# IOWA COMMUNICATIONS NETWORK

# CONSTRUCTION DRAWINGS FOR: **NEW CONSTRUCTION BETWEEN AMES & NEVADA** HWY 30, 600TH, 250TH, & 610TH (STORY COUNTY)

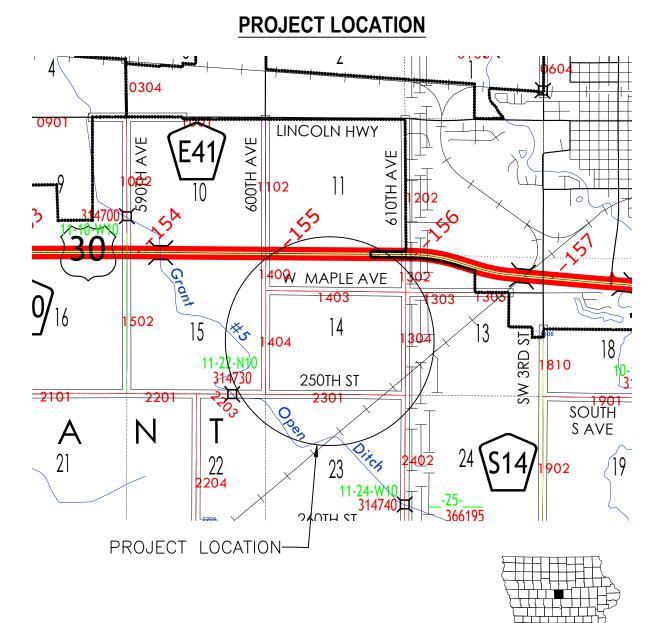
## **PROJECT OVERVIEW:**

## **DESCRIPTION OF PROJECT**

- PROVIDE AND PLACE APPROXIMATELY 12.382-FT± OF 2-IN HDPE VIA PLOW AND DIRECTIONAL BORE
- ALL DRIVEWAYS, ROAD CROSSINGS, AND (1) RAILROAD TO BE BORED
- ALL 2-IN HDPE SHALL BE COUPLED TO ALLOW CONTINUOUS PULLING OF FIBER FROM EACH HANDHOLE
- ALL DUCT SPLICES SHALL BE AIR AND WATER TIGHT AND BE SPECIFICALLY MADE FOR JOINING HDPE CONDUIT
- PROVIDE AND PLACE (5) 24X36X30 TIER 15 HANDHOLES WITH LID SET TO GRADE
- HANDHOLES TO BE INSTALLED PER ICN TYPICAL DRAWING ON PAGE 14
- PREP FOR TRIVIEW LOCATE PEDESTAL ON EACH END OF THE NEW CONSTRUCTION, SEE TYPICAL DRAWING ON PAGE 14
- PROVIDE AND PULL APPROXIMATELY 13,308-FT± OF ARMORED OSP RATED 12CT FIBER OPTIC CABLE (12F)
- (2) ICN SPLICE POINTS ON EACH END OF THE NEW CONSTRUCTION
- (1) LUMEN SPLICE POINT FOR ICN TIE-IN ON THE SOUTH END OF THE NEW CONSTRUCTION (SEE CONSTRUCTION PLANS FOR DETAILS)
- REMAINING HANDHOLES ARE FOR SLACK COILS (CONTINUOUS FIBER | NOT SPLICE POINTS)

CONTACTS*								
COMPANY	TYPE	NAME	PHONE	EMAIL				
lowa Communications Network (ICN)	OSP Engineer	Mike Dalen	515-499-1642	mike.dalen@iowa.gov				
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Fiber Network Services (FNS)	Splicing Coordination	NOC OSP	515-725-7423	icnnocosp@iowa.gov				
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\*THIS CONTACT LIST IS NOT ALL-INCLUSIVE. CONTRACTOR IS RESPONSIBLE FOR REQUESTING LOCATES OF ALL UTILITIES



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CATIONS NETWORK 400 EAST 14TH STREET GRIMES STATE OFFICE BUILDING DES MOINES, IOWA 50319
ICN © 2021, COPY WITH PERMISSION SIZE: 11 x 17 TITLE PAGE

FILE: R:\OSP PROJECTS\DALEN\All Counties\00230307 BOREAS Group Network Configuration Options\85250807 — Story Co — BOREAS — Lumen Tie—In Nevada To Ames ISU Vet Med — New Construction\(CN RELO PLANS\85\\$500097 PROBF07 100G-\#:\T8tiz2508\pic\_07\wightage\_07\wig

#### STANDARD INSTALLATION REQUIREMENTS:

#### GENERAL REQUIREMENTS:

- 1. THE CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITIES.
- 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).
- 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
- 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 GROLIND RENEATH
- 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 48 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
- 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
- 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

- 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 1/4" OPENING HARDWARE CLOTH TYPE SCREEN WIRE BELOW THE HANDHOLE.
- 3. PROVIDE 5-6 INCHES OF 3/4" 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.
- 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.
- SPLICES IN THE TRACER WIRE ARE NOT ALLOWED. IF TRACER WIRE IS ACCIDENTALLY SEVERED, REQUEST PERMISSION FROM ICN TO SPLICE.
- 3. WIRE SPLICES 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 STEFI
- 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  $\underline{3M}$  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.

NEW CONSTRUCTION

SCALE: NONE



NEW CONSTRUCTION BETWEEN AMES & NEVADA STORY CO — HWY 30, 600TH, 250TH, & 610TH

SIZE: 11 x 17 | ICN GENERAL NOTES

7-22-25

IOWA COMMUNICATIONS NETWORK

400 EAST 14TH STREET
GRIMES STATE OFFICE BUILDING
DES MOINES, IOWA 50319
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FILE: R:\OSP PROJECTS\DALEN\All Counties\00230307 BOREAS Group Network Configuration Options\85250807 — Story Co — BOREAS — Lumen Tie—In Nevada To Ames ISU Vet Med — New Construction\(CN RELO PLANS\85\\$509307 PROJECOT) 1026 —#:18562508007 DOC -#:18562508007 DO

ITEM	ICN PART NUMBER 🕝	QTY .T	NOTES -
ICN PROVIDED MATERIALS			
TRIVIEW Test Station w/ Isolever 72" ORANGE (with 3 ICN decals applied) (Walker)	TVT172OB-EM9125	2	
12 AWG Pro-Line CU HDPE 30 MIL Orange Solid Copper Tracer Wire (2500' reel) (Graybar)	PE3012BC-07	200ft	
450A (with lug) FOSC450-A4-4-NT-0-A1V CLOSURE W/ GROUNDING & STD BSKFOR LT F	FOSC450-A4-4-NT-0-A1V	2	
A TRAY 12 FOSC-ACC-A-TRAY-12 TRAY WITH 12 FUSION SPLICE HOLDER	497817-000	2	
FOSC Closure Sealing Kit FAK-MULDRP-45-4P/CBL-ATT	1F6818-000	2	
3M Scotchlok Shield Bond Connector 4460-D	4460-D	4	
CONTRACTOR PROVIDED MATERIALS*		Χ	
HDPE Conduit (13.5 SDR)	2 INCH	12,382ft±	
Duct Splices	2 INCH	10	
24" X 36" X 30" TD handhole w/ 20T lid TIER 15 (Martin or New Basis)		5	
6 AWG Bare Solid Copper Ground Wire (Graybar) - 315' reel		50	
12 AWG Pro-Line CU HDPE 30 MIL Orange Solid Copper Tracer Wire (2500' reel) (Graybar)		200	
Erico 1/2" x 6' Ground Rod (Graybar)	611360	2	
Burndy 1/2" Ground Rod Clamp (Anixter)	GRC12	2	
12 strand Armored OSP Rated SM fiber		13,308f±	

## 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 1310/1550 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.

