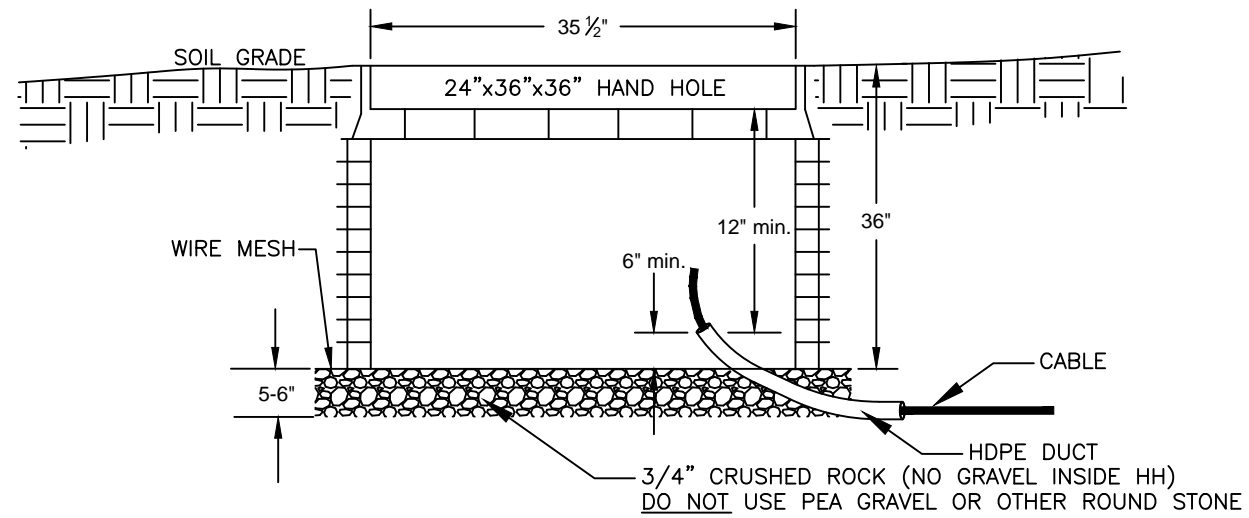


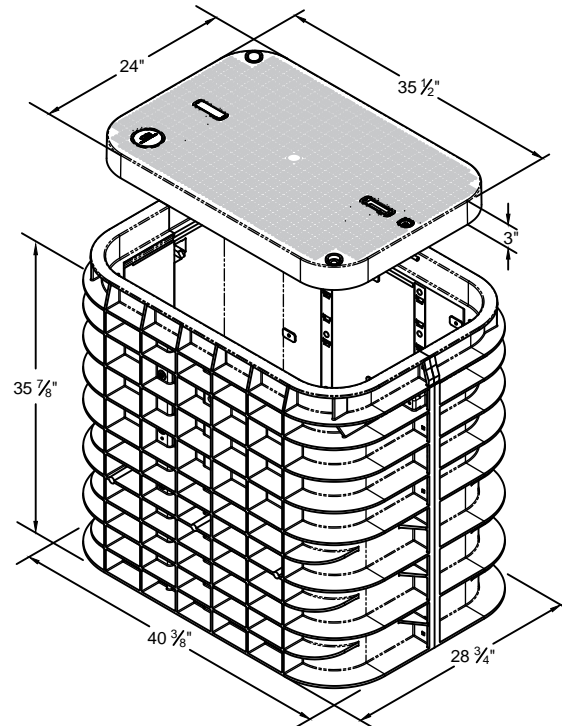
