEATH/LOCATE PT	24" X 36" X 36"	HWY 5	22+21	150
HH4	24" X 36" X 36"	HWY 5	34+70	100
HH5	24" X 36" X 36"	HWY 5	45+30	100
HH6	24" X 36" X 36"	HWY 5	55+08	100
HH7	24" X 36" X 36"	HWY 5	55+87	100
HH8	24" X 36" X 36"	HWY 5	69+83	100
HH9	24" X 36" X 36"	HWY 5	82+62	100
HH10	24" X 36" X 36"	HWY 5	96+62	100
HH11	24" X 36" X 36"	HWY 5	106+91	100
HH12	24" X 36" X 36"	HWY 5	120+28	100
HH13	24" X 36" X 36"	HWY 5	132+04	100
HH14	24" X 36" X 36"	HWY 5	152+77	150
HH15 - MIDSHEATH SPLICE	EXISTING HH	HWY 5	167+03	75
TOTAL				1535

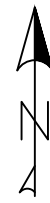


WEST DES MOINES IOWA NATIONAL GUARD
FIBER INSTALLATION

1	FOR 60% REVIEW	11/13/2023
2	FOR PERMIT PLANS	12/06/2023
3		
4		

IOWA COMMUNICATIONS NETWORK
400 EAST 14TH STREET
GRIMES STATE OFFICE BUILDING
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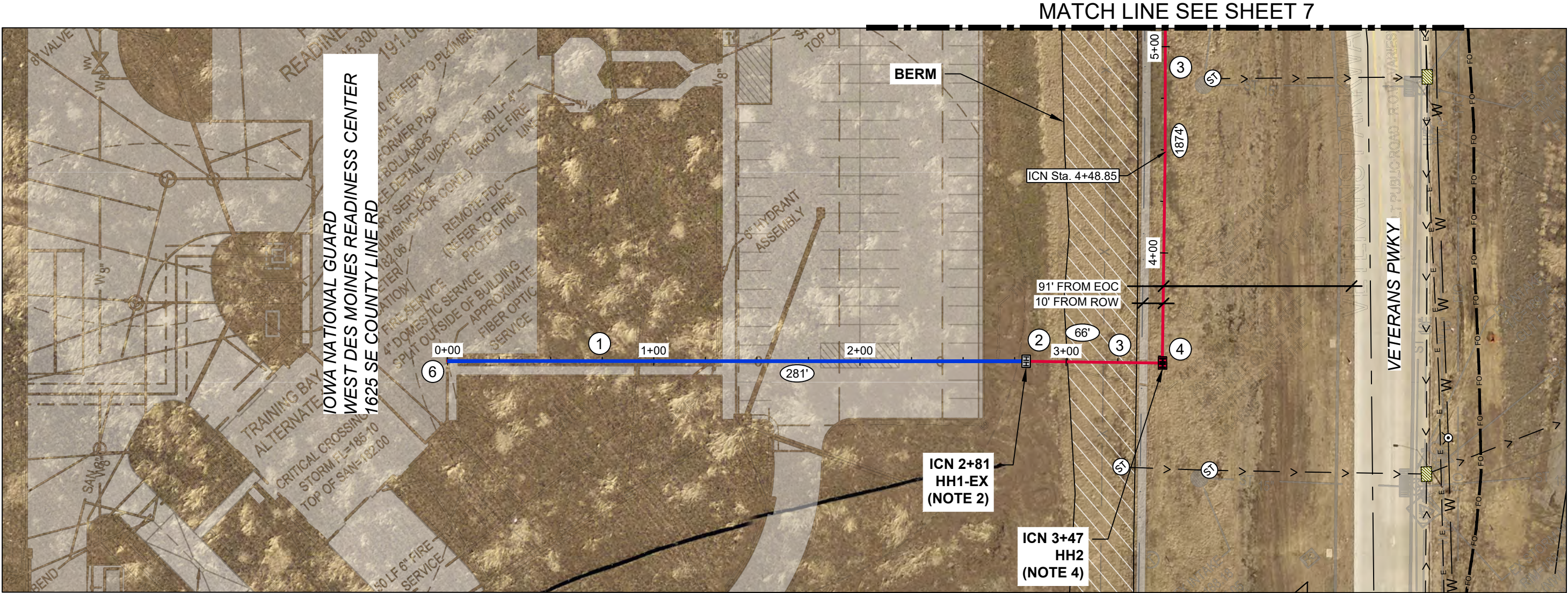


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POLK COUNTY
BLOOMFIELD TOWNSHIP
T34-N R25-W

- 1 PULL NEW LINK 1728B 48 F/A THROUGH EXISTING 2" HDPE CONDUIT TO TELECOM ROOM.
- 2 ICN STA. 2+81 EXISTING IA-ARNG HH - HH1-EX. LINK 1728B 48F/A 10' SLACK COIL.
- 3 PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT. 42" MINIMUM BELOW GRADE.
- 4 ICN STA. 3+47 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH2. LINK 1728B 48 F/A 100' SLACK COIL.
- 5 OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- 6 NEW LINK 1728B 48 F/A 50' COIL FOR TERMINATIONS. TEMPORARILY BOND TO GROUND BAR. SEE SHEET 20 FOR INTERIOR LAYOUT.
- 6 ALL UTILITIES THAT RESPONDED TO DESIGN LOCATE REQUEST ARE SHOWN.
- 7 CONTRACTOR TO STAKE ROW FROM HH2 TO HH3 (ICN STA. 3+47 TO 22+21)



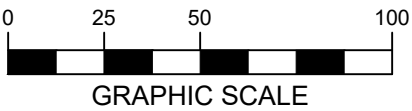
HH1-EX - ICN STA. 2+81



HH1-EX - ICN STA. 2+81



HH2 - ICN STA. 3+47



LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
TELECOM ROOM	0+00	HH1-EX	2+81	281
HH1-EX	2+81	HH2	3+47	66
HH2	3+47	HH3	22+21	1874
TOTAL				2221

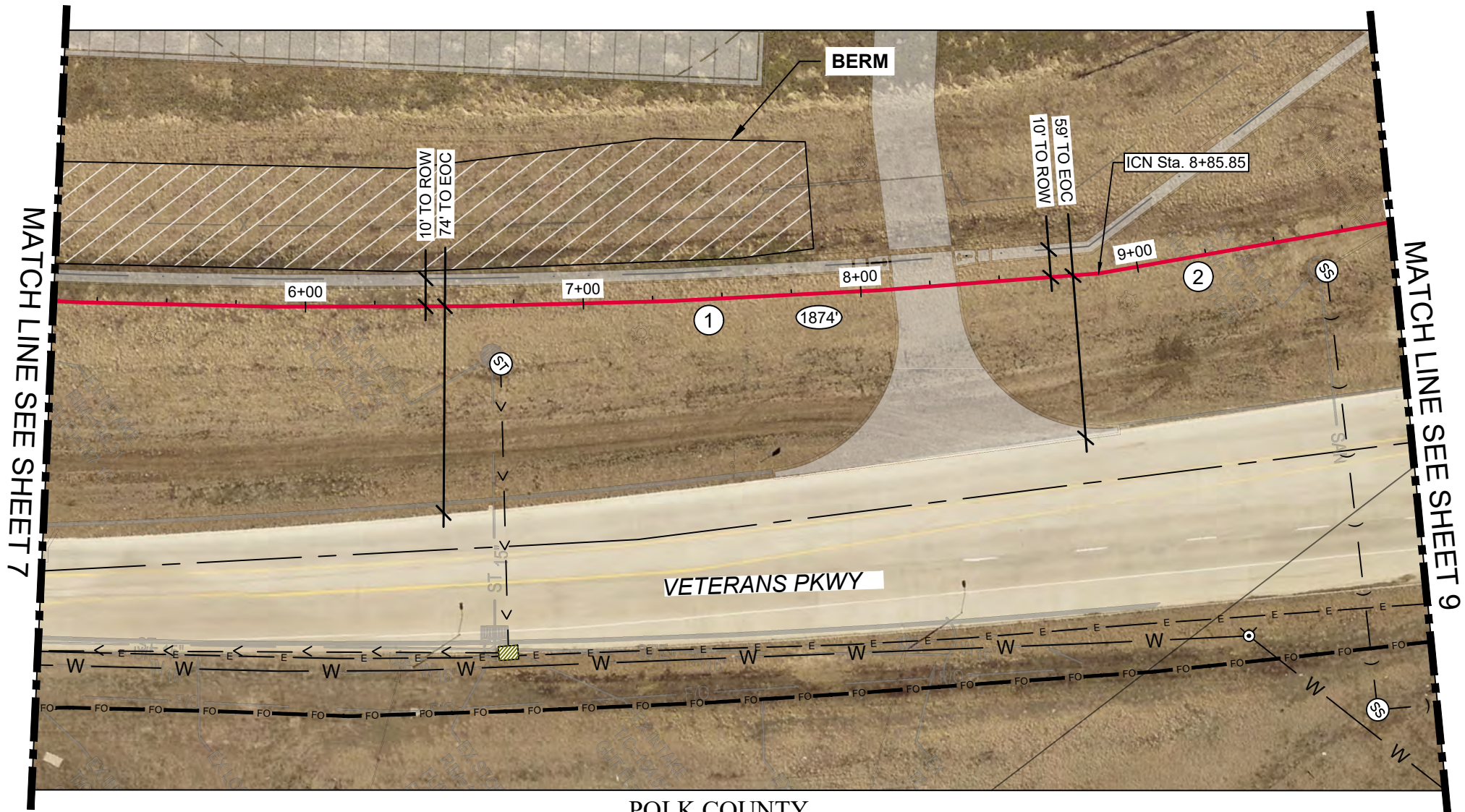
* LENGTH DOES NOT INCLUDE SLACKCOILS



WEST DES MOINES IOWA NATIONAL GUARD
FIBER INSTALLATION

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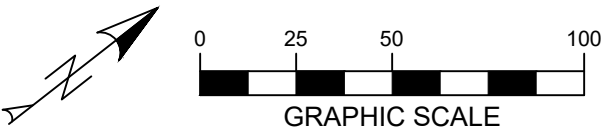
POLK COUNTY
BLOOMFIELD TOWNSHIP
T34-N R25-W

LOOKING SOUTH



ICN STA. 8+86

- ① PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT. 42" MINIMUM BELOW GRADE.
- ② OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- ③ ALL UTILITIES THAT RESPONDED TO DESIGN LOCATE REQUEST ARE SHOWN.
- ④ CONTRACTOR TO STAKE ROW FROM HH2 TO HH3 (ICN STA. 3+47 TO 22+21)



LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH2	3+47	HH3	22+21	1874
TOTAL				1874

* LENGTH DOES NOT INCLUDE SLACKCOILS

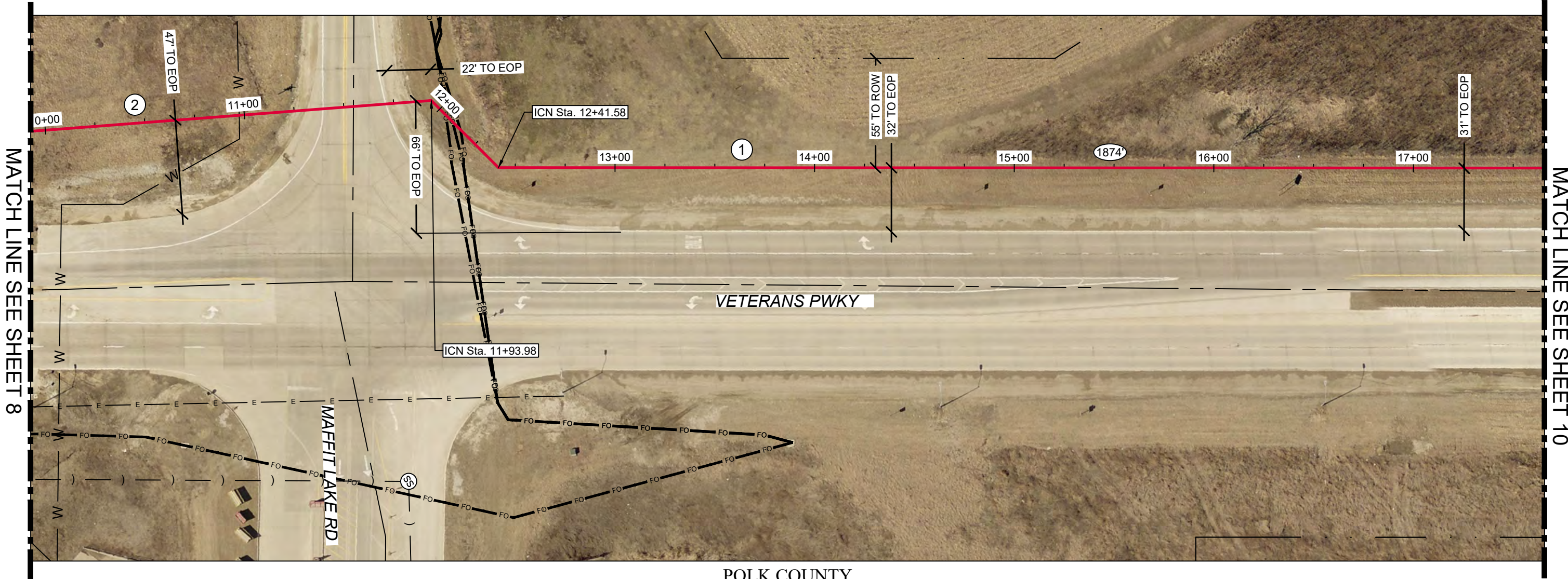


WEST DES MOINES IOWA NATIONAL GUARD
FIBER INSTALLATION

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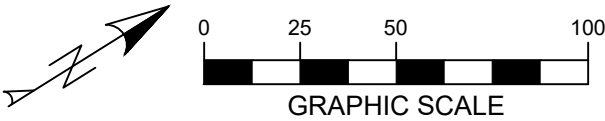
hbk **ICN**

IOWA COMMUNICATIONS NETWORK
400 EAST 14TH STREET
GRIMES STATE OFFICE BUILDING
DES MOINES, IOWA 50319
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- 1 PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT.
42" MINIMUM BELOW GRADE.
- 2 OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- 3 ALL UTILITIES THAT RESPONDED TO DESIGN LOCATE REQUEST ARE SHOWN.
- 4 CONTRACTOR TO STAKE ROW FROM HH2 TO HH3 (ICN STA. 3+47 TO 22+21)