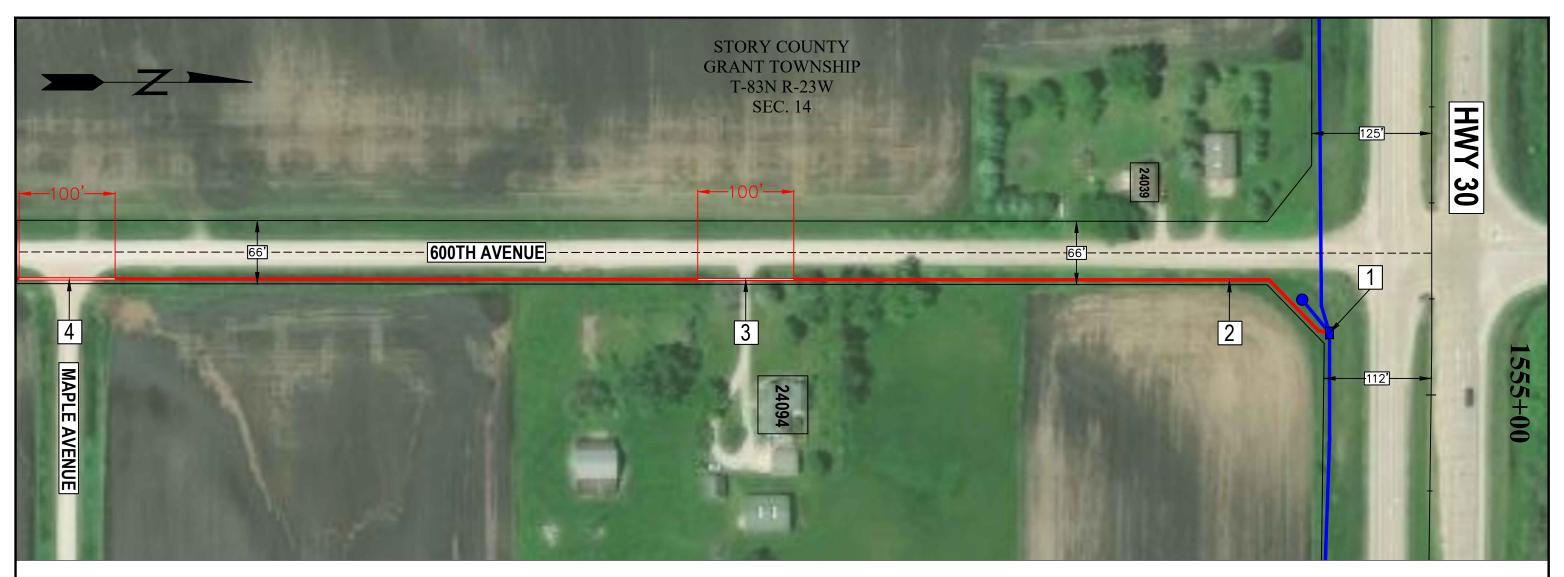
ANY EXCEPTIONS MUST BE AGREED UPON IN WRITING PRIOR TO CONSTRUCTION.



NEW	CC	NS <sup>-</sup>	TRU	ICTION	N BE	TWEEN	AMES	&	NE	EVADA
STOR'	Υ (	CO	_	HWY	30,	600TH,	250T	Η,	&	610TH



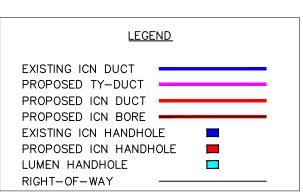
1	NEW CONSTRUC	CTION	7-22-25	IOWA COMMUNICATIONS NETWORK						
2				400 EAST 14TH STREET						
3				GRIMES STATE OFFICE BUILDING DES MOINES, IOWA 50319						
4				ICN © 2021, COPY WITH PERMISSION						
CALE: NONE SIZE: 11 x 17			MATERIALS	PAGE 3 OF 14						



- 1. STA. 1554+35: EXISTING HANDHOLE WITH SPLICE ENCLOSURE
  - BEGIN 2-IN HDPE
- BRING HDPE UNDERNEATH AND INTO HANDHOLE PER ICN TYPICAL ATTACHED
- LEAVE 75± OF NEW ARMORED OSP RATED 12F COILED IN BOTTOM OF HANDHOLE FOR A SPLICE TAIL
- 2-WAY LOCATE POINT, PREP FOR TRIVIEW LOCATE PEDESTAL, AND SEE TYPICAL DRAWING ATTACHED
- 2. STA. 1554+35 TO CALLOUT (21) SOUTH OF 250TH AND 610TH: PROVIDE & PLACE 12,382-FT± OF 2-IN HDPE
- PLACE HDPE 4-FT FROM ROW AND A MINIMUM OF 3-FT BELOW GRADE
- ALL DRIVEWAYS, ROAD CROSSINGS, AND RAILROAD TO BE DIRECTIONALLY BORED PER CONSTRUCTION PLANS
- HDPE SHALL BE SMOOTH WALL SDR 13.5
- ALL DUCT SPLICES SHALL BE AIR AND WATER TIGHT VIA CRIMP ON, CLAMP/BOLT ON, OR PUSH ON.
- ALL DUCT SPLICES SHALL BE SPECIFICALLY MADE FOR JOINING HDPE CONDUIT AND ALLOW CONTINUOUS PULLING OF FIBER THROUGHOUT DUCT.
- 3. HOUSE ADDRESS 24094: DIRECTIONALLY BORE DRIVEWAY FOR APPROXIMATELY 100-FT±
- BEG/END PLOW AND SPLICE DUCT TOGETHER ON EACH SIDE PER REQUIREMENTS
- DO NOT PARK OR DISTURB PROPERTY
- 4. MAPLE AVE ROAD CROSSING: DIRECTIONALLY BORE GRAVEL ROAD FOR APPROXIMATELY 100-FT±
- BEG/END PLOW AND SPLICE DUCT TOGETHER ON EACH SIDE PER REQUIREMENTS