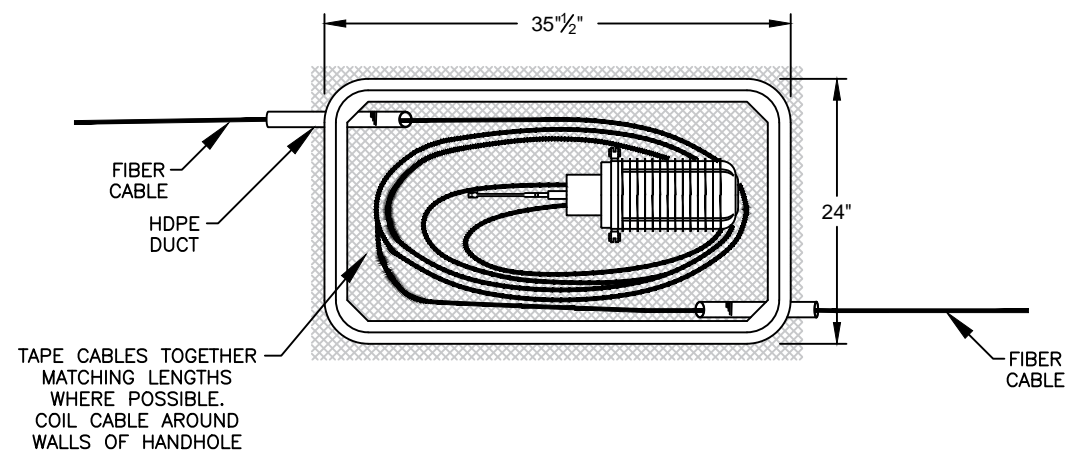
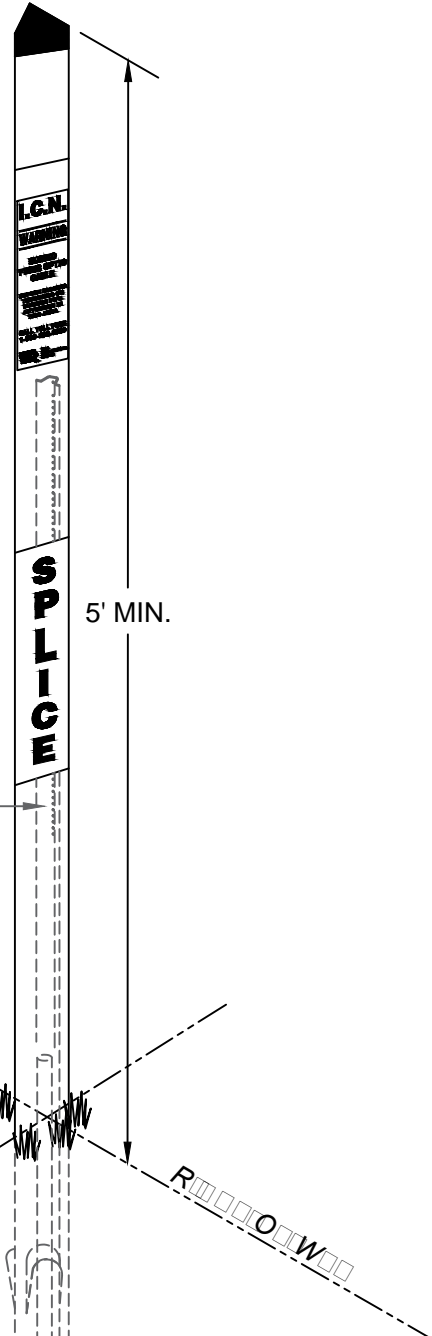
HANDHOLE PLACEMENT TYPICAL