POLK COUNTY
BLOOMFIELD TOWNSHIP
T34-N R25-W



ICN STA. 12+42



ICN STA. 13+75



ICN STA. 14+75



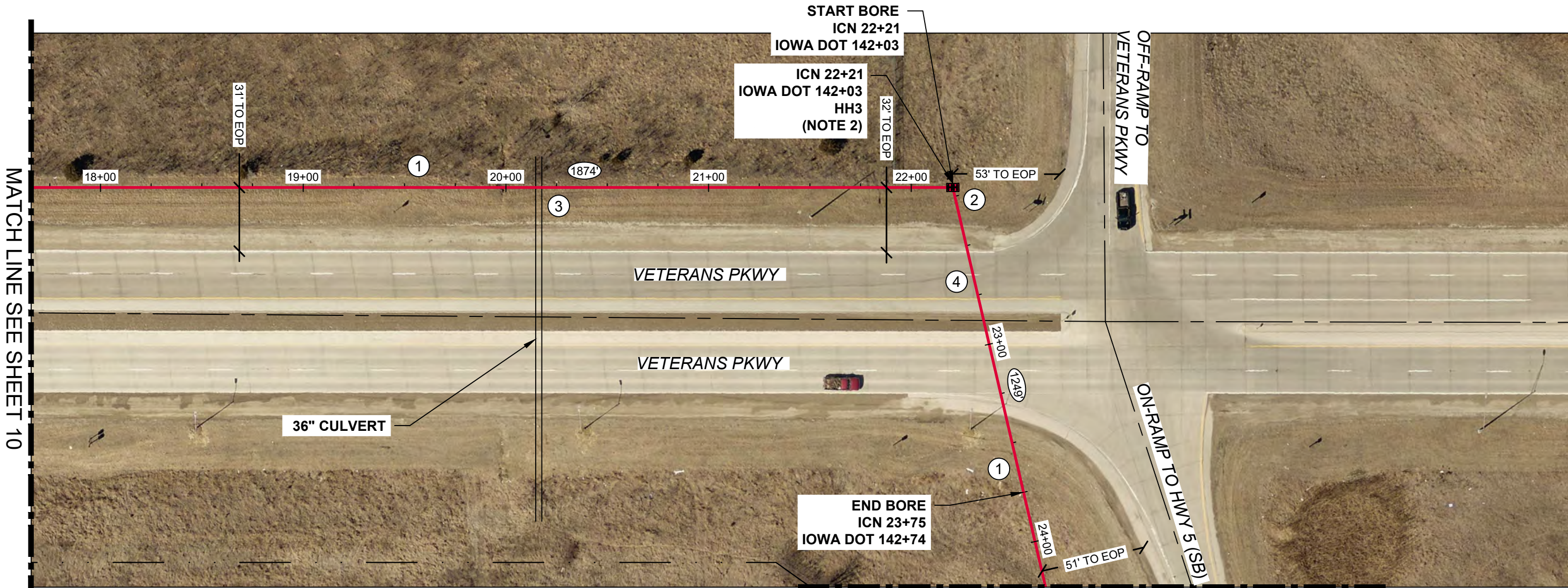
LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH2	3+47	HH3	22+21	1874
TOTAL				1874

* LENGTH DOES NOT INCLUDE SLACKCOILS

WEST DES MOINES IOWA NATIONAL GUARD
FIBER INSTALLATION

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4		

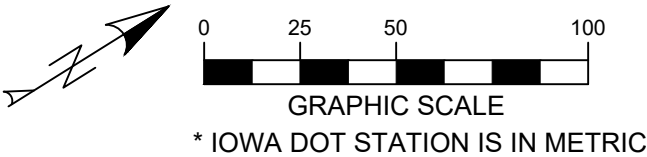
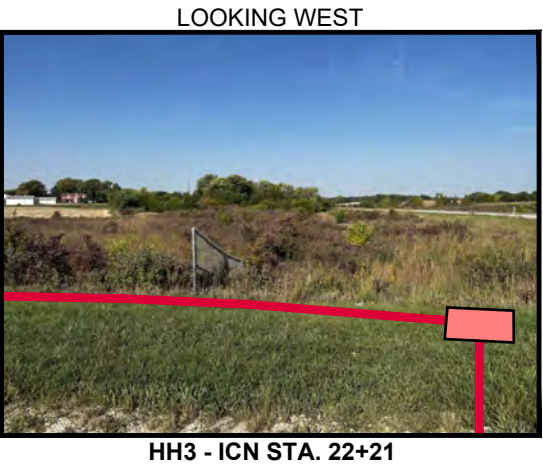
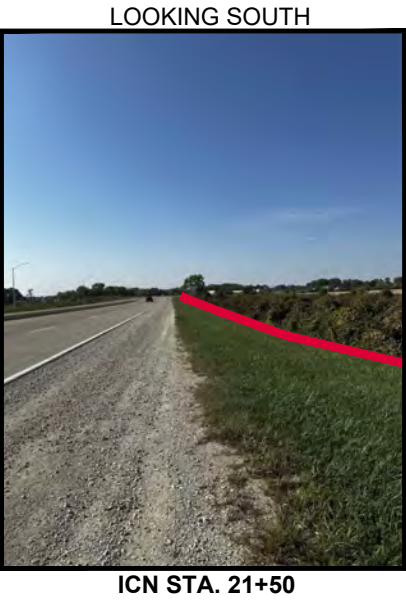
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POLK COUNTY
BLOOMFIELD TOWNSHIP
T78-N R25-W

MATCH LINE SEE SHEET 11

- 1 PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT. 42" MINIMUM BELOW GRADE. 48" MINIMUM BELOW ROADWAYS. STATIONING OF BORE AREAS ARE ESTIMATED. CONTRACTOR TO VERIFY EXACT BORE PIT LOCATIONS IN FIELD DUE TO REQUIRED DEPTH NEEDED FOR CROSSINGS AT UTILITIES, CULVERTS OR ROADWAYS.
- 2 ICN STA. 22+21 / IOWA DOT 142+03 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH3. LINK 1728B 48 F/A 150' SLACK COIL FOR MID-SHEATH SPLICE. TRI-VIEW LOCATE POINT PER TYPICAL. 2-#12 TRACERS 50' EACH.
- 3 BORE MIN. DEPTH OF 3' BELOW CULVERT (ICN STA. 20+11 TO ICN STA. 20+21). CONTRACTOR TO FIELD VERIFY CULVERT DEPTH.
- 4 OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.



LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH2	3+47	HH3	22+21	1874
HH3	22+21	HH4	34+70	1249
TOTAL				3123

* LENGTH DOES NOT INCLUDE SLACKCOILS



WEST DES MOINES IOWA NATIONAL GUARD
FIBER INSTALLATION

1 FOR 60% REVIEW 11/13/2023

2 FOR PERMIT PLANS 12/06/2023

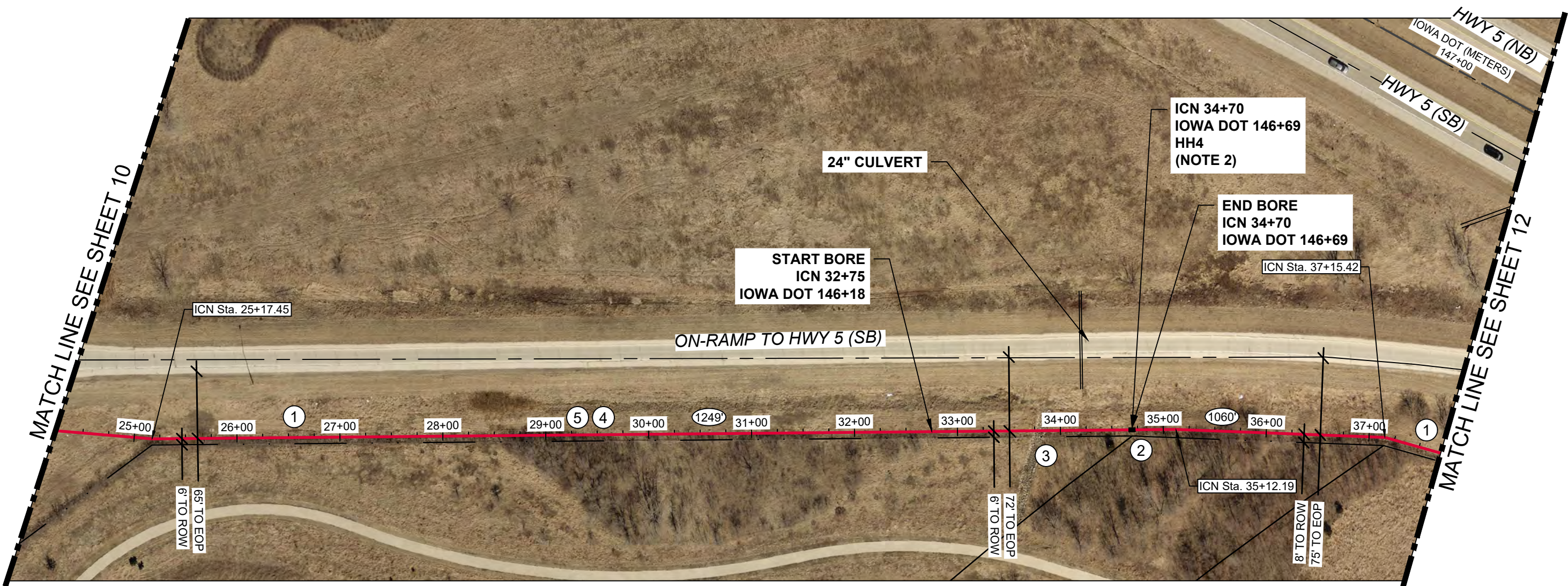
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POLK COUNTY
BLOOMFIELD TOWNSHIP
T78-N R25-W

LOOKING SOUTHWEST



ICN STA. 33+50

- ① PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT. 42" MINIMUM BELOW GRADE. STATIONING OF BORE AREAS ARE ESTIMATED. CONTRACTOR TO VERIFY EXACT BORE PIT LOCATIONS IN FIELD DUE TO REQUIRED DEPTH NEEDED FOR CROSSINGS AT UTILITIES, CULVERTS OR ROADWAYS.
- ② ICN STA. 34+70/ IOWA DOT 146+69 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH4. LINK 1728B 100' SLACK COIL 48 F/A. INSTALL ICN WARNING MARKER.
- ③ BORE MIN. DEPTH OF 10' BELOW FLOW LINE FOR 50' ON EITHER SIDE OF DRAINAGE AREA (ICN STA. 33+50). CONTRACTOR TO FIELD VERIFY FLOW LINE DEPTH.
- ④ OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- ⑤ EXISTING TELECOM BELIEVED TO BE PARALLELING PROPOSED RUNNING LINE BUT DID NOT RESPOND TO DESIGN LOCATE REQUEST. ADJUST RUNNING LINE TO BE 2' OFF EXISTING TELECOM AS NEEDED.



GRAPHIC SCALE
* IOWA DOT STATION IS IN METRIC

LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH3	22+21	HH4	34+70	1249
HH4	34+70	HH5	45+30	1060
TOTAL				2309

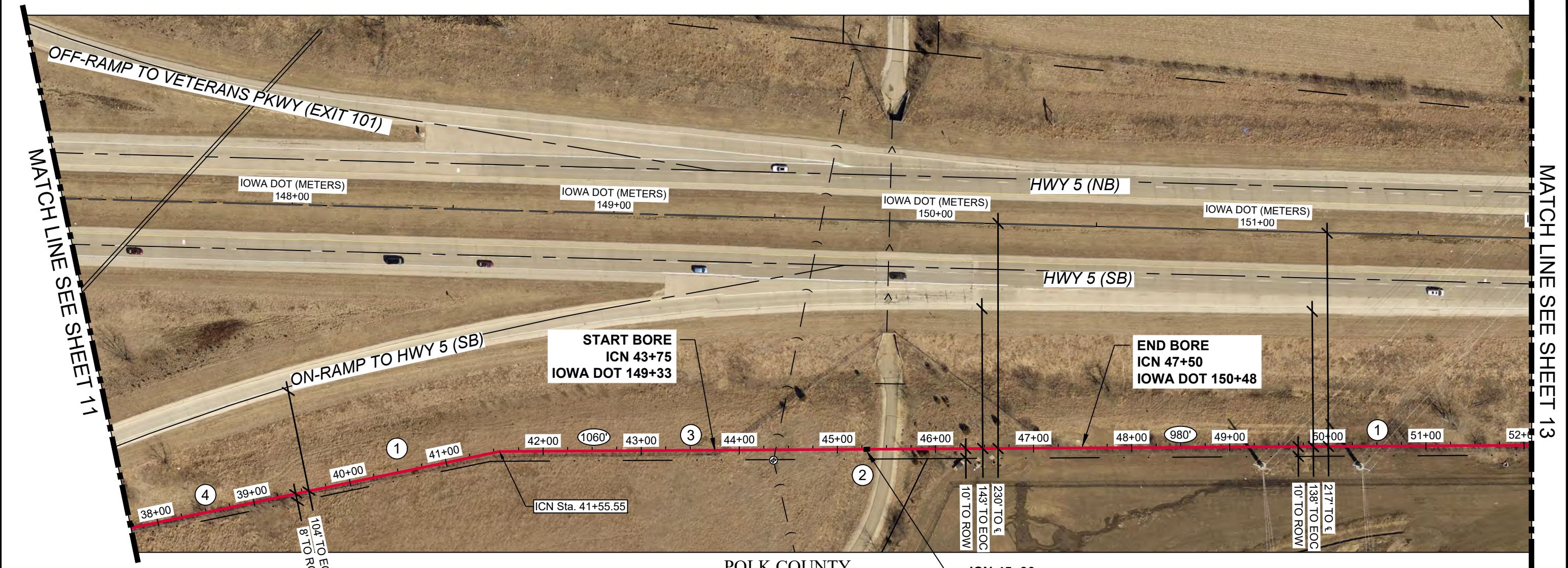
* LENGTH DOES NOT INCLUDE SLACKCOILS



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POLK COUNTY
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T34-N R25-W

- 1 PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT. 42" MINIMUM BELOW GRADE. STATIONING OF BORE AREAS ARE ESTIMATED. CONTRACTOR TO VERIFY EXACT BORE PIT LOCATIONS IN FIELD DUE TO REQUIRED DEPTH NEEDED FOR CROSSINGS AT UTILITIES, CULVERTS OR ROADWAYS.
- 2 ICN STA. 45+30 / IOWA DOT 149+81 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH5. LINK 1728B 48F/A 100' SLACK COIL. INSTALL ICN WARNING MARKER.
- 3 OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- 4 EXISTING TELECOM BELIEVED TO BE PARALLELING PROPOSED RUNNING LINE BUT DID NOT RESPOND TO DESIGN LOCATE REQUEST. ADJUST RUNNING LINE TO BE 2' OFF EXISTING TELECOM AS NEEDED.