1-800-292-8989

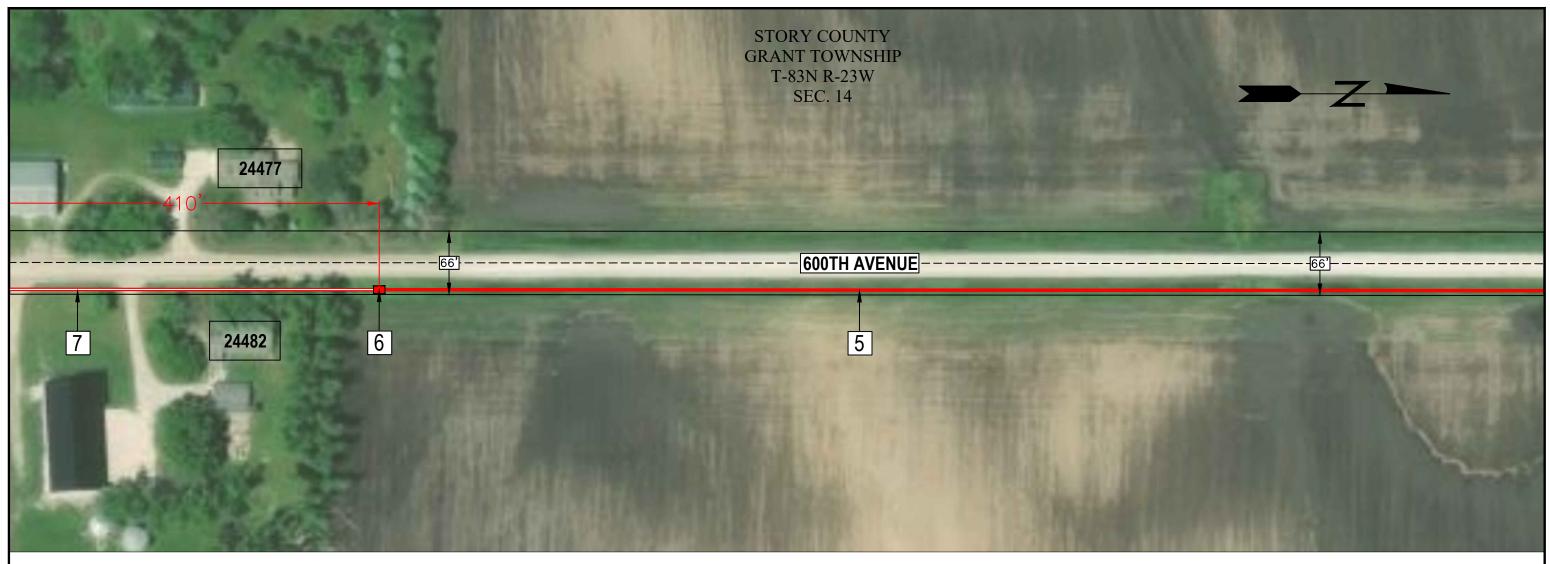


### CONSTRUCTION DOCUMENT

NEW CONSTRUCTION BETWEEN AMES & NEVADA STORY CO - HWY 30, 600TH, 250TH, AND 610

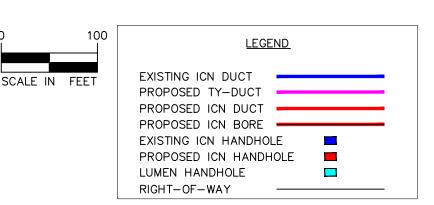


STO	ORY CO - HWY 30,	600TH, 250	OTH, AND 610TH lowa Communications Network
1	NEW CONSTRUCTION	7-21-25	IOWA COMMUNICATIONS NETWORK
2			400 EAST 14TH STREET
3			GRIMES STATE OFFICE BUILDING DES MOINES. IOWA 50319
4			ICN © 2023, COPY WITH PERMISSION
SCAL	E. 1" - 100' SIZE: 11 v 17	CONSTRUCTION	PAGE 4 OF 14



- 5. PLOW 2-IN HDPE
- PLACE HDPE 4-FT FROM ROW AND A MINIMUM OF 3-FT BELOW GRADE
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- 6. PROVIDE AND PLACE 24X36X30 TIER 15 HANDHOLE WITH LID SET TO GRADE
- PLACE HANDHOLE 4-FT OR LESS FROM ROW
- BRING HDPE UNDERNEATH AND INTO HANDHOLE PER ICN TYPICAL ATTACHED
- END PLOW AND BEGIN DIRECTIONAL BORE FOR DRIVEWAYS
- LEAVE 100-FT OR MORE OF CONTINUOUS ARMORED OSP RATED 12F COILED IN BOTTOM HANDHOLE (NOT A SPLICE OR LOCATE POINT)
- 7. HOUSE ADDRESS 24482: DIRECTIONALLY BORE APPROXIMATELY 410-FT± FOR DRIVEWAYS
- BEG/END PLOW AND SPLICE DUCT TOGETHER ON SOUTH SIDE OF DRIVEWAYS ONLY, AS OTHER END WILL ENTER HANDHOLE ON CALLOUT (6)