24" X 36" X 36" HAND HOLE

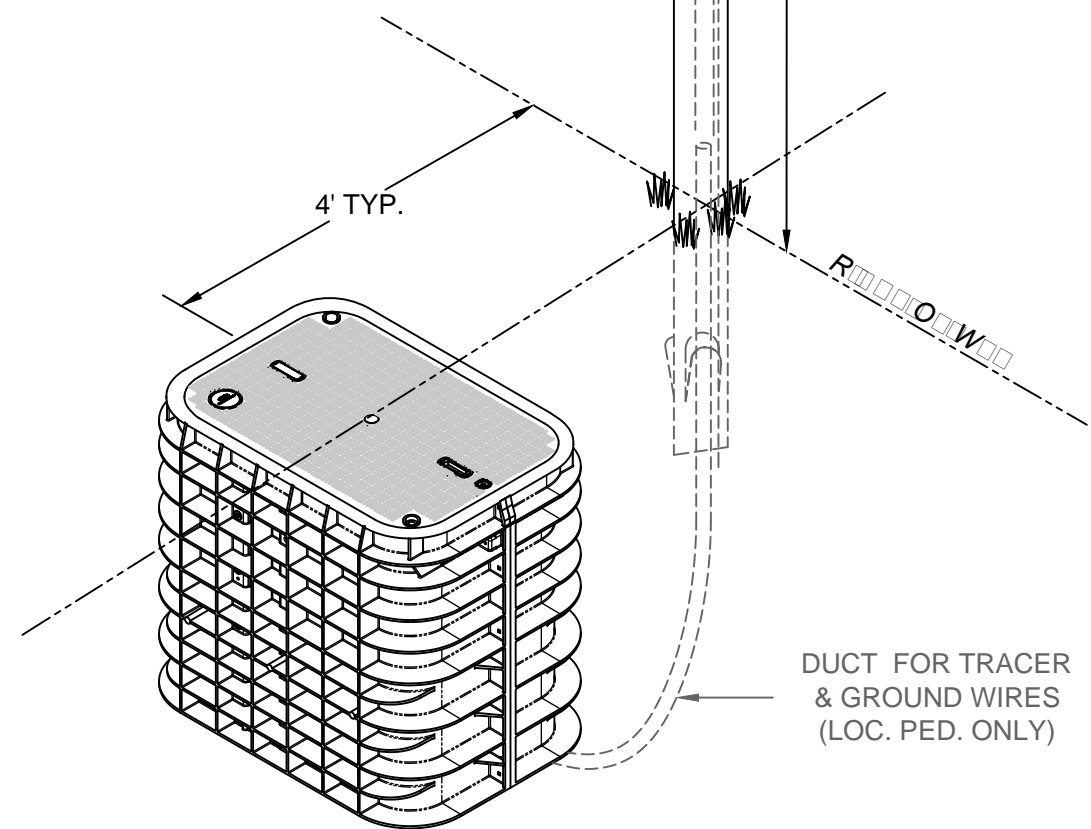


SEE INSTALLATION INSTRUCTIONS FOR PROPER PLACEMENT OF CHANNEL BULK HANDHOLE

TYPICAL TRIVIEW LOCATE PEDESTAL OR WARNING MARKER



BULK HANDHOLE TYPICAL 24"X36"X36"



IOWA COMMUNICATIONS NETWORK

GRIMES STATE OFFICE BUILDING
400 EAST 14TH STREET
DES MOINES, IOWA 50319
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CONSTRUCTION DETAIL
HANDHOLE TYPICAL - ICN STANDARD
24" x 36" x 36"