ICN STA. 44+50



ICN STA. 46+75

ICN 45+30
IOWA DOT 149+81
HH5
(NOTE 2)



GRAPHIC SCALE
* IOWA DOT STATION IS IN METRIC

LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH4	34+70	HH5	45+30	1060
HH5	45+30	HH6	55+08	978
TOTAL				2038

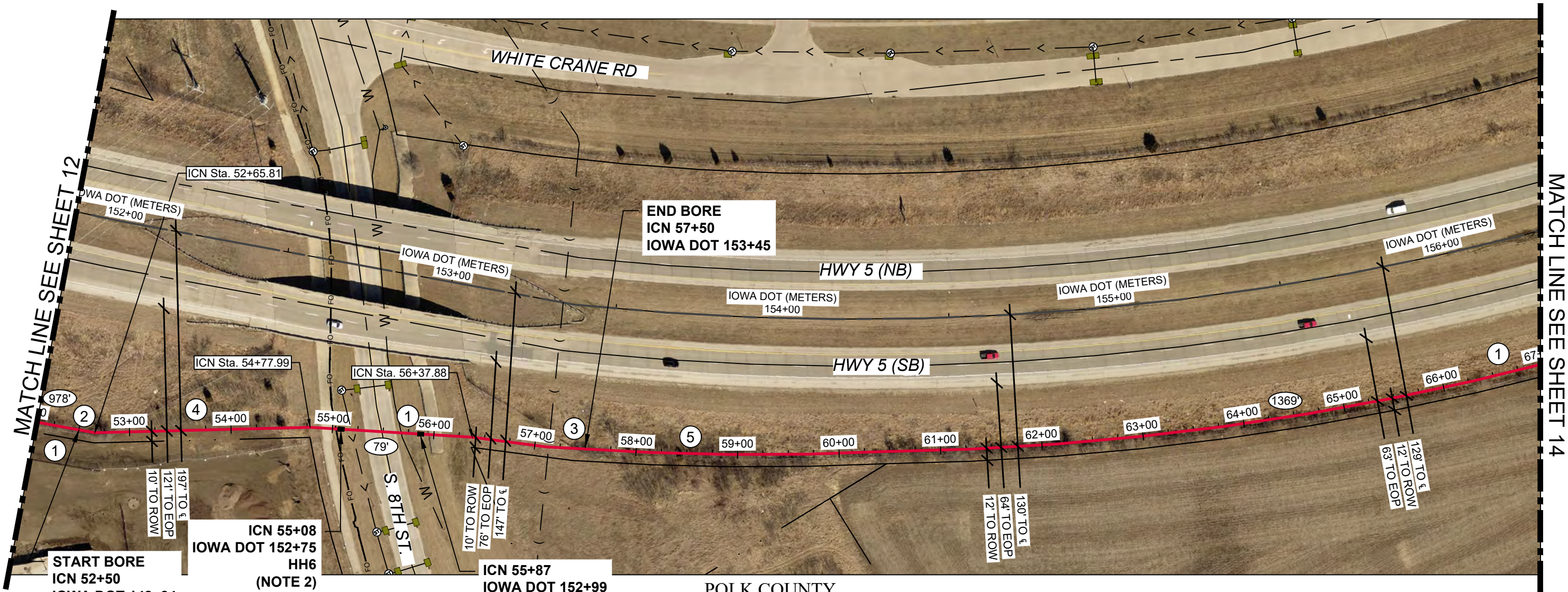
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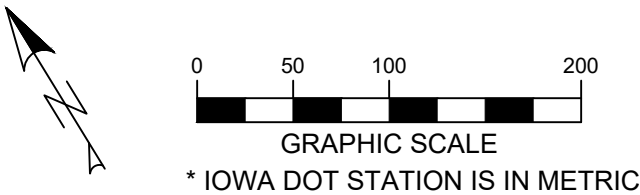
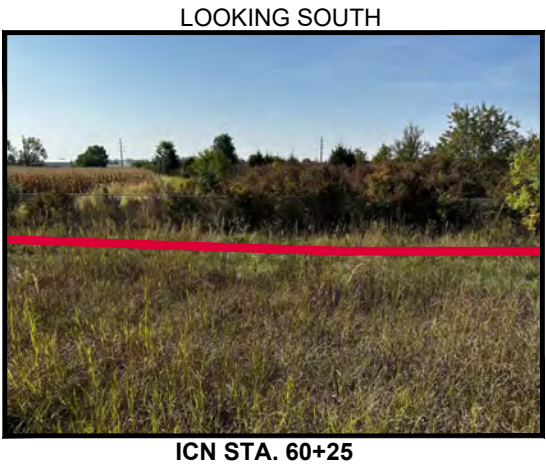
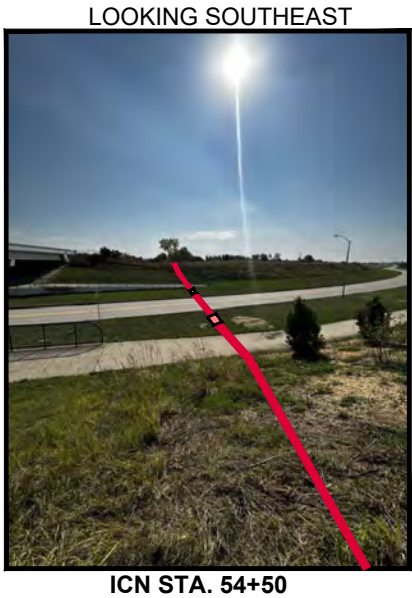
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FIBER INSTALLATION

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- 1 PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT. 42" MINIMUM BELOW GRADE. 48" MINIMUM BELOW ROADWAYS. CONTRACTOR TO VERIFY EXACT BORE PIT LOCATIONS IN FIELD DUE TO REQUIRED DEPTH NEEDED FOR CROSSINGS AT UTILITIES, CULVERTS, OR ROADWAYS.
- 2 ICN STA. 55+08 / IOWA DOT 152+75 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH6. LINK 1728B 48 F/A 100' SLACK COIL. INSTALL WARNING MARKER
- 3 ICN STA. 55+87 / IOWA DOT 152+99 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH7. LINK 1728B 48 F/A 100' SLACK COIL. INSTALL WARNING MARKER
- 4 OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- 5 EXISTING TELECOM BELIEVED TO BE PARALLELING PROPOSED RUNNING LINE BUT DID NOT RESPOND TO DESIGN LOCATE REQUEST. ADJUST RUNNING LINE TO BE 2' OFF EXISTING TELECOM AS NEEDED.

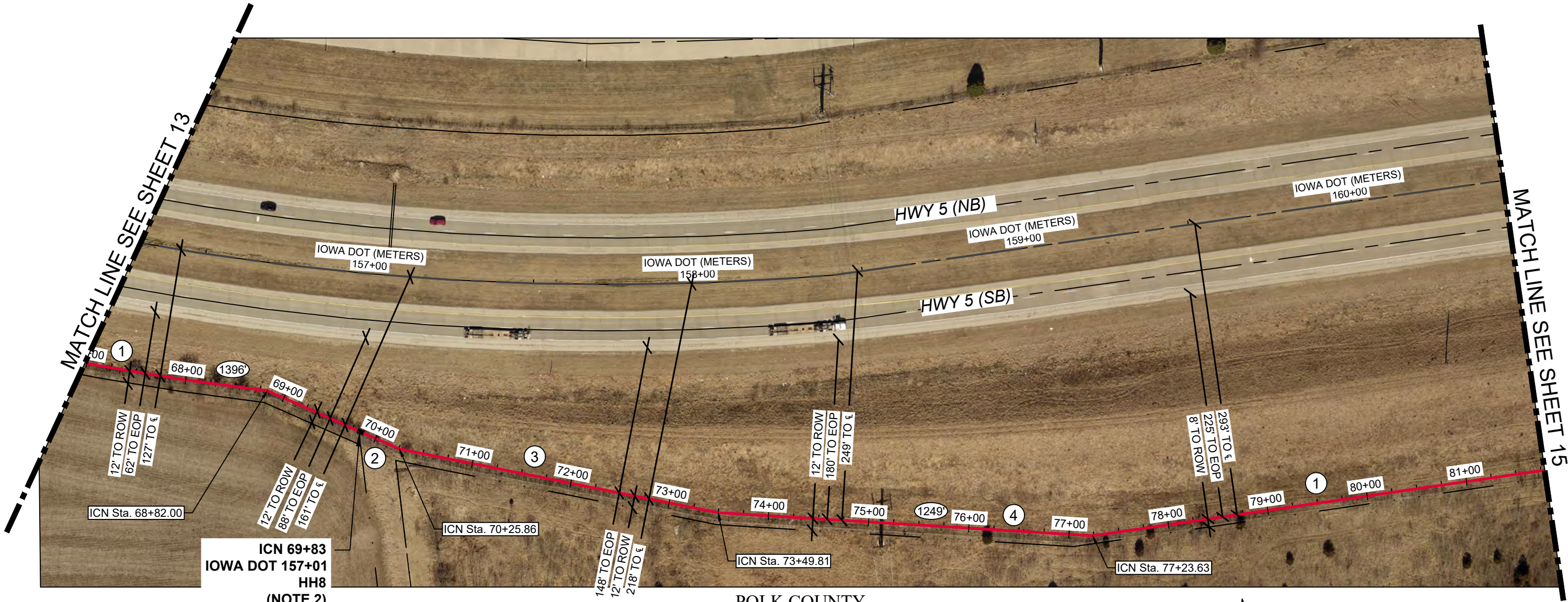


LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH5	45+30	HH6	55+08	978
HH6	55+08	HH7	55+87	79
HH7	55+87	HH8	69+83	1396
TOTAL				2453

* LENGTH DOES NOT INCLUDE SLACKCOILS



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POLK COUNTY
BLOOMFIELD TOWNSHIP
T34-N R25-W

LOOKING SOUTH



HH8 - ICN STA. 69+83

- ① PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT.
42" MINIMUM BELOW GRADE.
- ② ICN STA. 69+83 / IOWA DOT 157+01 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH8. LINK 1728B 48/F/A 100' SLACK COIL. INSTALL ICN WARNING MARKER.
- ③ OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- ④ EXISTING TELECOM BELIEVED TO BE PARALLELING PROPOSED RUNNING LINE BUT DID NOT RESPOND TO DESIGN LOCATE REQUEST. ADJUST RUNNING LINE TO BE 2' OFF EXISTING TELECOM AS NEEDED.



GRAPHIC SCALE

* IOWA DOT STATION IS IN METRIC

LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH7	55+87	HH8	69+83	1396
HH8	69+83	HH9	82+62	1279
TOTAL				2675

* LENGTH DOES NOT INCLUDE SLACKCOILS

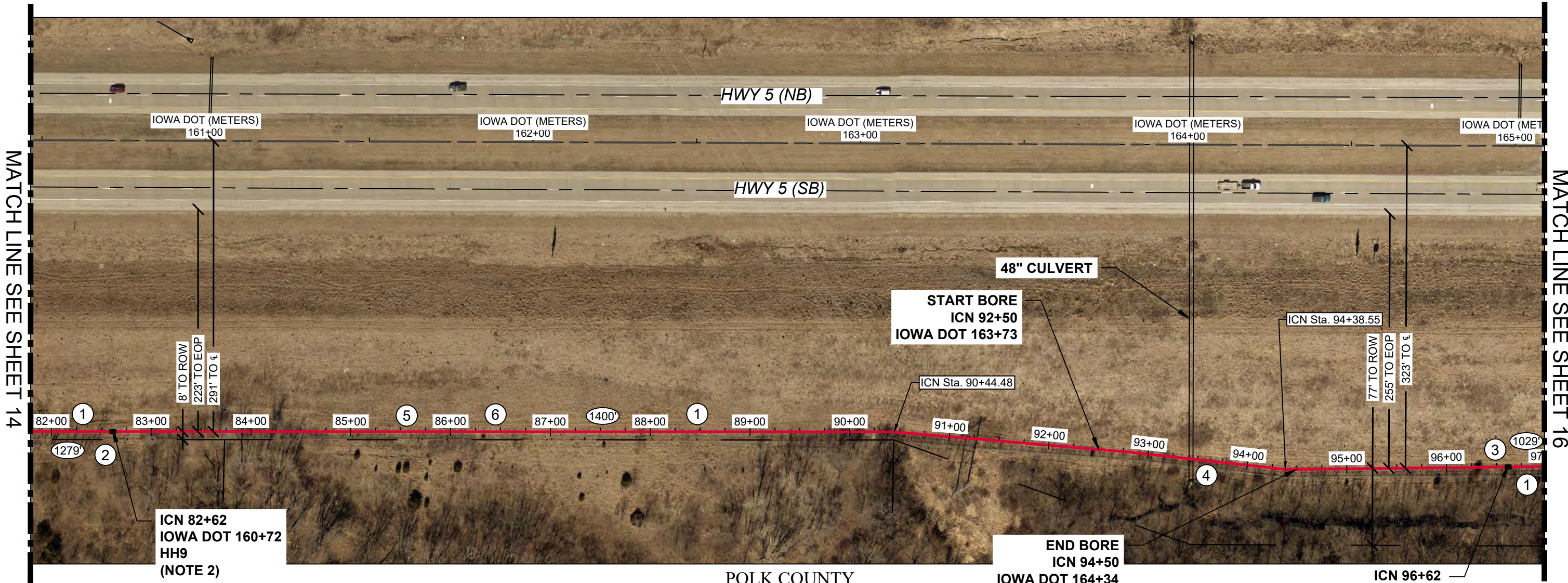


WEST DES MOINES IOWA NATIONAL GUARD
FIBER INSTALLATION



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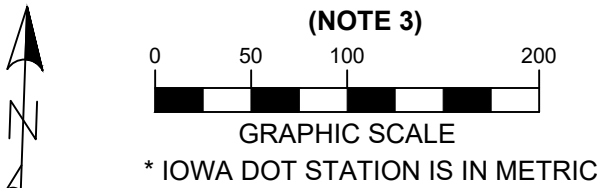
- 1 PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT. 42" MINIMUM BELOW GRADE.
- 2 ICN STA. 82+62 / IOWA DOT STA. 160+72 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH9. LINK 1728B 100' 48 F/A SLACK COIL. INSTALL WARNING MARKER
- 3 ICN STA. 96+62 / IOWA DOT STA. 164+98 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH10. LINK 1728B 48 F/A 100' SLACK COIL. INTSALL WARNING MARKER
- 4 BORE MIN. DEPTH OF 10' BELOW FLOW LINE FOR 50' ON EITHER SIDE. (ICN STA. 93+43).
- 5 OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- 6 EXISTING TELECOM BELIEVED TO BE PARALLELING PROPOSED RUNNING LINE BUT DID NOT RESPOND TO DESIGN LOCATE REQUEST. ADJUST RUNNING LINE TO BE 2' OFF EXISTING TELECOM AS NEEDED.