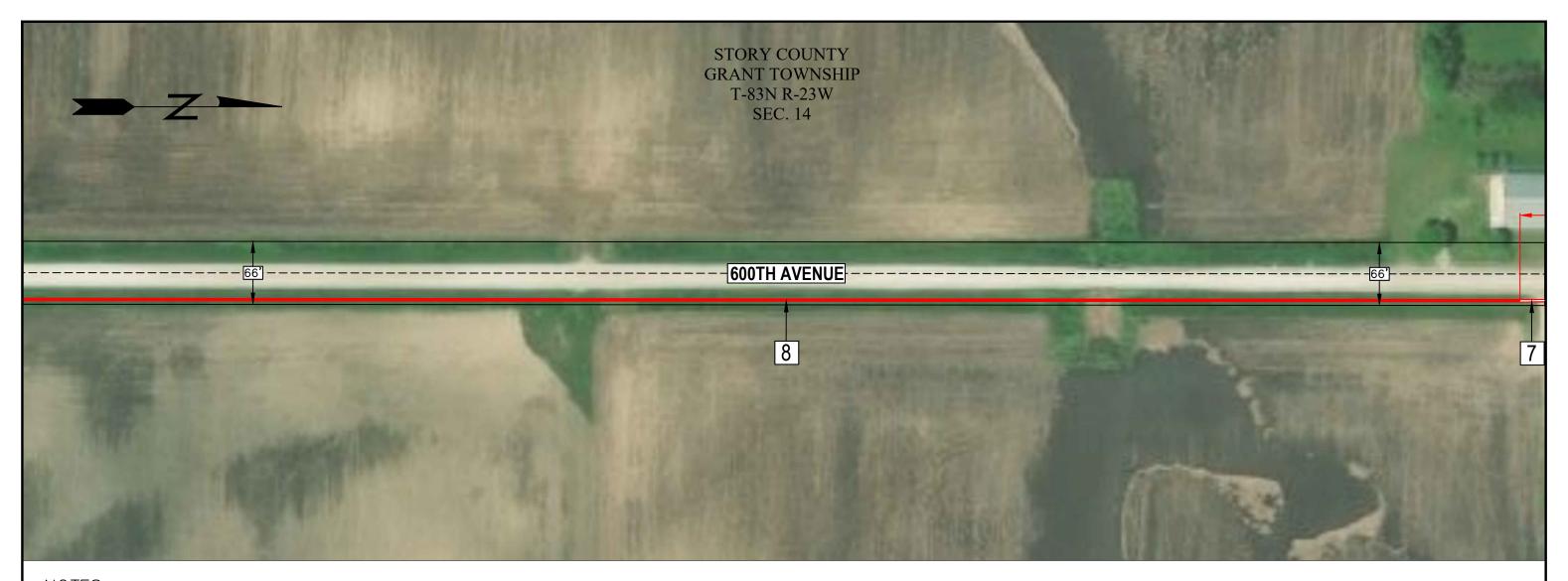


# **CONSTRUCTION DOCUMENT**

NEW CONSTRUCTION BETWEEN AMES & NEVADA STORY CO - HWY 30, 600TH, 250TH, & 610TH

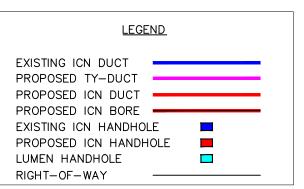


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				400 EAST 14TH STREET				
;				GRIMES STATE OFFICE BUILDING DES MOINES, IOWA 50319				
ļ				ICN © 2023, COPY WITH PERMISSION				
ALI	E: 1" = 100'	SIZE: 11 x 17	CONSTRUCTION	PAGE 5 OF 14				



- 7. HOUSE ADDRESS 24482: DIRECTIONALLY BORE APPROXIMATELY 410-FT± FOR DRIVEWAYS
- BEG/END PLOW AND SPLICE DUCT TOGETHER ON SOUTH SIDE OF DRIVEWAYS ONLY, AS OTHER END WILL ENTER HANDHOLE ON CALLOUT (6)
- 8. PLOW 2-IN HDPE
- PLACE HDPE 4-FT FROM ROW AND A MINIMUM OF 3-FT BELOW GRADE
- ALL DRIVEWAYS, ROAD CROSSINGS, AND RAILROAD TO BE DIRECTIONALLY BORED PER CONSTRUCTION PLANS
- HDPE SHALL BE SMOOTH WALL SDR 13.5
- ALL DUCT SPLICES SHALL BE AIR AND WATER TIGHT VIA CRIMP ON, CLAMP/BOLT ON, OR PUSH ON.
- ALL DUCT SPLICES SHALL BE SPECIFICALLY MADE FOR JOINING HDPE CONDUIT AND ALLOW CONTINUOUS PULLING OF FIBER THROUGHOUT DUCT





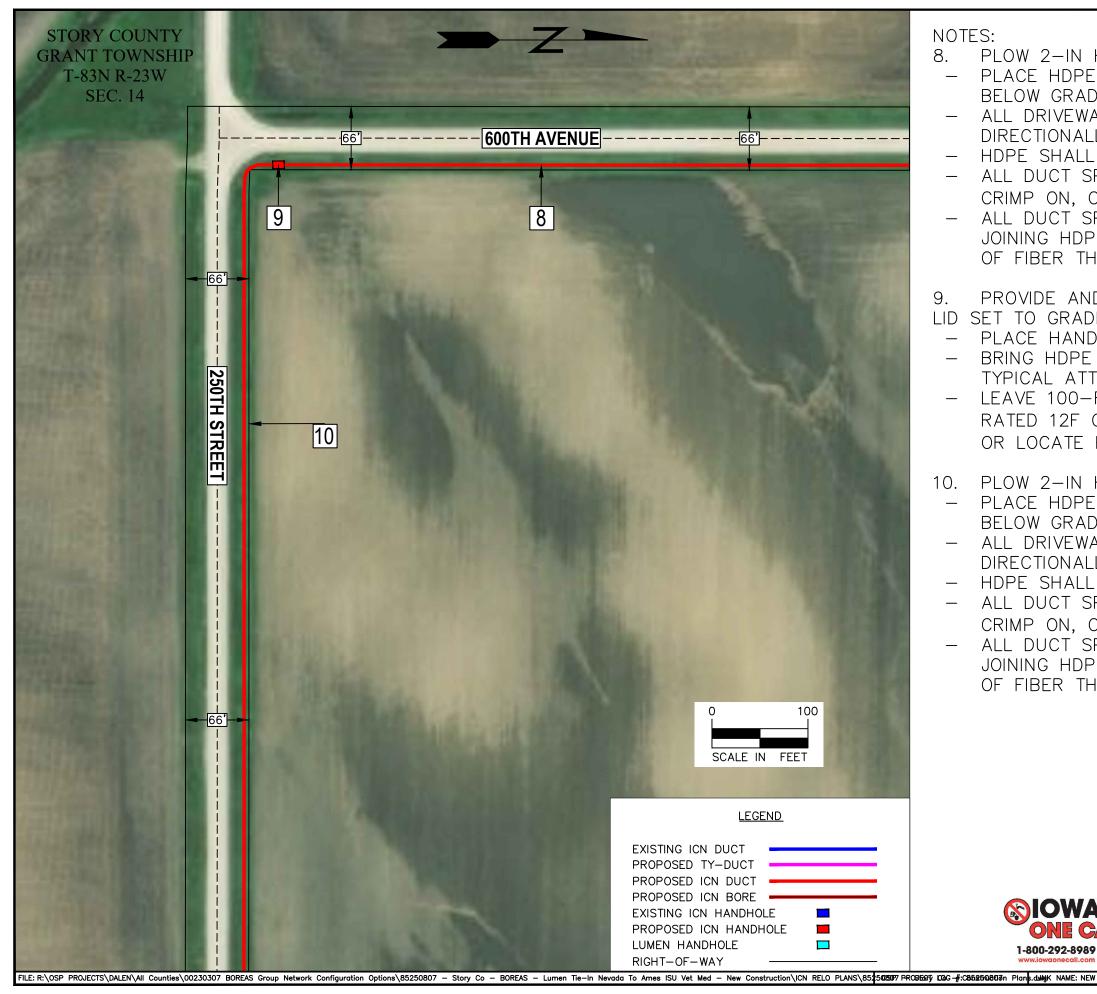
## CONSTRUCTION DOCUMENT

NEW CONSTRUCTION BETWEEN AMES & NEVADA STORY CO - HWY 30, 600TH, 250TH, & 610TH



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### CONSTRUCTION DOCUMENT

NEW CONSTRUCTION BETWEEN AMES & NEVADA STORY CO - HWY 30, 600TH, 250TH, & 610TH 7-21-25

IOWA. IOWA COMMUNICATIONS NETWORK

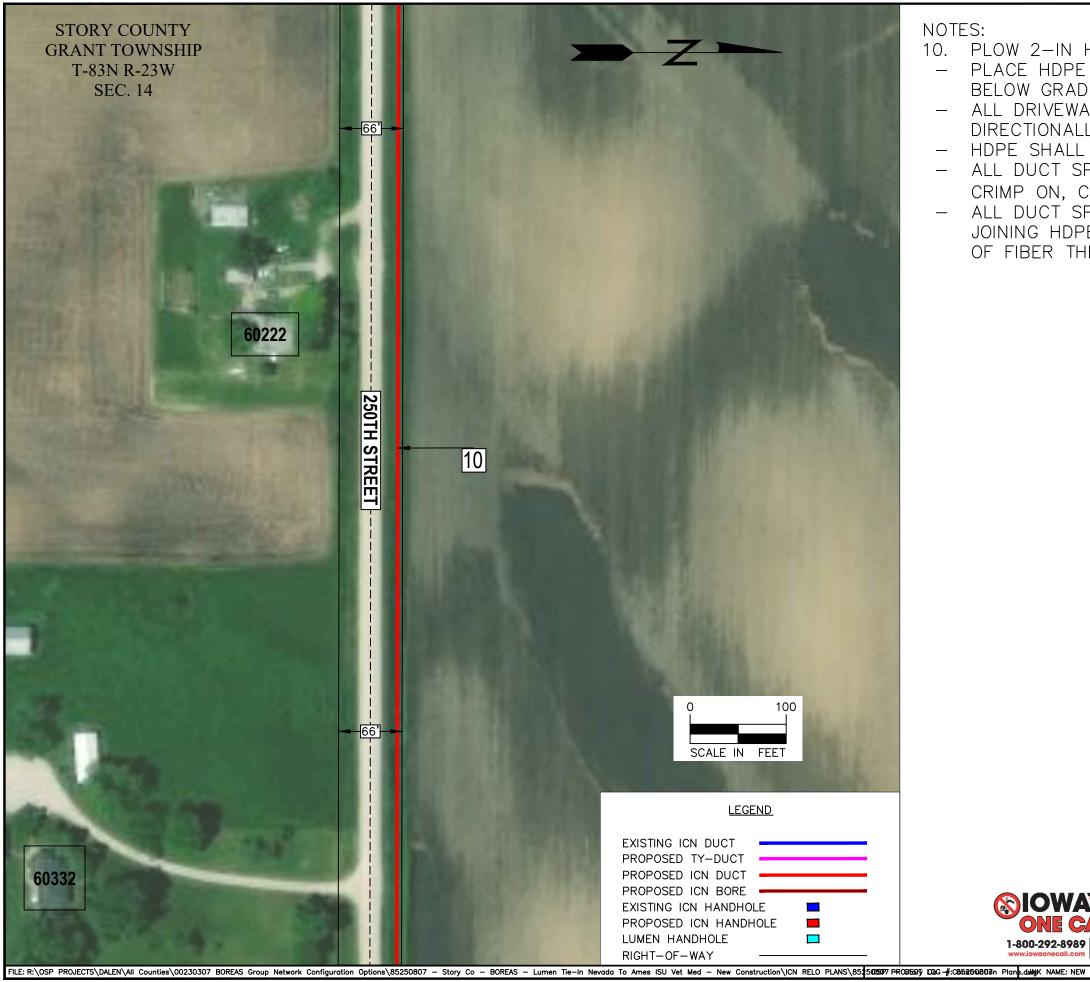
NEW CONSTRUCTION

400 EAST 14TH STREET GRIMES STATE OFFICE BUILDING DES MOINES, IOWA 50319

1-800-292-8989

SCALE: 1" = 100' SIZE: 11 x 17 CONSTRUCTION

PAGE 7 OF 14



- 10. PLOW 2-IN HDPE
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# **CONSTRUCTION DOCUMENT**

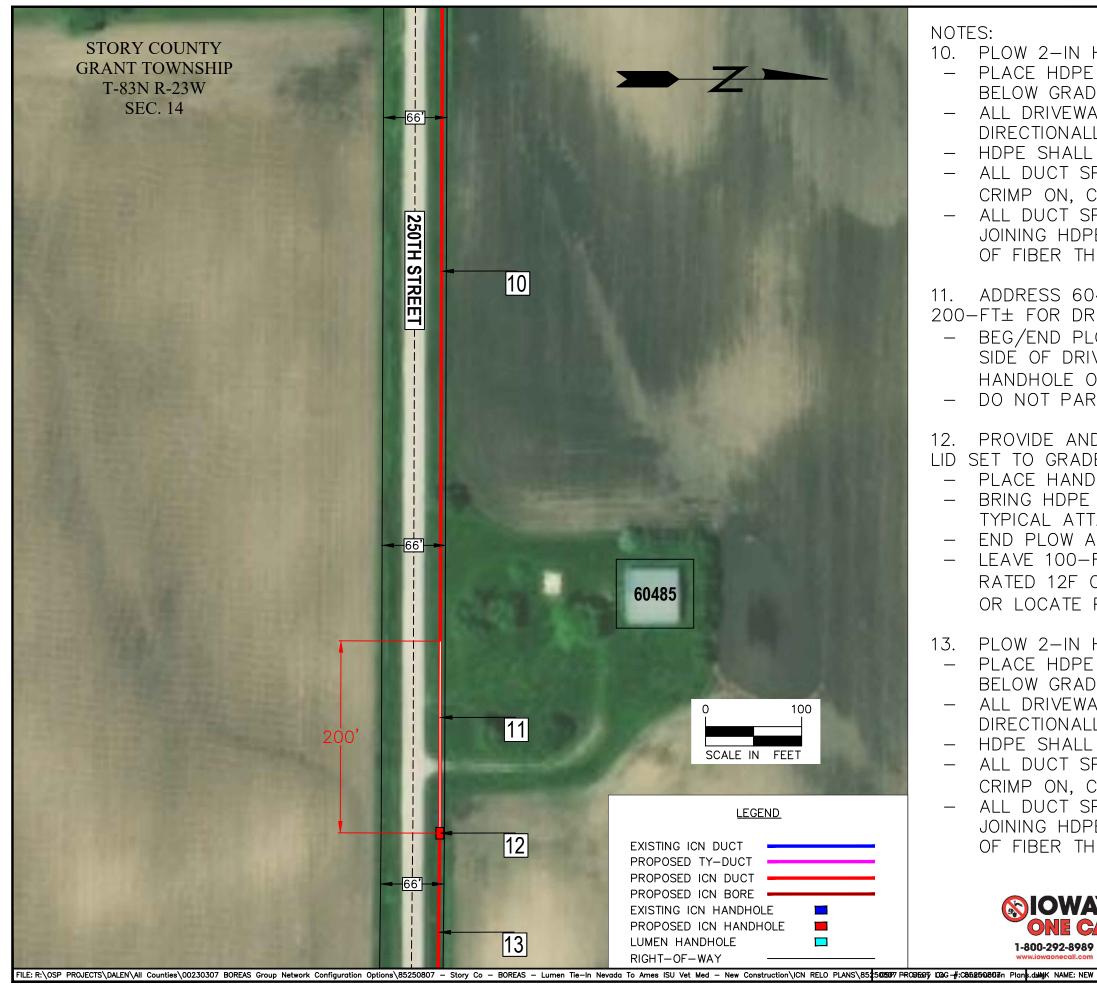


NEW CONSTRUCTION BETWEEN AMES & NEVADA STORY CO - HWY 30, 600TH, 250TH, & 610TH

SCALE: 1" = 100' SIZE: 11 x 17 CONSTRUCTION

IOWA. NEW CONSTRUCTION IOWA COMMUNICATIONS NETWORK
400 EAST 14TH STREET
GRIMES STATE OFFICE BUILDING 7-21-25 DES MOINES, IOWA 50319
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PAGE 8 OF 14