HH9 - ICN STA. 82+62



HH10 - ICN STA. 96+62



LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH8	69+83	HH9	82+62	1279
HH9	82+62	HH10	96+62	1400
HH10	96+62	HH11	106+91	1029
TOTAL				3708

* LENGTH DOES NOT INCLUDE SLACKCOILS



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FIBER INSTALLATION

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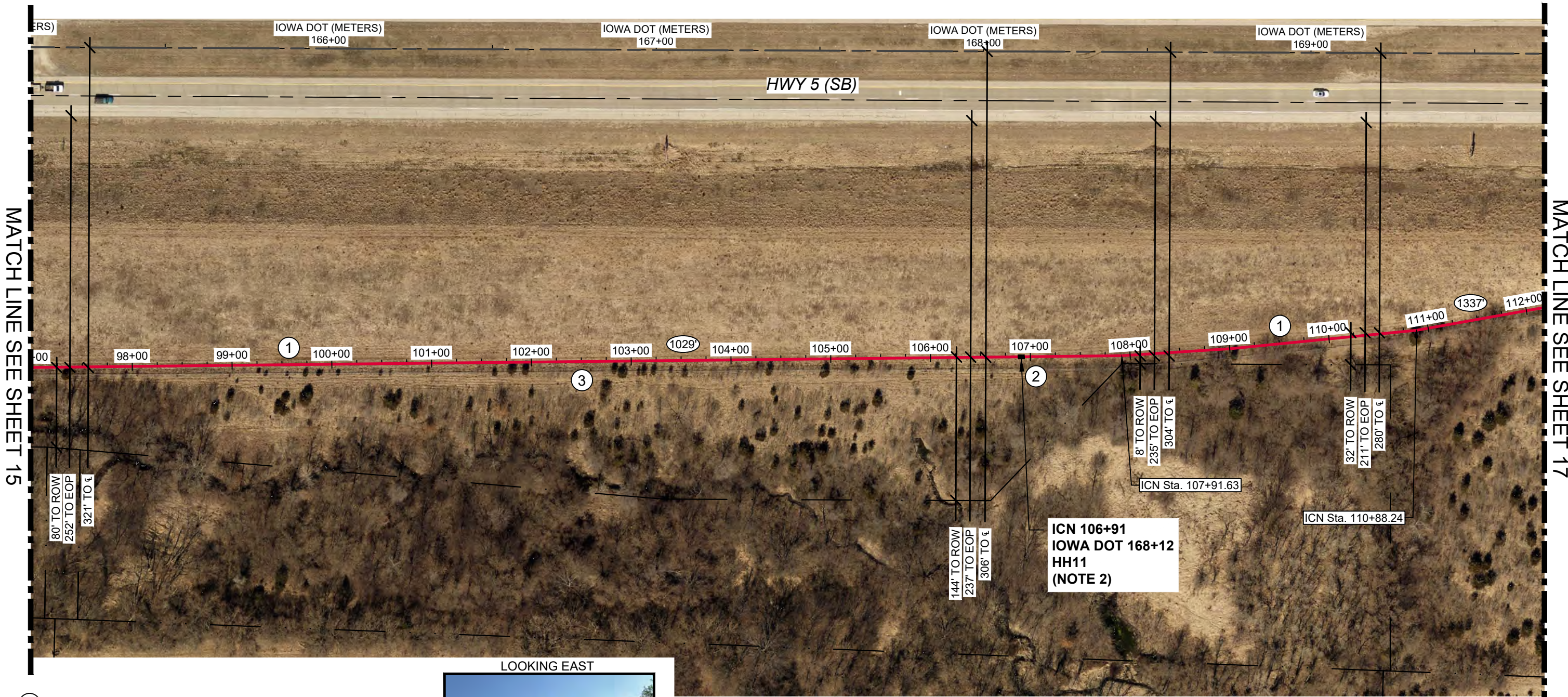
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LOOKING EAST

POLK COUNTY
BLOOMFIELD TOWNSHIP
T78-N R25-W

- 1 PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT. 42" MINIMUM BELOW GRADE.
- 2 ICN STA. 106+91 / IOWA DOT 168+12 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH11. LINK 1728B 100' SLACK COIL 48 F/A. INSTALL ICN WARNING MARKER.
- 3 OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- 4 EXISTING TELECOM BELIEVED TO BE PARALLELING PROPOSED RUNNING LINE BUT DID NOT RESPOND TO DESIGN LOCATE REQUEST. ADJUST RUNNING LINE TO BE 2' OFF EXISTING TELECOM AS NEEDED.

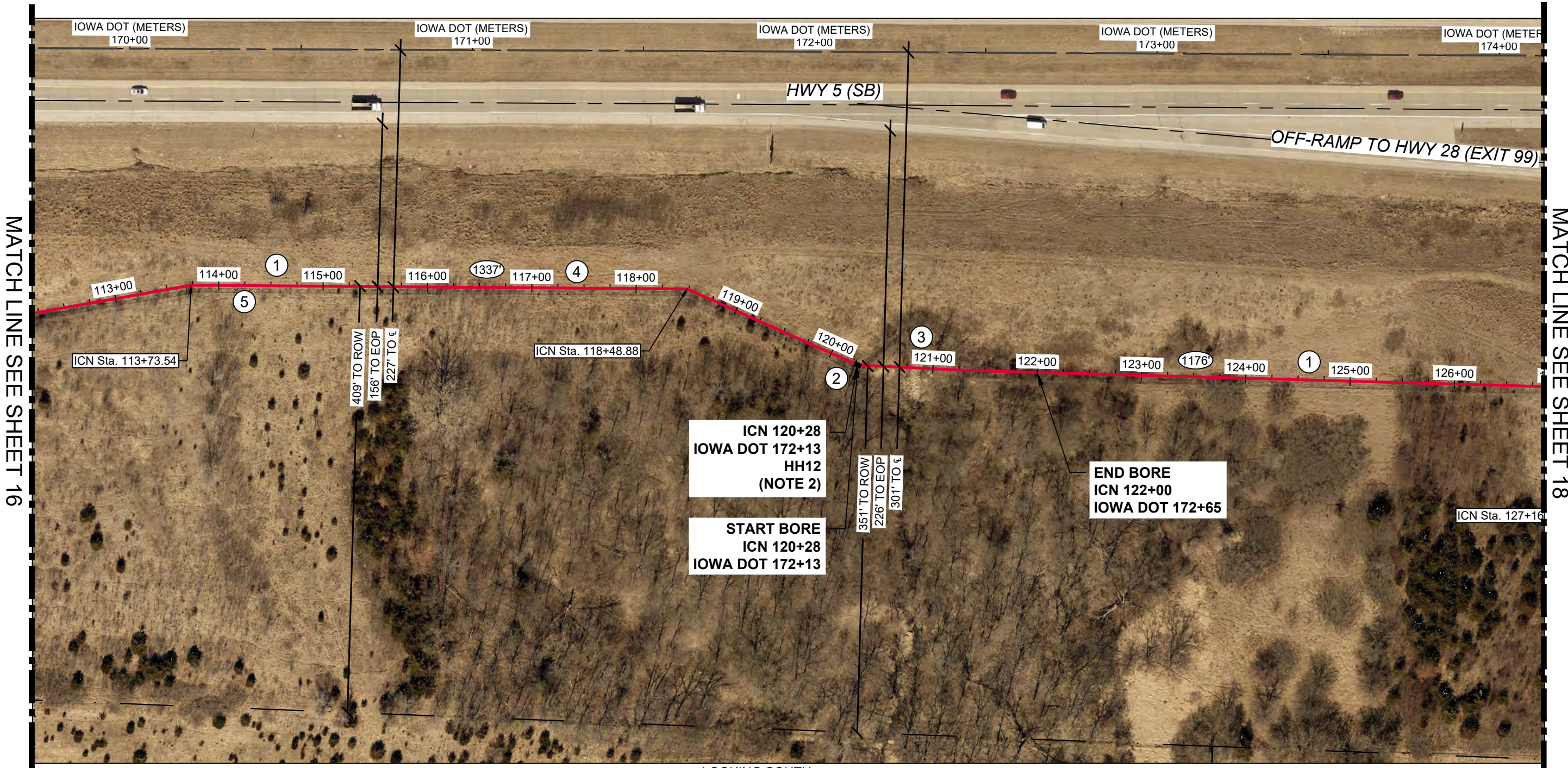


HH11 - ICN STA. 106+91

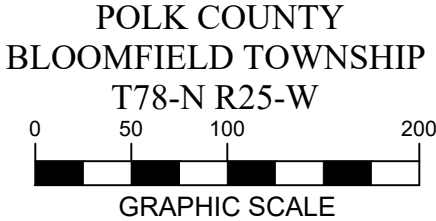
LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH10	96+62	HH11	106+91	1029
HH11	106+91	HH12	120+28	1337
TOTAL				2366

* LENGTH DOES NOT INCLUDE SLACKCOILS

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- ① PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT. 42" MINIMUM BELOW GRADE. STATIONING OF BORE AREAS ARE ESTIMATED. CONTRACTOR TO VERIFY EXACT BORE PIT LOCATIONS IN FIELD DUE TO REQUIRED DEPTH NEEDED FOR CROSSINGS AT UTILITIES, CULVERTS, OR ROADWAYS.
- ② ICN STA. 120+28 / IOWA DOT STA. 172+13 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH12. LINK 1728B 100' SLACK COIL 48 F/A. INSTALL ICN WARNING MARKER.
- ③ BORE MIN. DEPTH OF 10' BELOW FLOW LINE FOR 50' ON EITHER SIDE (ICN STA. 121+90). CONTRACTOR TO FIELD VERIFY FLOW LINE DEPTH.
- ④ OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- ⑤ EXISTING TELECOM BELIEVED TO BE PARALLELING PROPOSED RUNNING LINE BUT DID NOT RESPOND TO DESIGN LOCATE REQUEST. ADJUST RUNNING LINE TO BE 2' OFF EXISTING TELECOM AS NEEDED.



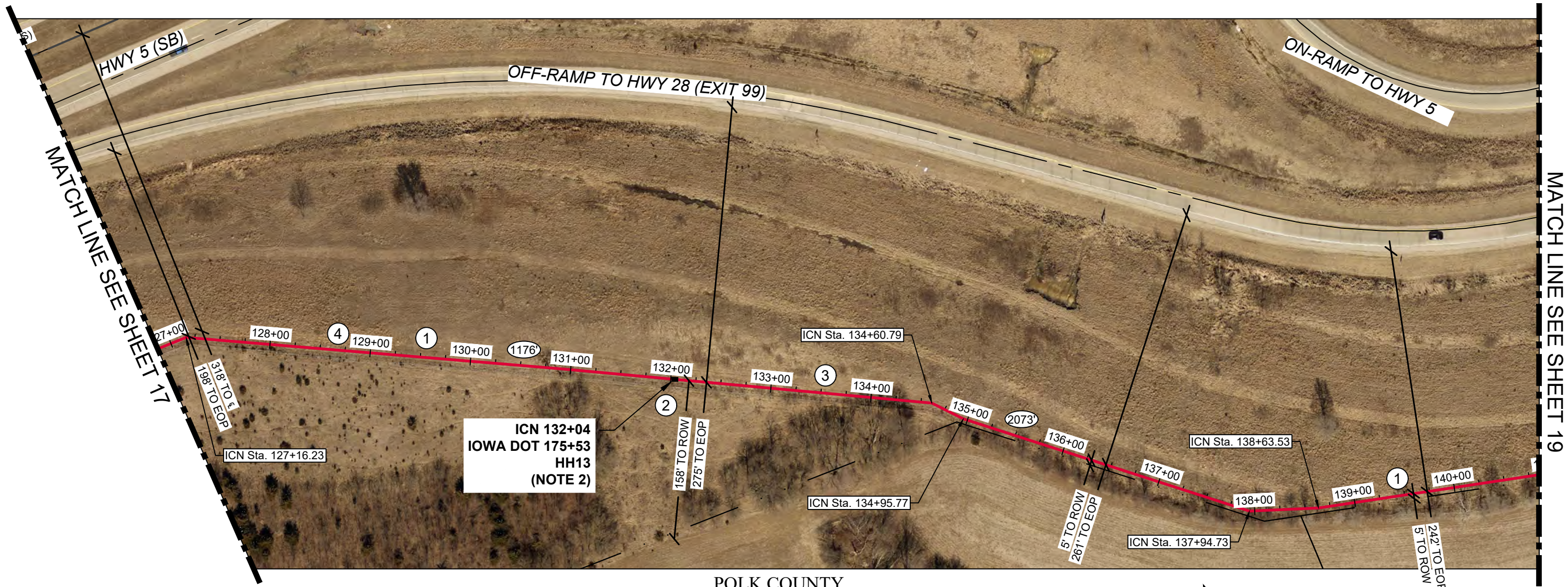
* IOWA DOT STATION IS IN METRIC



LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH11	106+91	HH12	120+28	1337
HH12	120+28	HH13	132+04	1176
TOTAL				2513

* LENGTH DOES NOT INCLUDE SLACKCOILS

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POLK COUNTY
BLOOMFIELD TOWNSHIP
T78-N R25-W

LOOKING SOUTHEAST



HH13 - ICN STA. 132+04

- 1 PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT. 42" MINIMUM BELOW GRADE.
- 2 ICN STA. 132+04 / IOWA DOT 175+53 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH13. LINK 1728B 100' 48 F/A SLACK COIL. INSTALL WARNING MARKER
- 3 OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- 4 EXISTING TELECOM BELIEVED TO BE PARALLELING PROPOSED RUNNING LINE BUT DID NOT RESPOND TO DESIGN LOCATE REQUEST. ADJUST RUNNING LINE TO BE 2' OFF EXISTING TELECOM AS NEEDED.



GRAPHIC SCALE
* IOWA DOT STATION IS IN METRIC

LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH12	120+28	HH13	132+04	1176
HH13	132+04	HH14	152+77	2073
TOTAL				3249

* LENGTH DOES NOT INCLUDE SLACKCOILS

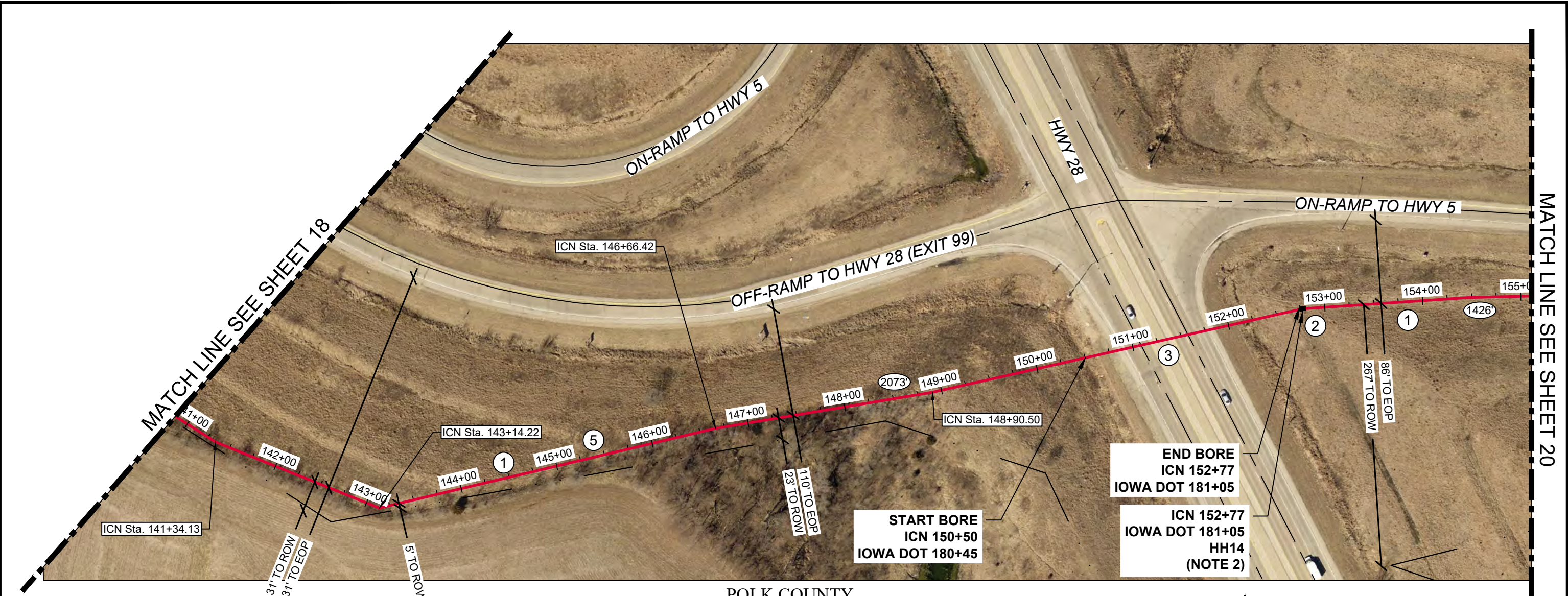


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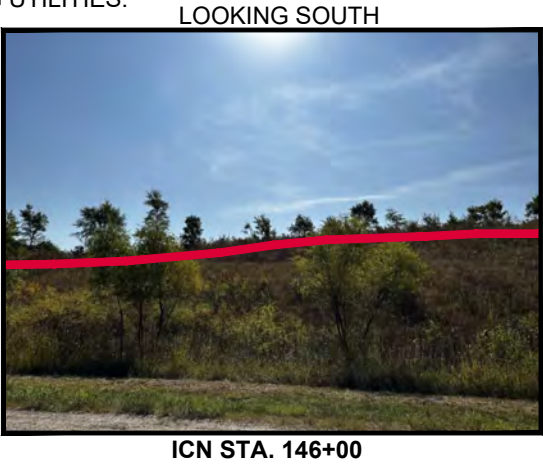
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- ① PULL NEW LINK 1728B 48 F/A THROUGH NEW 1 1/4" HDPE CONDUIT. 42" MINIMUM BELOW GRADE. 48" MINIMUM BELOW GRADE UNDER ROADWAYS. STATIONING OF BORE PITS ARE ESTIMATED. CONTRACTOR TO VERIFY EXACT BORE PIT LOCATIONS IN FIELD DUE TO REQUIRED DEPTH NEEDED FOR CROSSINGS AS UTILITIES, CULVERTS, OR ROADWAYS.
- ② ICN STA. 152+77 / IOWA DOT 181+05 INSTALL PROPOSED 24"x36"x36" ICN HANDHOLE - HH14. LINK 1728B 150' 48 F/A SLACK COIL. INSTALL WARNING MARKER
- ③ OTHER UTILITY PROVIDERS IN AREA. STAY 36" CLEAR FROM ALL EXISTING UTILITIES.
- ④ CONTRACTOR TO STAKE RUNNING LINE FROM ICN. STA. 149+00 TO 167+03.
- ⑤ EXISTING TELECOM BELIEVED TO BE PARALLELING PROPOSED RUNNING LINE BUT DID NOT RESPOND TO DESIGN LOCATE REQUEST. ADJUST RUNNING LINE TO BE 2' OFF EXISTING TELECOM AS NEEDED.