- 10. PLOW 2-IN HDPE
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- ALL DUCT SPLICES SHALL BE SPECIFICALLY MADE FOR JOINING HDPE CONDUIT AND ALLOW CONTINUOUS PULLING OF FIBER THROUGHOUT DUCT
- 11. ADDRESS 60485: DIRECTIONALLY BORE APPROXIMATELY 200-FT± FOR DRIVEWAYS
- BEG/END PLOW AND SPLICE DUCT TOGETHER ON WEST SIDE OF DRIVEWAY ONLY, AS OTHER END WILL ENTER HANDHOLE ON CALLOUT (12)
- DO NOT PARK OR DISTURB PROPERTY
- 12. PROVIDE AND PLACE 24X36X30 TIER 15 HANDHOLE WITH LID SET TO GRADE
- PLACE HANDHOLE 4-FT OR LESS FROM ROW
- BRING HDPE UNDERNEATH AND INTO HANDHOLE PER ICN TYPICAL ATTACHED
- END PLOW AND BEGIN DIRECTIONAL BORE FOR DRIVEWAYS
- LEAVE 100-FT OR MORE OF CONTINUOUS ARMORED OSP RATED 12F COILED IN BOTTOM HANDHOLE (NOT A SPLICE OR LOCATE POINT)
- 13. PLOW 2-IN HDPE
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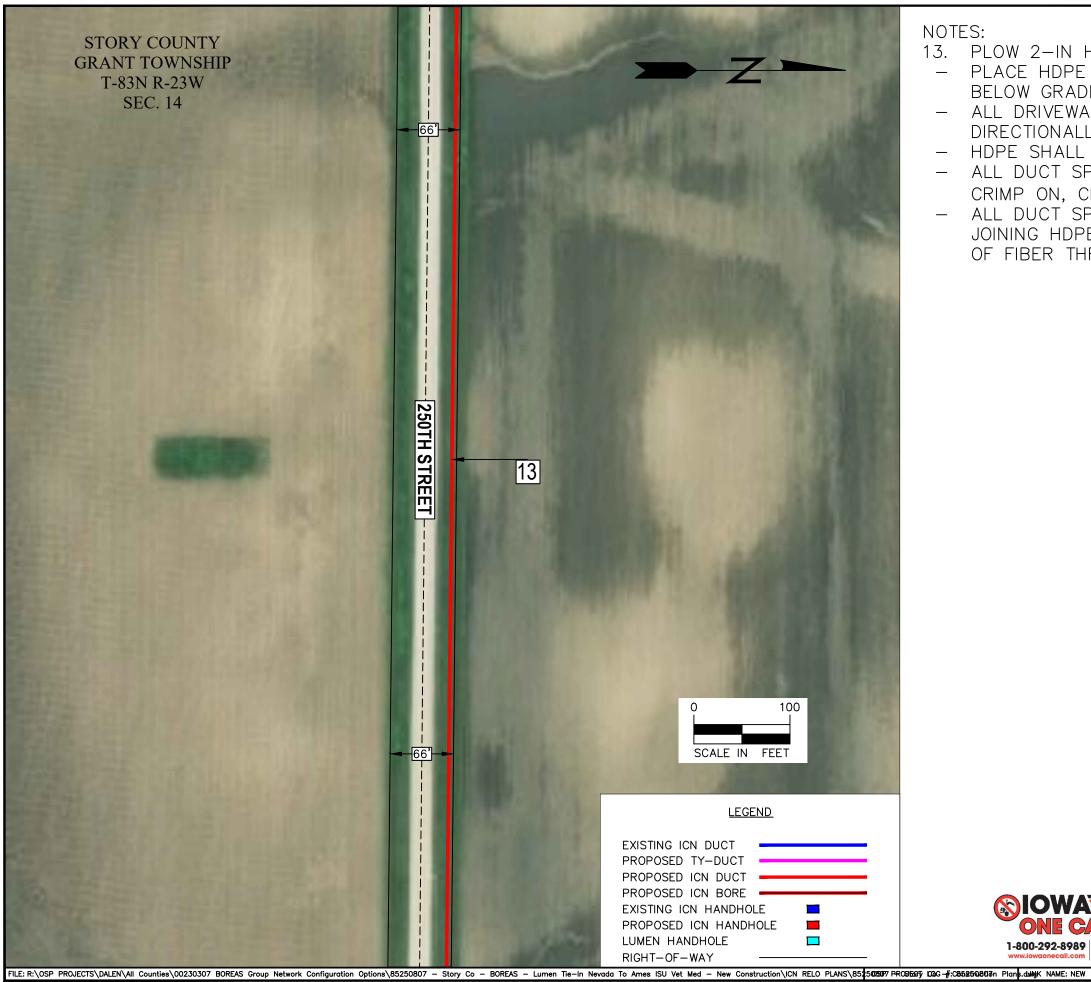
## **CONSTRUCTION DOCUMENT**



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-	STORY	CO	_	HWY	30,	600TH,	250T	Η,	&	610TH

NEW CONSTRUCTION IOWA COMMUNICATIONS NETWORK 400 EAST 14TH STREET GRIMES STATE OFFICE BUILDING DES MOINES, IOWA 50319 SCALE: 1" = 100' SIZE: 11 x 17 CONSTRUCTION PAGE 9 OF 14

IOWA.