POLK COUNTY
BLOOMFIELD TOWNSHIP
T78-N R25-W



LOOKING SOUTH

ICN STA. 146+00



LOOKING SOUTHWEST

ICN STA. 152+25



LOOKING SOUTHEAST

HH14 - ICN STA. 152+77



LOOKING EAST

ICN STA. 153+00



GRAPHIC SCALE
* IOWA DOT STATION IS IN METRIC

LISTING OF HANDHOLES				
HANDHOLE	STATION	HANDHOLE	STATION	LENGTH FT
HH13	132+04	HH14	152+77	2073
HH14	152+77	HH15 - EX	167+03	1426
TOTAL				3499

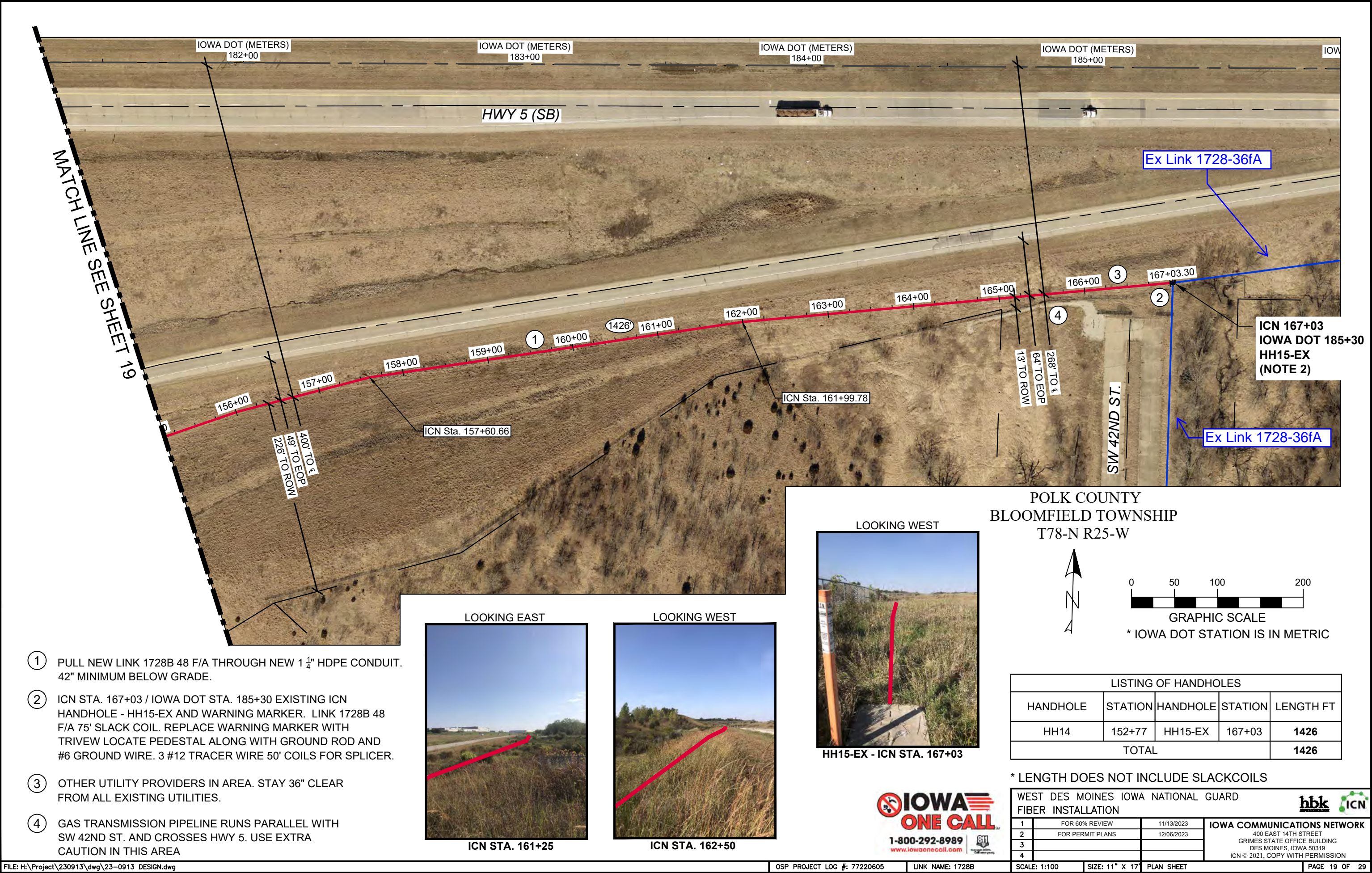
* LENGTH DOES NOT INCLUDE SLACKCOILS



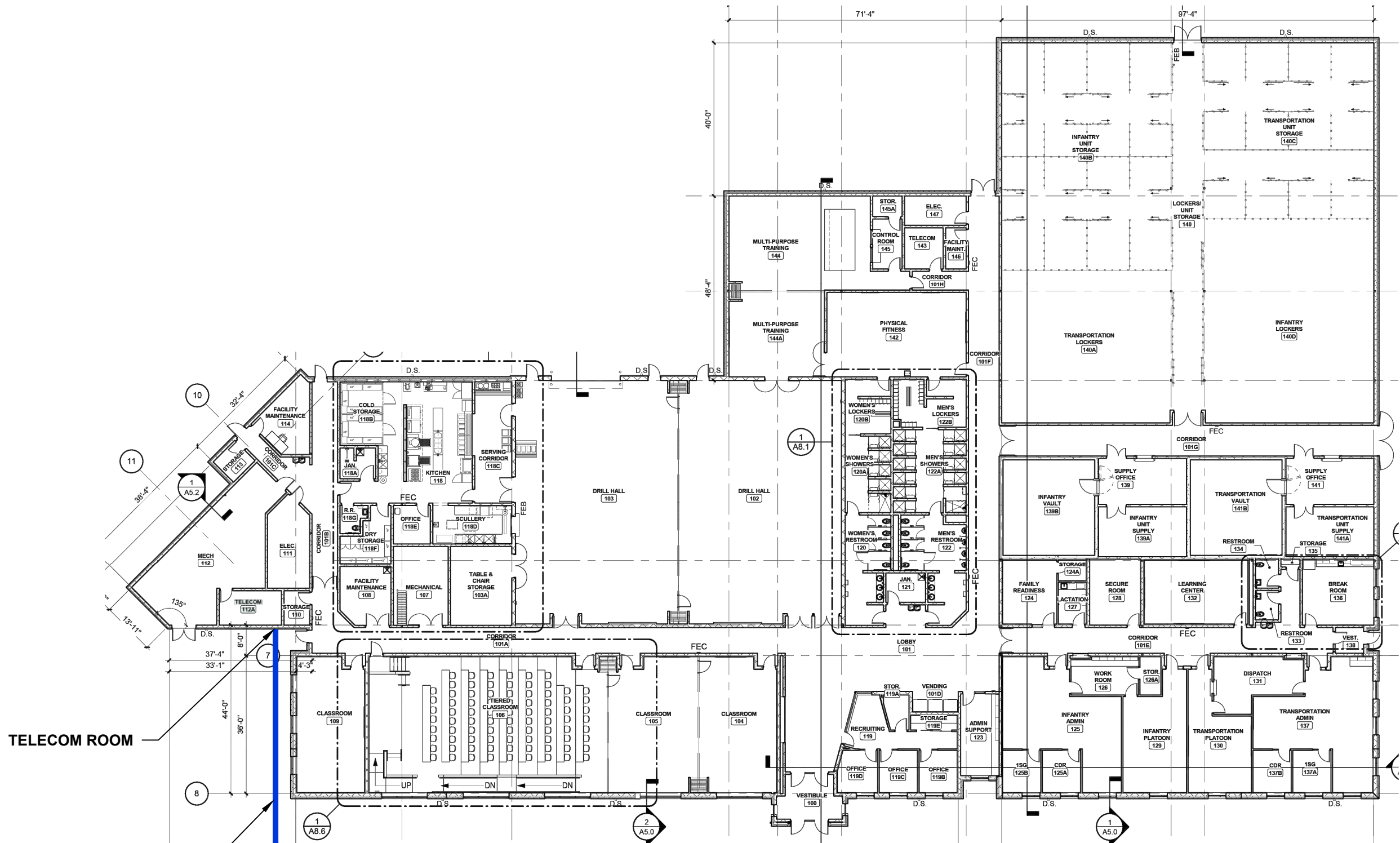
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INTERIOR LAYOUT



TELECOM ROOM

SEE SHEET 7 FOR
ROUTING



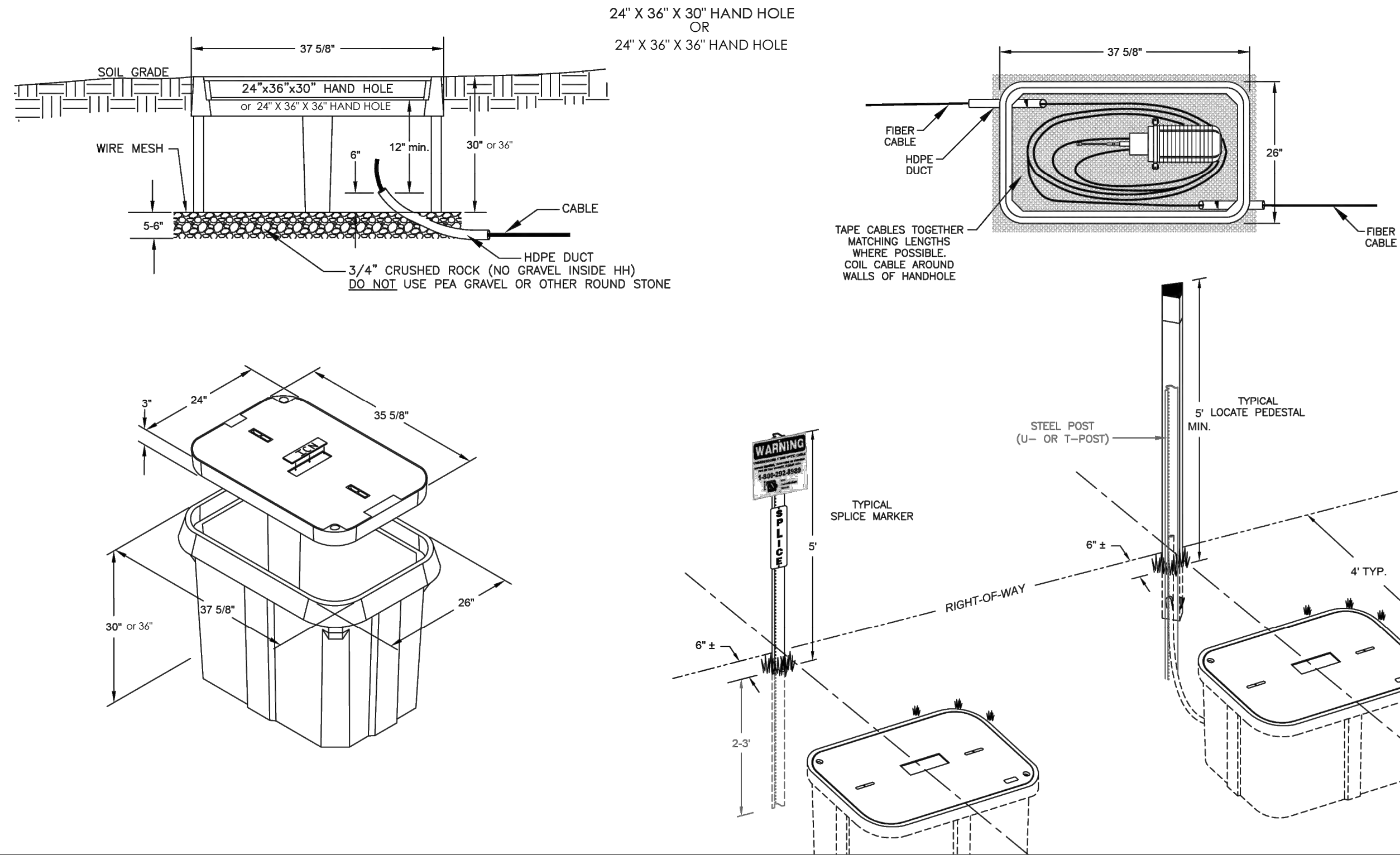
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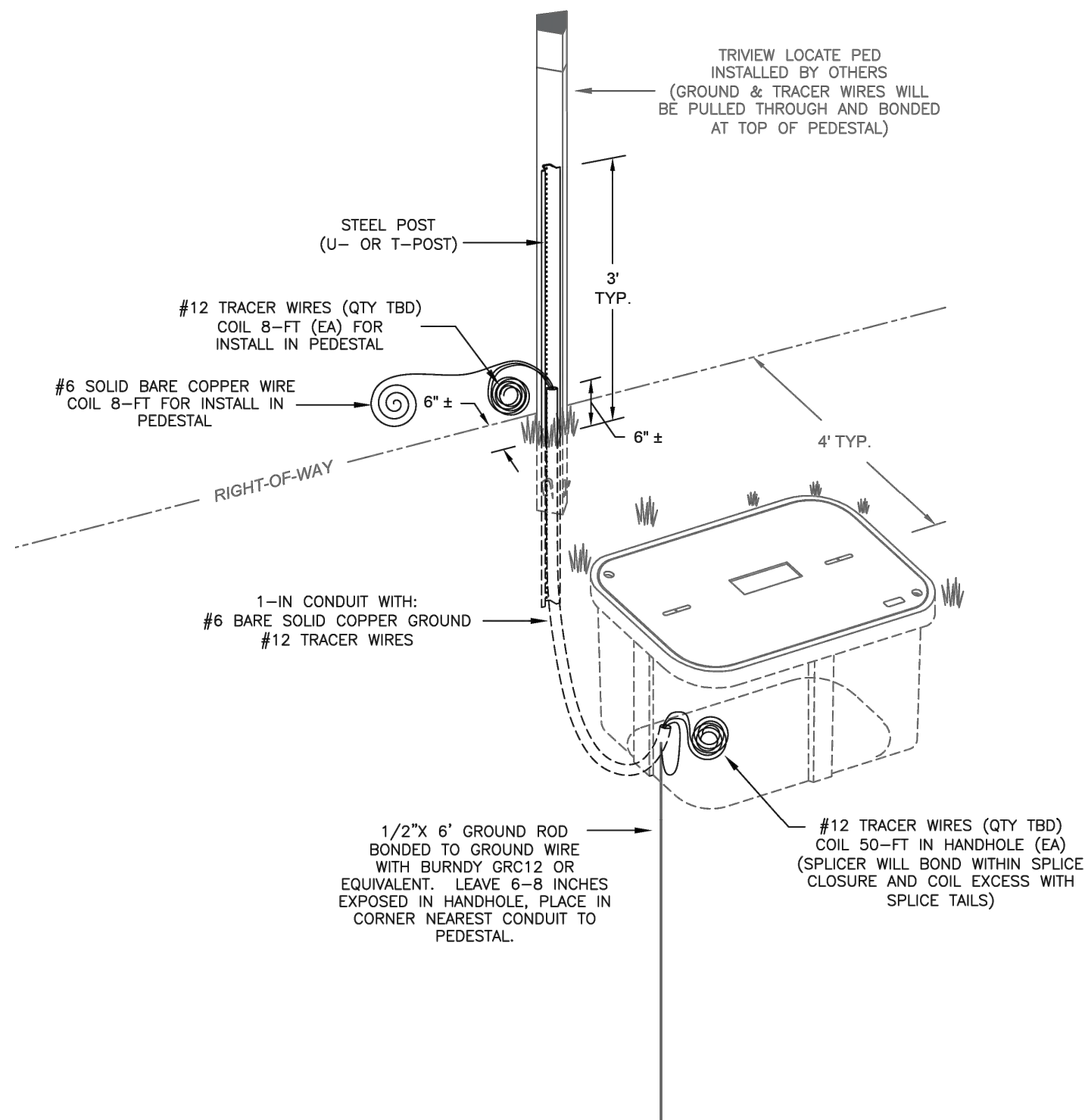
HANDHOLE PLACEMENT TYPICAL



CONSTRUCTION DOCUMENT



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CONTRACTOR TO PROVIDE AND PLACE THE FOLLOWING MATERIALS IN PREPARATION FOR THE INSTALLATION OF A TRIVIEW LOCATE PEDESTAL (INSTALLED BY OTHERS):

STEEL POST

"U" OR "T" POST
LEAVE 3 FEET EXPOSED
BURY A MINIMUM OF 1 FEET
PLACE NEAR OR AT ROW UNLESS OTHERWISE DIRECTED

GROUND ROD

1/2-IN X 6-FT SOLID COPPER GROUND ROD
PLACE IN CORNER OF HANDHOLE NEAREST CONDUIT TO PEDESTAL
LEAVE 6-IN ± EXPOSED

GROUND WIRE

#6 BARE SOLID COPPER WIRE
BOND TO GROUND ROD WITH BURNDY GRC12 OR EQUIVALENT
ROUTE THROUGH CONDUIT TOWARDS PEDESTAL
COIL 8-FT AT CONDUIT EXIT TO BE BONDED TO PEDESTAL BY OTHERS

CONDUIT

1 INCH (MUST BE OF SUFFICIENTLY SMALL O.D. TO FIT INSIDE PEDESTAL)
CONDUIT MUST BE CONTINUOUS AND NON-CORROSIVE (HDPE OR PVC, E.G.)
ROUTE FROM BASE OF HANDHOLE TO BASE OF PEDESTAL
LEAVE 6-IN OF CONDUIT EXPOSED ABOVE GRADE (TO BE PLACED WITHIN PEDESTAL)



TRACER WIRE

#12 TRACER WIRES
TYPICALLY 2 OR 3 WIRES ARE REQUIRED*
COIL 50-FT (EA) IN BASE OF HANDHOLE TO BE BONDED IN SPLICE CLOSURE BY OTHERS
COIL 8-FT AT CONDUIT EXIT TO BE BONDED TO PEDESTAL BY OTHERS
*SEPARATE #12 TRACER WIRES ARE REQUIRED FOR EACH DIRECTION AND/OR CABLE.
QUANTITY OF TRACER WIRES SHALL BE PROJECT SPECIFIC AND DEFINED BY THE ICN
OSP ENGINEER WITHIN THE STATEMENT OF WORK, PLEASE VERIFY. AS A GENERAL
RULE, 150-FT OF #12 TRACER WIRE SHOULD BE SUFFICIENT FOR ANY PROJECT.

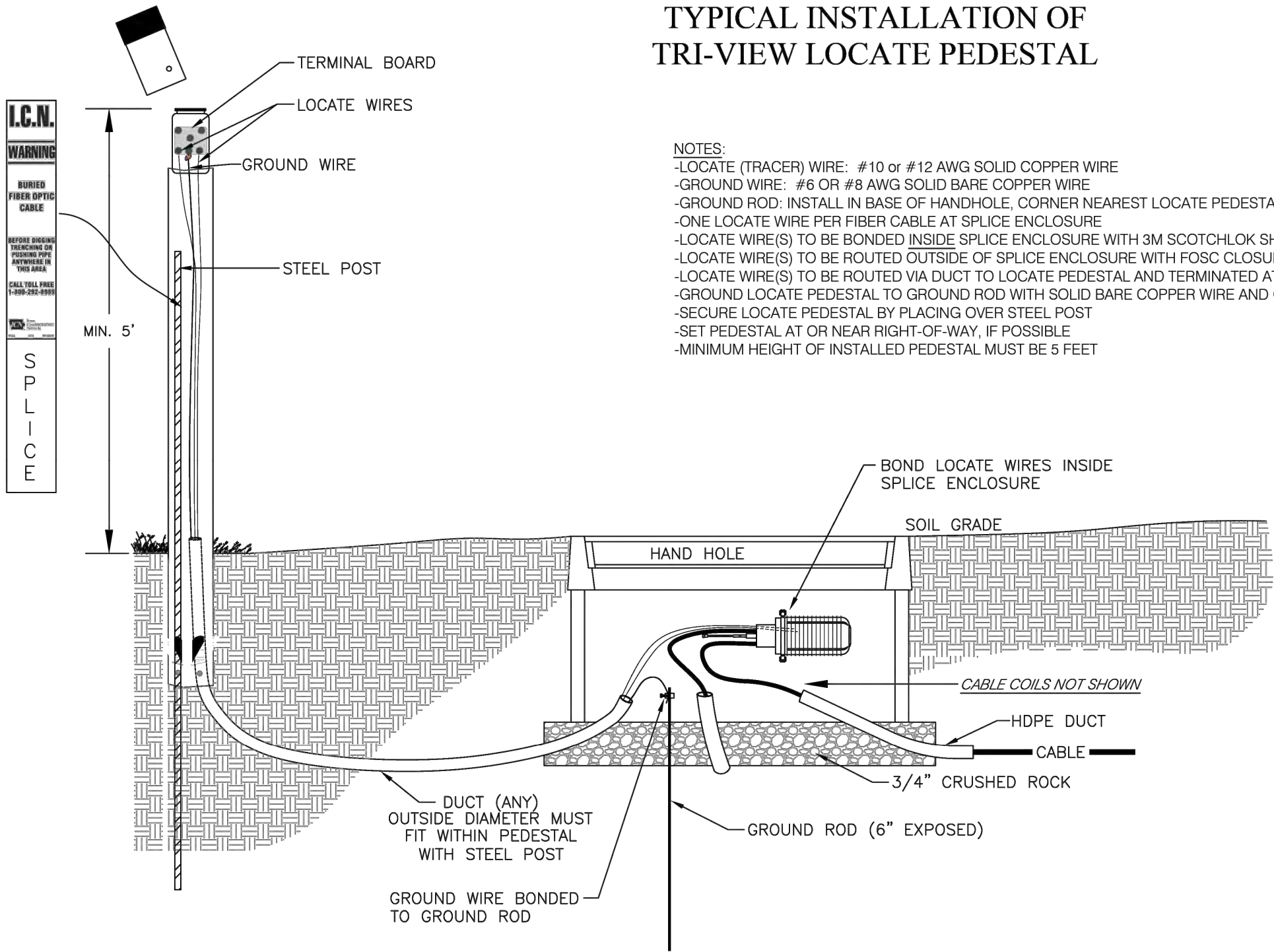
USE TRACER WIRE THAT IS RATED FOR DIRECT BURIAL WHERE REQUIRED. TRACER WIRE
SHALL BE #12 AWG, SOLID HF CCS 30 MIL HDPE HIGH FLEX TRACER WIRE: EITHER
SOLID COPPER OR COPPER CLAD STEEL.

CONSTRUCTION DOCUMENT



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TYPICAL INSTALLATION OF
TRI-VIEW LOCATE PEDESTAL

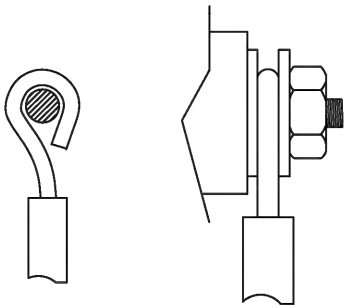


- NOTES:
- LOCATE (TRACER) WIRE: #10 or #12 AWG SOLID COPPER WIRE
 - GROUND WIRE: #6 OR #8 AWG SOLID BARE COPPER WIRE
 - GROUND ROD: INSTALL IN BASE OF HANDHOLE, CORNER NEAREST LOCATE PEDESTAL, LEAVE ~6-IN EXPOSED ABOVE GRAVEL
 - ONE LOCATE WIRE PER FIBER CABLE AT SPLICE ENCLOSURE
 - LOCATE WIRE(S) TO BE BONDED INSIDE SPLICE ENCLOSURE WITH 3M SCOTCHLOK SHIELD BONDING KIT
 - LOCATE WIRE(S) TO BE ROUTED OUTSIDE OF SPLICE ENCLOSURE WITH FOSC CLOSURE SEALING KIT
 - LOCATE WIRE(S) TO BE ROUTED VIA DUCT TO LOCATE PEDESTAL AND TERMINATED AT TERMINAL BOARD
 - GROUND LOCATE PEDESTAL TO GROUND ROD WITH SOLID BARE COPPER WIRE AND GROUND CLAMP
 - SECURE LOCATE PEDESTAL BY PLACING OVER STEEL POST
 - SET PEDESTAL AT OR NEAR RIGHT-OF-WAY, IF POSSIBLE
 - MINIMUM HEIGHT OF INSTALLED PEDESTAL MUST BE 5 FEET

TRACER WIRE TERMINATION DETAIL

Termination of the locate wire at either a pedestal, puck, or in a splice case shall be made in the following fashion:

Strip off a minimum of 3/4" of insulation. Using a needle nose pliers bend a wire "eyelet" on the wire end in a clockwise manner. Use a flat washer on both sides of the wire eyelet when cinching it down on the stud. Flat washers shall be of appropriate size such that the hole matches the diameter of the stud and the outside diameter of the flat washer matches reasonably close to the eyelet diameter.