- 13. PLOW 2-IN HDPE
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# **CONSTRUCTION DOCUMENT**

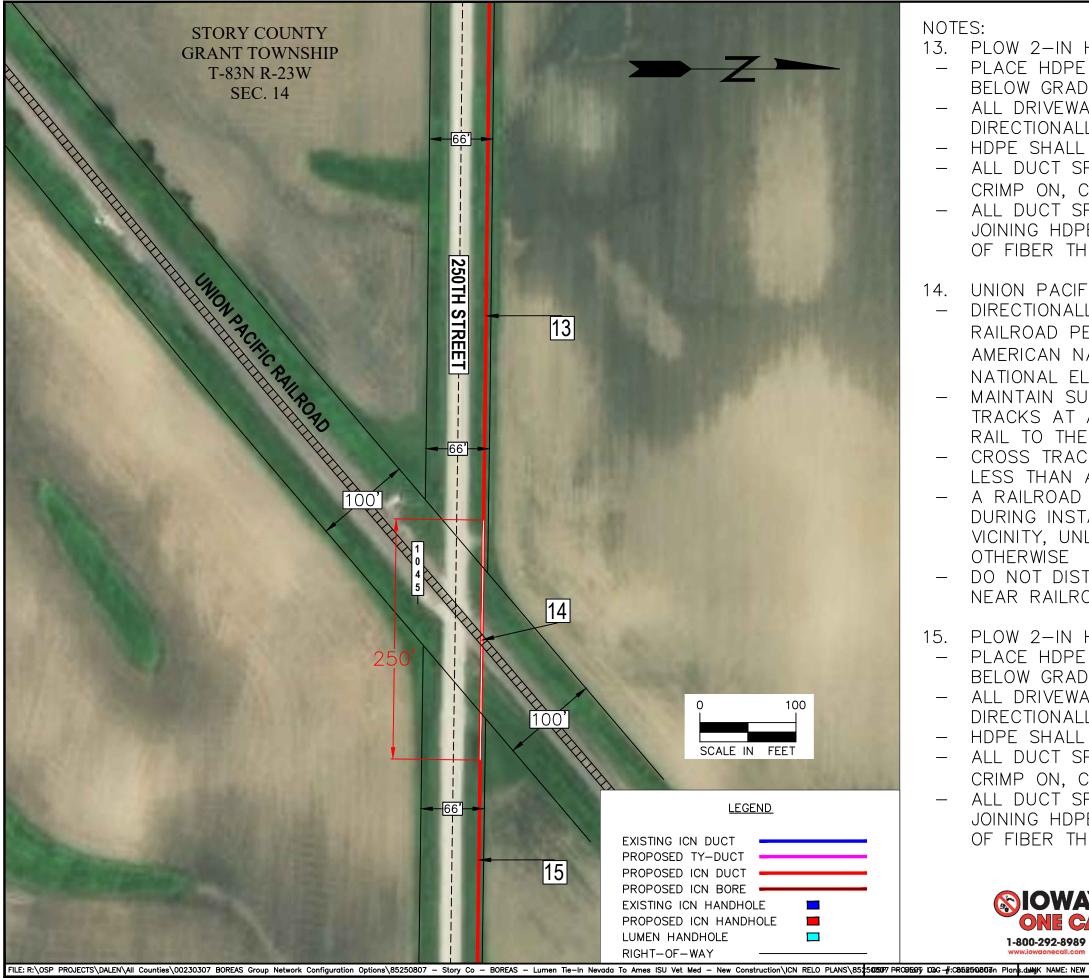


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NEW CONSTRUCTION	7-21-25	IOWA COMMUNICATION	ONS NETWORK				
		400 EAST 14TH STREET					
		GRIMES STATE OFFICE BUILDING					
		DES MOINES, IOW.	A 50319				
	PERMISSION						

SCALE: 1" = 100' SIZE: 11 x 17 CONSTRUCTION

PAGE 10 OF 14



- 13. PLOW 2-IN HDPE
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  - ALL DUCT SPLICES SHALL BE SPECIFICALLY MADE FOR JOINING HDPE CONDUIT AND ALLOW CONTINUOUS PULLING OF FIBER THROUGHOUT DUCT
- 14. UNION PACIFIC RAILROAD CROSSING AT MILE MARKER 1045
- DIRECTIONALLY BORE 100-FT± OF 2-IN HDPE UNDER RAILROAD PER UNION PACIFIC'S SPECIFICATIONS, THE AMERICAN NATIONAL STANDARDS INSTITUTE'S (ANSI), AND NATIONAL ELECTRICAL SAFETY CODE (NESC)
- MAINTAIN SUFFICIENT DEPTH OF COVER BENEATH THE TRACKS AT A MINIMUM OF 15-FT FROM THE BASE OF THE RAIL TO THE TOP OF PIPE
- CROSS TRACKS AS PERPENDICULAR AS POSSIBLE AND NO LESS THAN AT A 60 DEGREE ANGLE
- A RAILROAD SIGNAL REPRESENTATIVE MUST BE PRESENT DURING INSTALLATION IF RAILROAD SIGNALS ARE IN THE VICINITY. UNLESS SIGNAL REPRESENTATIVE AUTHORIZES **OTHERWISE**
- DO NOT DISTURB, STORE, OR PARK EQUIPMENT ON OR NEAR RAILROAD ROW
- 15. PLOW 2-IN HDPF
- PLACE HDPE 4-FT FROM ROW AND A MINIMUM OF 3-FT BELOW GRADE
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### CONSTRUCTION DOCUMENT



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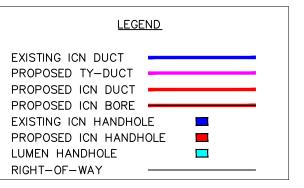
NEW CONSTRUCTION 7-21-25 IOWA COMMUNICATIONS NETWORK 400 EAST 14TH STREET GRIMES STATE OFFICE BUILDING DES MOINES, IOWA 50319
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IOWA.



- 15. PLOW 2-IN HDPE
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- 16. 610TH AVE ROAD CROSSING: DIRECTIONALLY BORE GRAVEL ROAD FOR APPROXIMATELY 100-FT±
- BEG/END PLOW AND SPLICE DUCT TOGETHER ON WEST SIDE OF ROAD ONLY, AS OTHER END WILL ENTER HANDHOLE ON CALLOUT (17)
- 17. PROVIDE AND PLACE 24X36X30 TIER 15 HANDHOLE WITH LID SET TO GRADE
- PLACE HANDHOLE 4-FT OR LESS FROM ROW
- BRING HDPE UNDERNEATH AND INTO HANDHOLE PER ICN TYPICAL ATTACHED
- LEAVE 100-FT OR MORE OF CONTINUOUS ARMORED OSP RATE 12F COILED IN BOTTOM HANDHOLE (NOT A SPLICE OR LOCATE POINT)
- 18. PLOW 2-IN HDPE
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### CONSTRUCTION DOCUMENT