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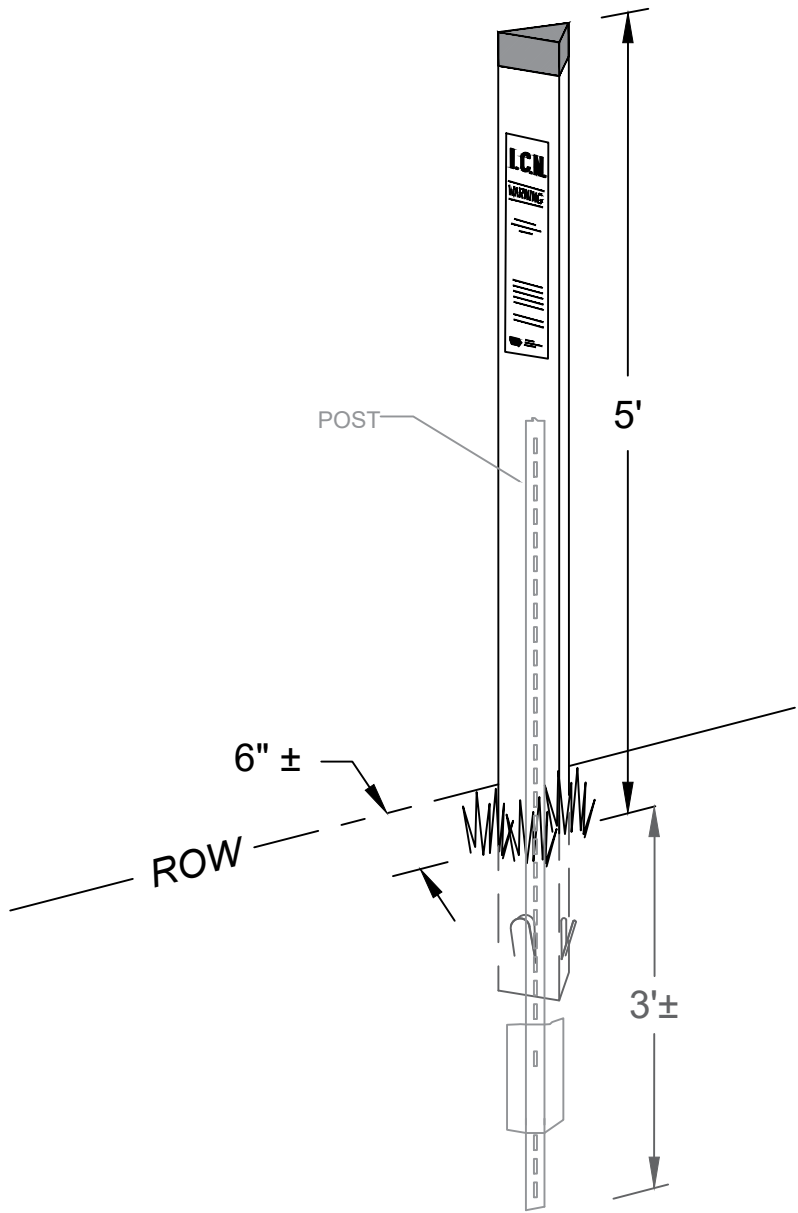
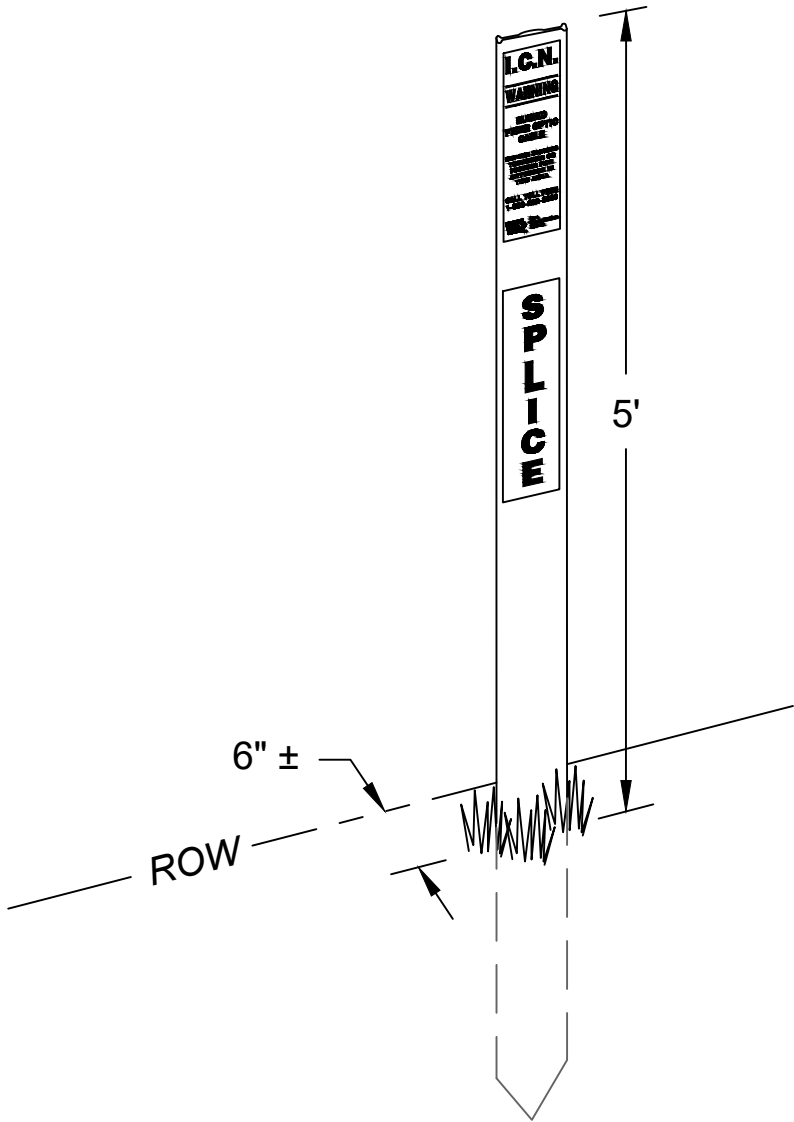
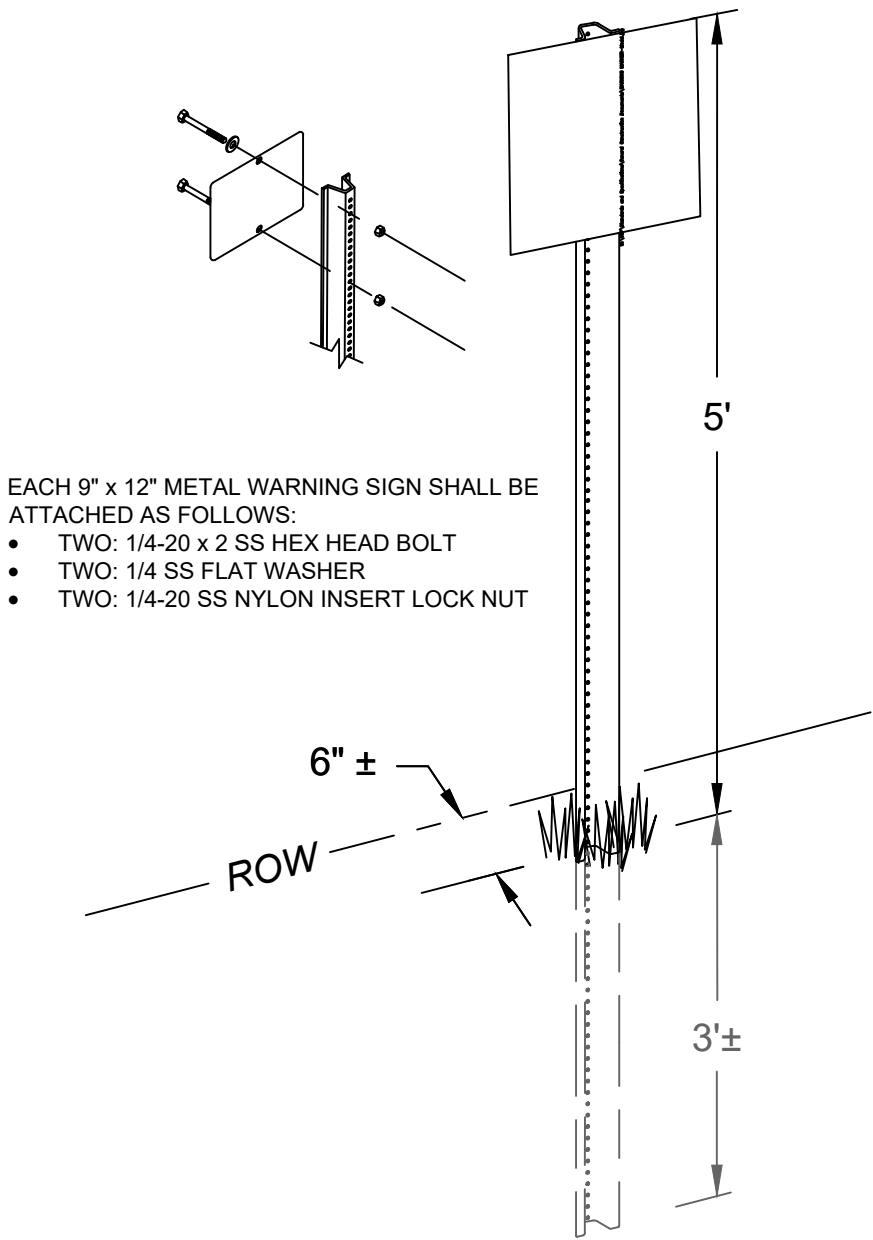
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WARNING MARKER INSTALLATION DETAIL

METAL SIGN &
U-CHANNEL POST



FIBERGLASS
MARKER

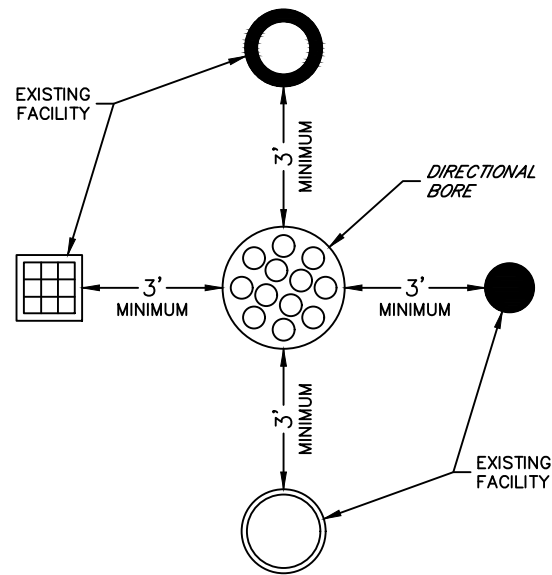
TRIVIEW
MARKER



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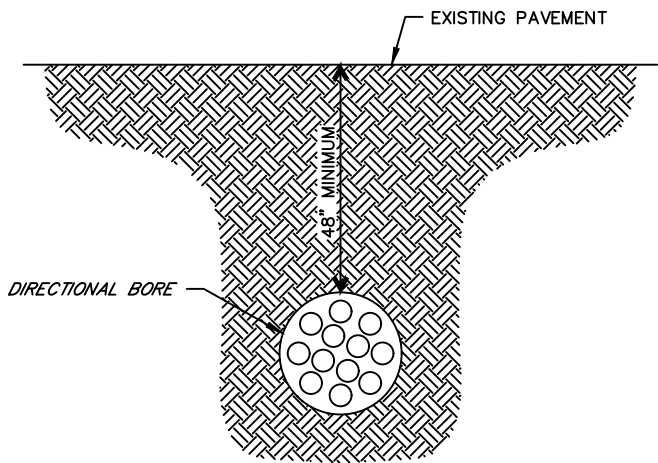


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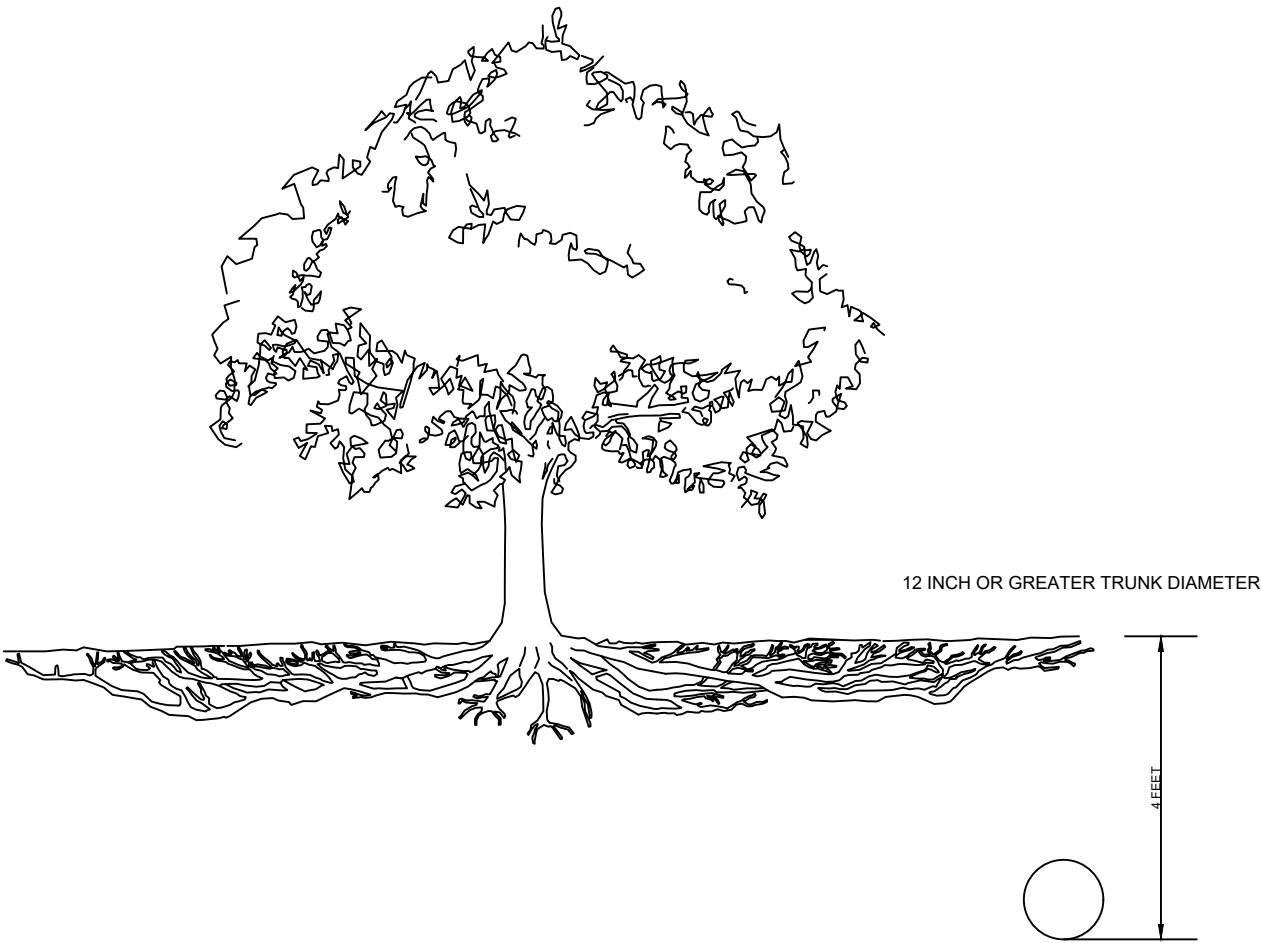


MAINTAIN A MINIMUM OF AT LEAST 3 FEET OF SEPARATION IN ANY DIRECTION BETWEEN DIRECTIONAL BORE AND ALL EXISTING FACILITIES.

UTILITY SEPARATION DETAIL





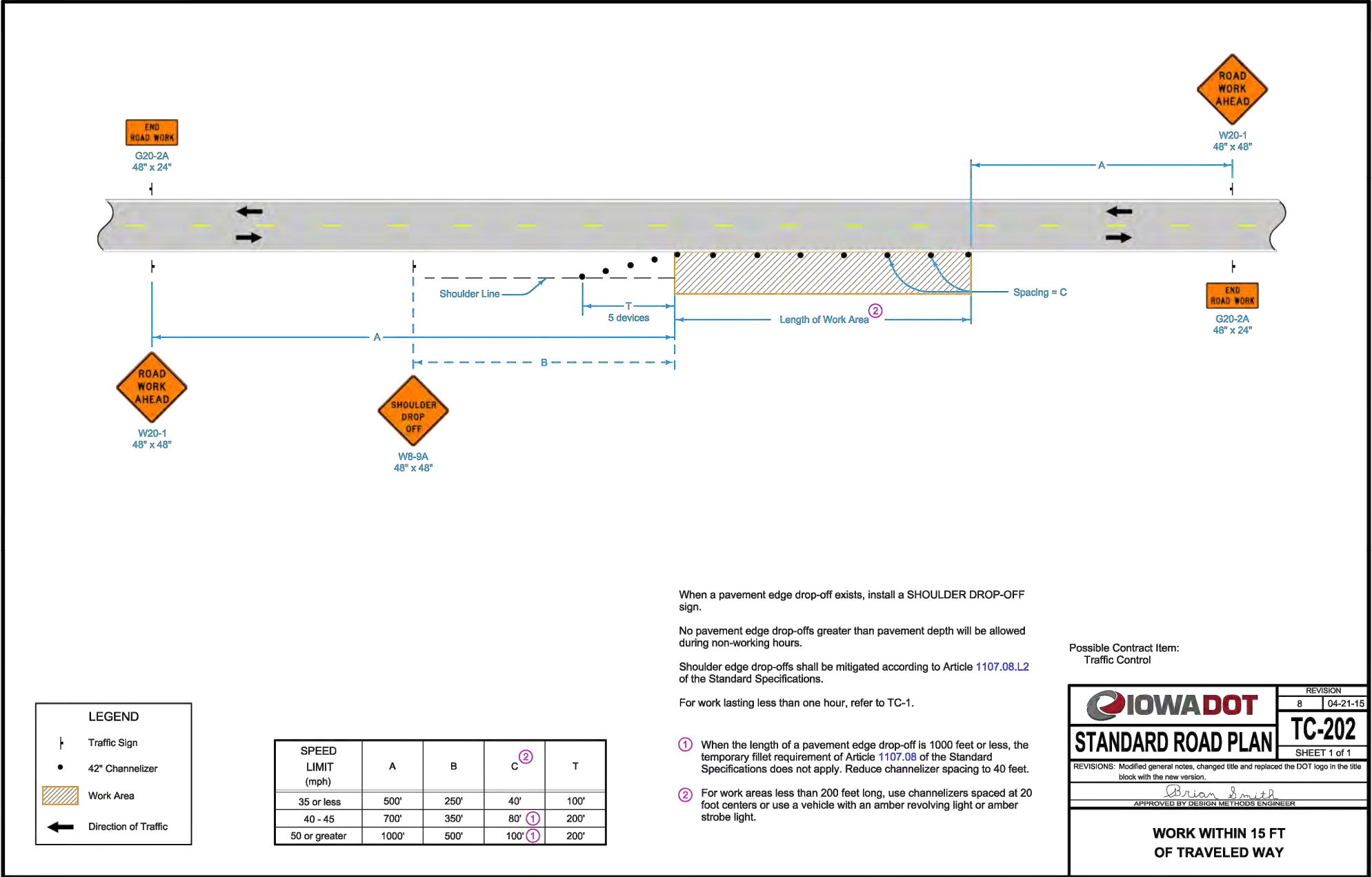
DIRECTIONAL BORING DETAIL



TREE PROTECTION - TUNNELING





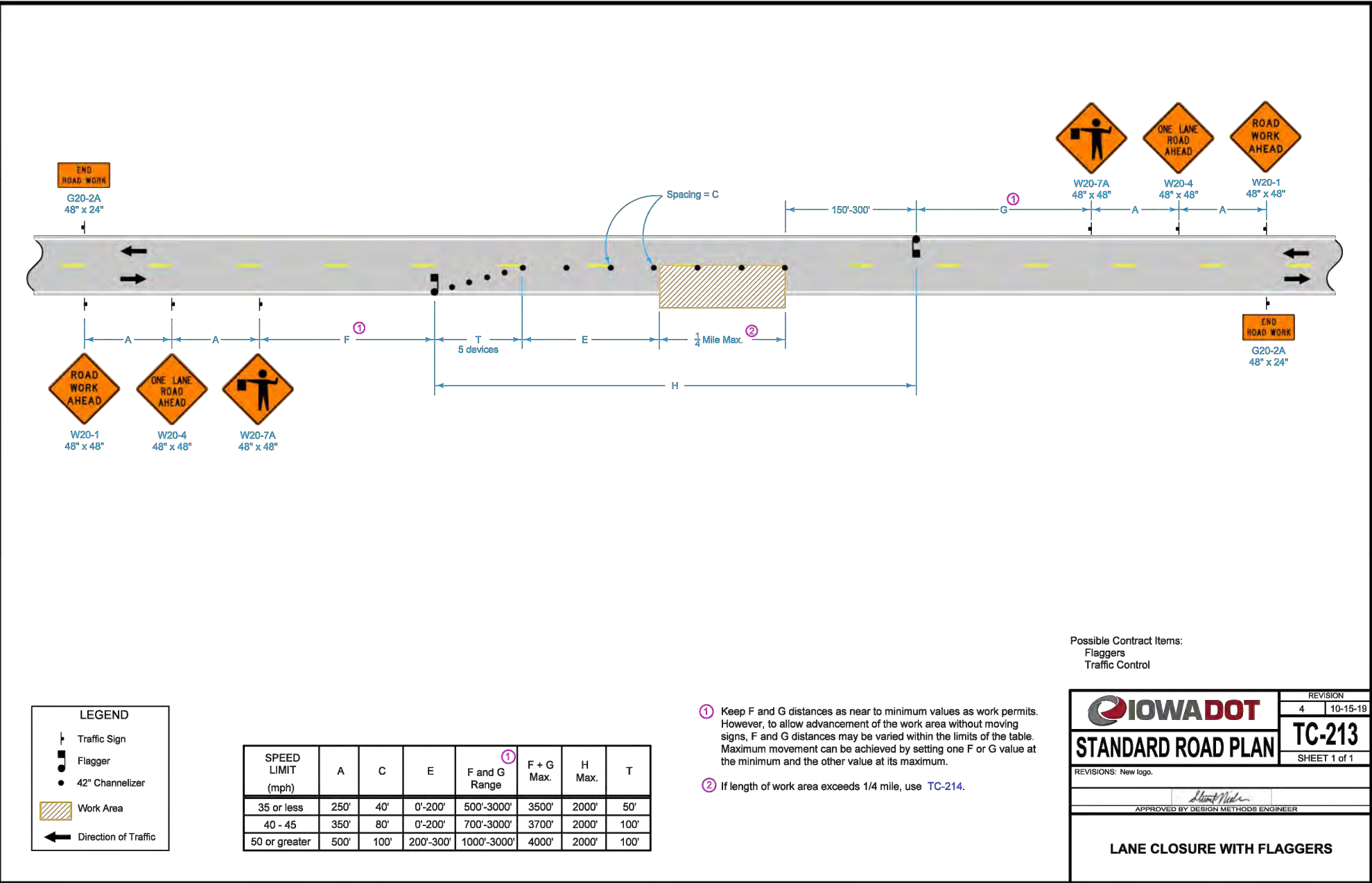
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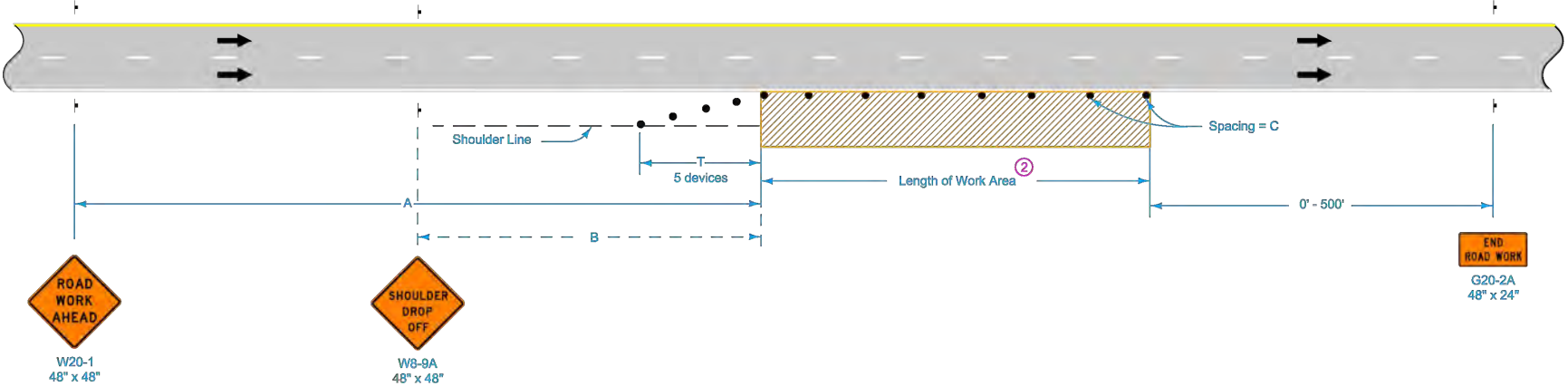


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LEGEND

- Traffic Sign
- 42" Channelizer
- Work Area
- Direction of Traffic

SPEED LIMIT (mph)	A	B	C ^②	T
40 or less	500'	250'	40'	100'
45 - 50	700'	350'	80' ①	200'
55 - 60	1500'	500'	100' ①	200'
65 - 70	1500'	500'	100' ①	230'

When a pavement edge drop-off exists, install a SHOULDER DROP-OFF sign.

No pavement edge drop-offs greater than pavement depth will be allowed during non-working hours.

Shoulder edge drop-offs shall be mitigated according to Article 1107.08.L2 of the Standard Specifications.

For work lasting less than one hour, refer to TC-1.

- ① When the length of a pavement edge drop-off is 1000 feet or less, the temporary fillet requirement of Article 1107.08 of the Standard Specifications does not apply. Reduce channelizer spacing to 40 feet.
- ② For work areas less than 200 feet long, use channelizers spaced at 20 foot centers or use a vehicle with an amber revolving light or amber strobe light.

Possible Contract Item:
Traffic Control

STANDARD ROAD PLAN

REVISION	
8	04-21-15
TC-402	
SHEET 1 of 1	
REVISIONS: Modified general notes, changed title and replaced the DOT logo in the title block with the new version.	
<i>Brian Smith</i> APPROVED BY DESIGN METHODS ENGINEER	

**WORK WITHIN 15 FT
OF TRAVELED WAY**

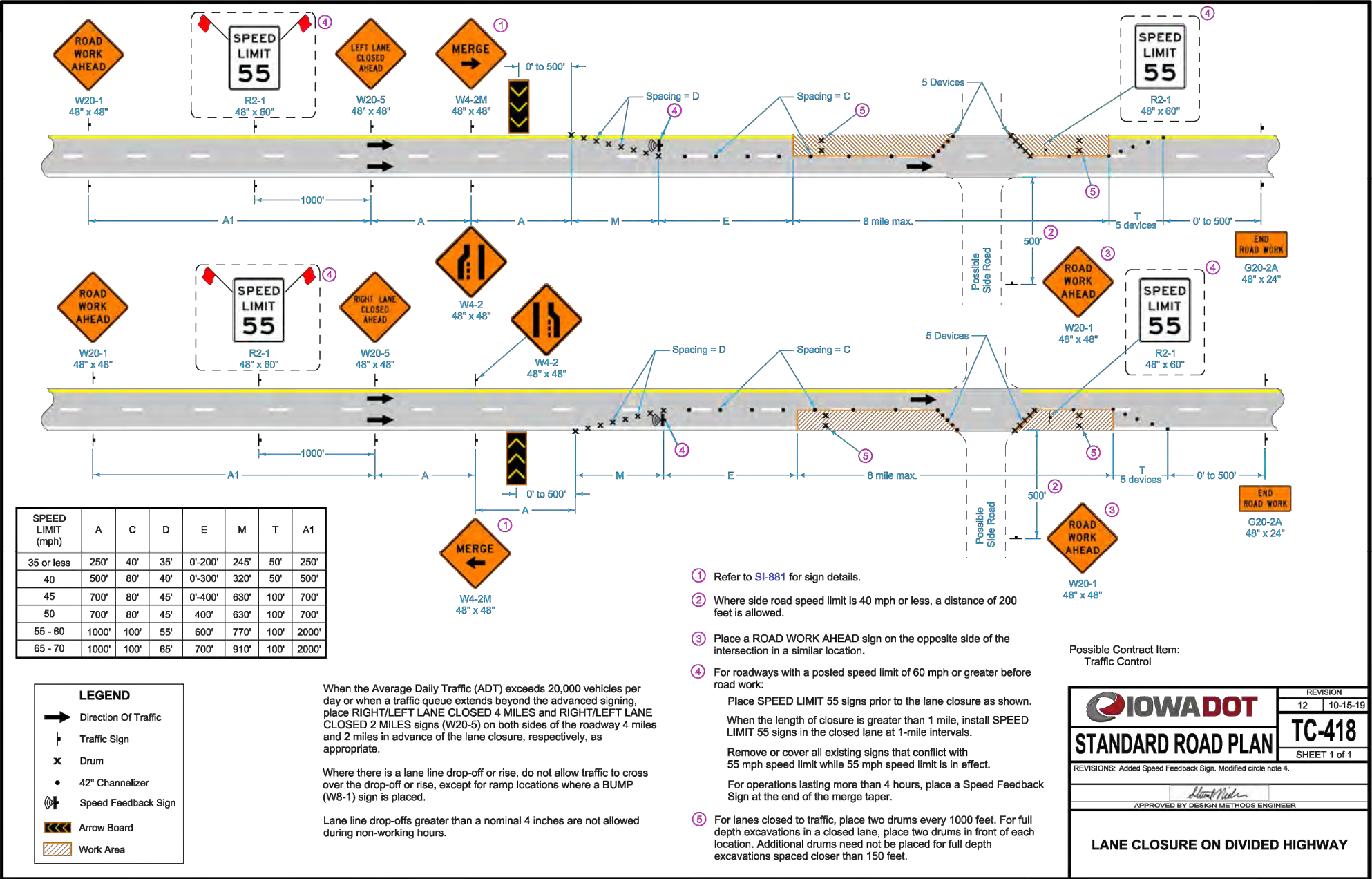
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1-800-292-8989
www.iowaonecall.com

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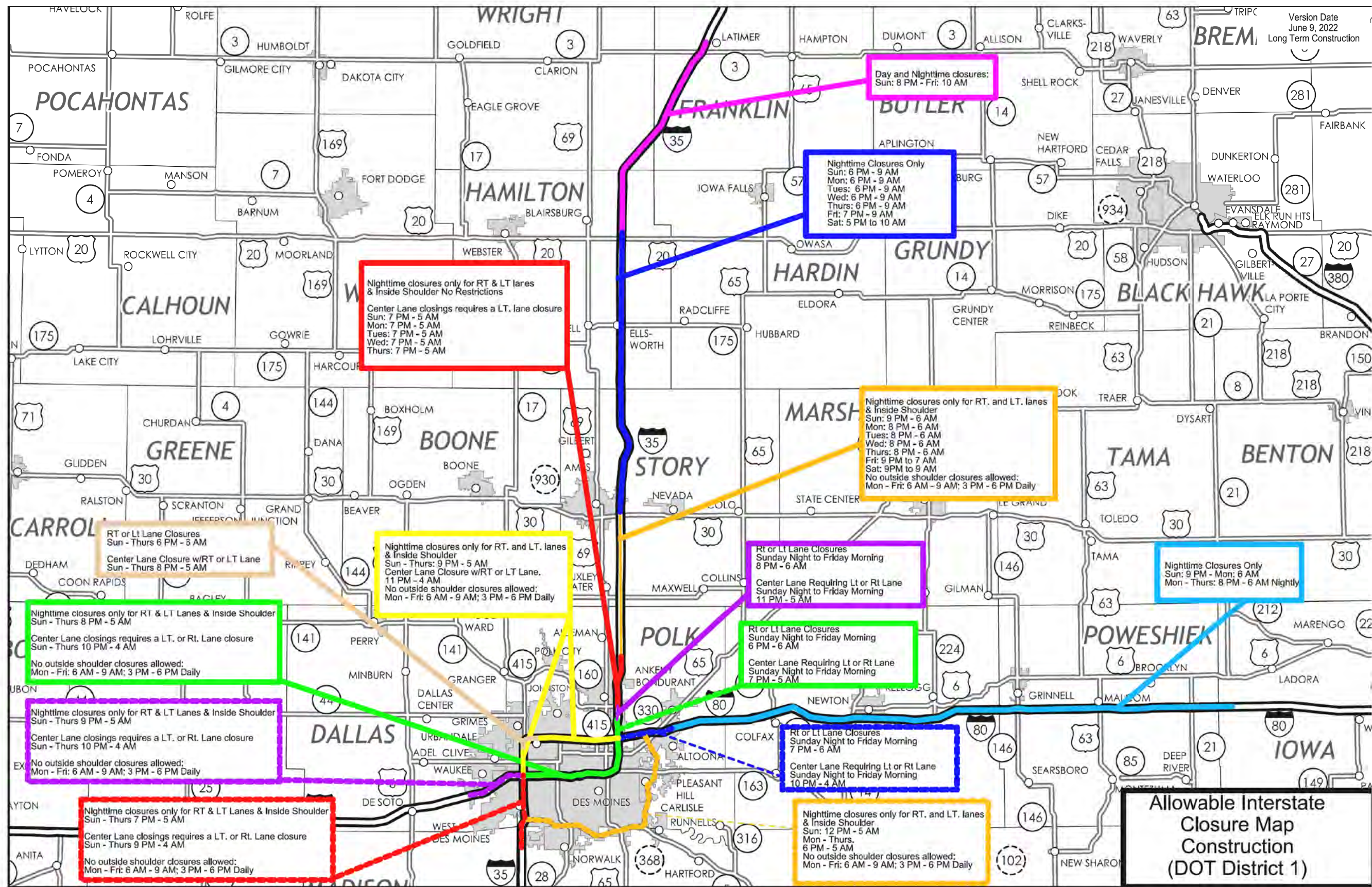
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DISTRICT 1 WORK ZONE RESTRICTIONS MAP