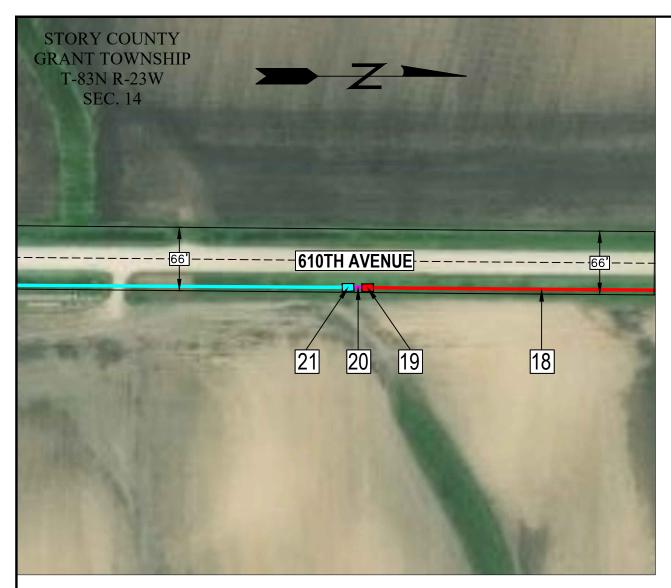
NEW CONSTRUCTION BETWEEN AMES & NEVADA STORY CO - HWY 30, 600TH, 250TH, & 610TH

1-800-292-8989



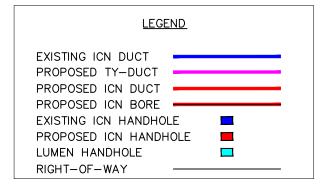
STORY CO - HWY 30, 600TH, 250TH, & 610TH									
1	NEW COM	NSTRUCTION	7-22-25	IOWA COMMUNICATIONS NETWORK					
2				400 EAST 14TH STREET					
3				GRIMES STATE OFFICE BUILDING DES MOINES, IOWA 50319 ICN © 2023, COPY WITH PERMISSION					
4									
SCALE	E: 1" = 100'	SIZE: 11 x 17	CONSTRUCTION		PAGE 12 OF 14				

FILE: R:\OSP PROJECTS\DALEN\All Counties\00230307 BOREAS Group Network Configuration Options\85250807 — Story Co — BOREAS — Lumen Tie—In Nevada To Ames ISU Vet Med — New Construction\ICN RELO PLANS\852508097 PROBEGT; Dac - #:0852508097 PROBEGT; Dac - #:085250809 PROBEGT; Dac - #:085250809 PROBEGT; Dac - #:085250809 PROBEGT; Dac - #:085250809 PROBEGT; Dac - #:08525



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- 19. PROVIDE AND PLACE 24X36X30 TIER 15 HANDHOLE WITH LID SET TO GRADE
- PLACE HANDHOLE 4-FT OR LESS FROM ROW
- BRING HDPE UNDERNEATH AND INTO HANDHOLE PER ICN TYPICAL ATTACHED
- LEAVE 75± OF NEW ARMORED OSP RATED 12F COILED IN BOTTOM OF HANDHOLE FOR A SPLICE TAIL
- THIS WILL BE A ICN SPLICE POINT AND A TIE CABLE WILL BE PULLED OVER TO THE LUMEN HANDHOLE
- 2-WAY LOCATE POINT, PREP FOR TRIVIEW LOCATE PEDESTAL, AND SEE TYPICAL DRAWING ATTACHED
- 20. PROVIDE AND PLACE 2-IN HDPE FROM ICN HANDHOLE TO LUMEN HANDHOLE
- PROVIDE AND PULL ARMORED OSP RATED 12F FROM THE ICN HANDHOLE TO THE LUMEN HANDHOLE LEAVING 75-FT OR MORE IN EACH HANDHOLE FOR SPLICE TAILS
- 21. LUMEN HANDHOLE FOR ICN TO TIE INTO THEIR NETWORK
- WORK WITH ICN OSP/MIKE DALEN ON EXACT LOCATION OF HANDHOLE
- BRING HDPE UNDERNEATH AND INTO HANDHOLE PER ICN TYPICAL ATTACHED
- LEAVE 75± OF NEW ARMORED OSP RATED 12F COILED IN BOTTOM OF HANDHOLE FOR A SPLICE TAIL





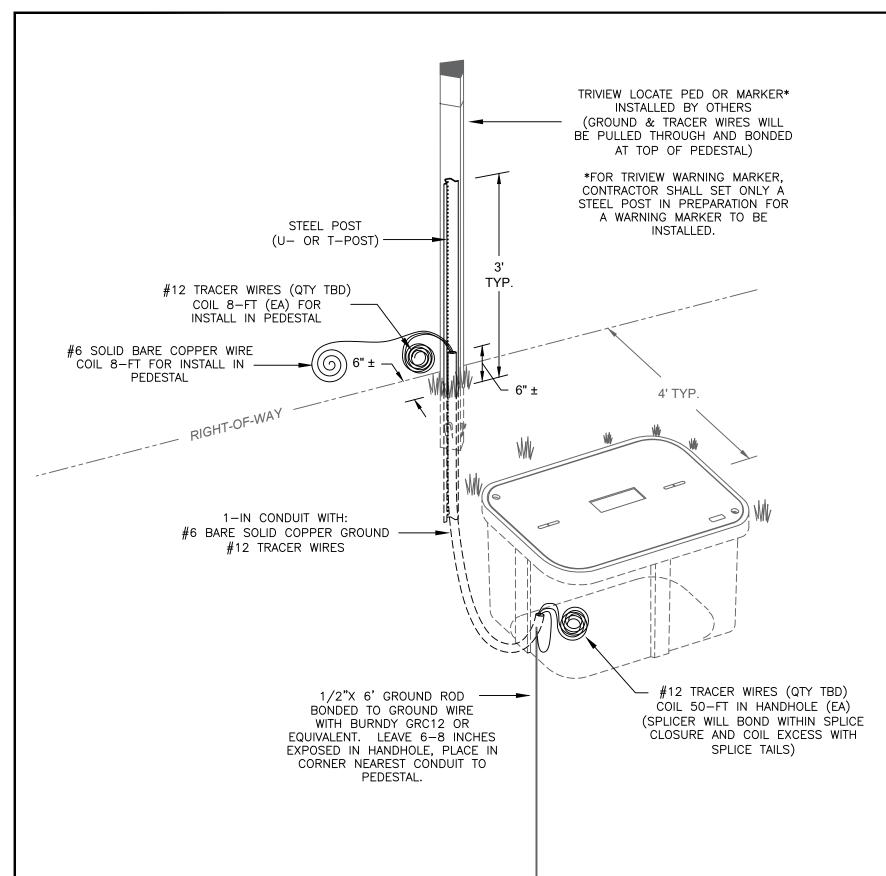
### CONSTRUCTION DOCUMENT



NEW CONSTRUCTION BETWEEN AMES & NEVADA STORY CO - HWY 30, 600TH, 250TH, & 610TH

IOWA. NEW CONSTRUCTION 7-22-25 IOWA COMMUNICATIONS NETWORK 400 EAST 14TH STREET GRIMES STATE OFFICE BUILDING DES MOINES, IOWA 50319 SCALE: 1" = 100' SIZE: 11 x 17 CONSTRUCTION PAGE 13 OF 14

FILE: R:\OSP PROJECTS\DALEN\All Counties\00230307 BOREAS Group Network Configuration Options\85250807 — Story Co — BOREAS — Lumen Tie—In Nevada To Ames ISU Vet Med — New Construction\ICN RELO PLANS\852508097 PROBEOT, DOC #:0852508007 Plank.dwkk NAME: NEW



CONTRACTOR TO PROVIDE AND PLACE THE FOLLOWING MATERIAL 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** 

SIZE: 11 x 17

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.

CONTRACTOR TO PROVIDE AND PLACE THE FOLLOWING MATERIAL IN PREPARATION FOR THE INSTALLATION OF A TRIVIEW WARNING MARKER (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