TYPICAL BULK HANDHOLE

SCALE: NONE

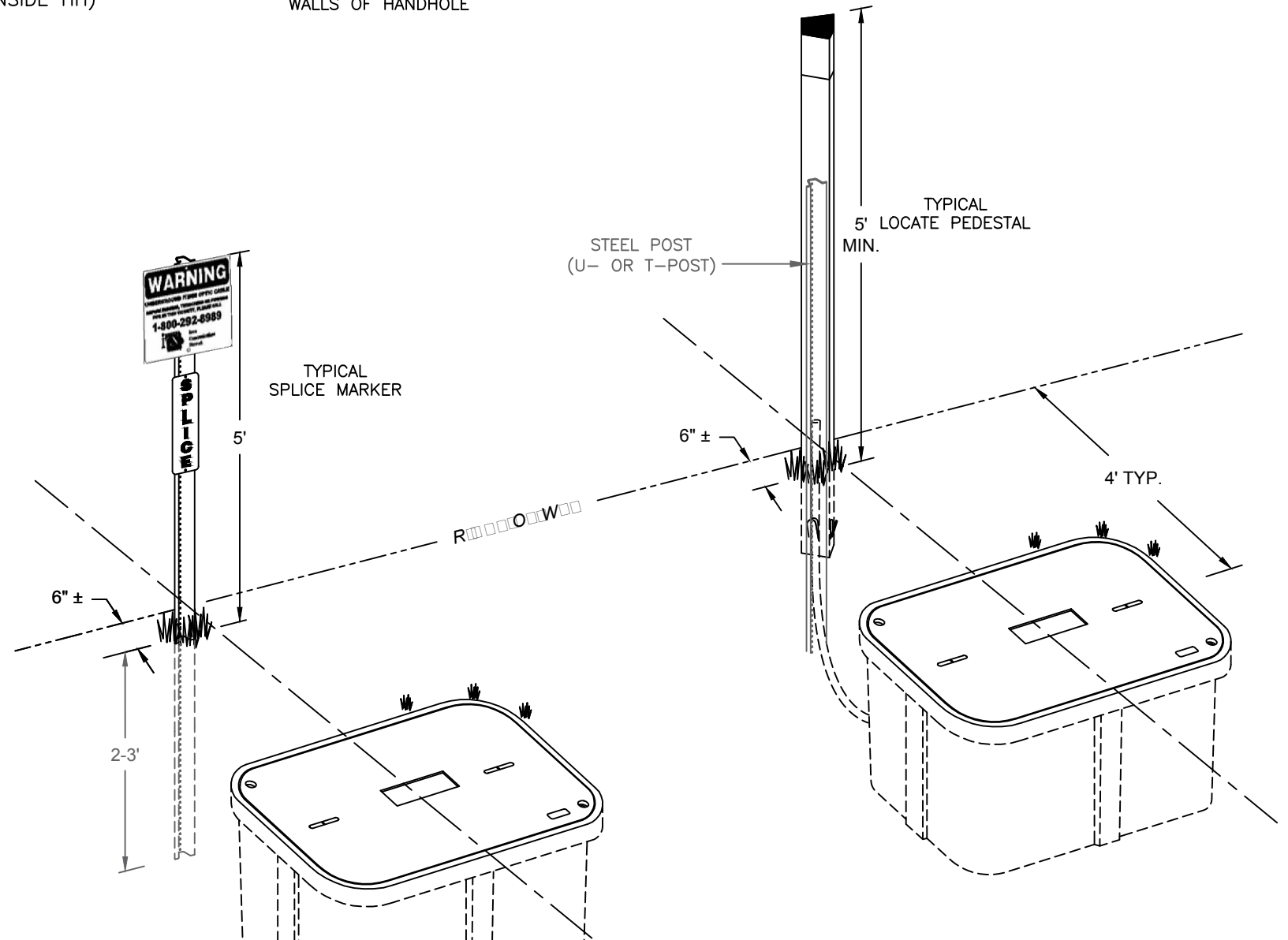
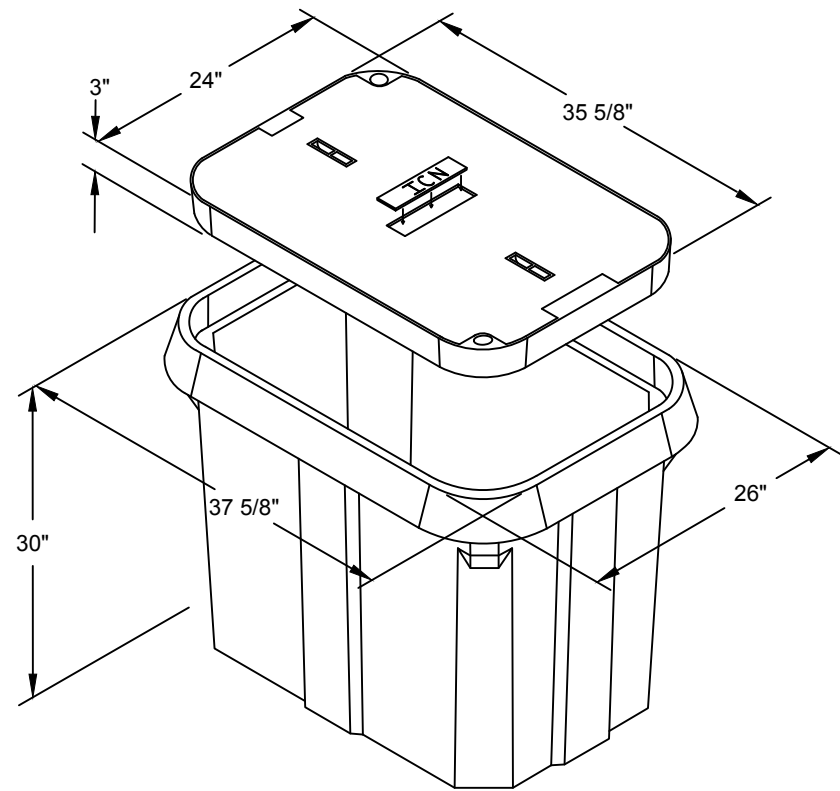
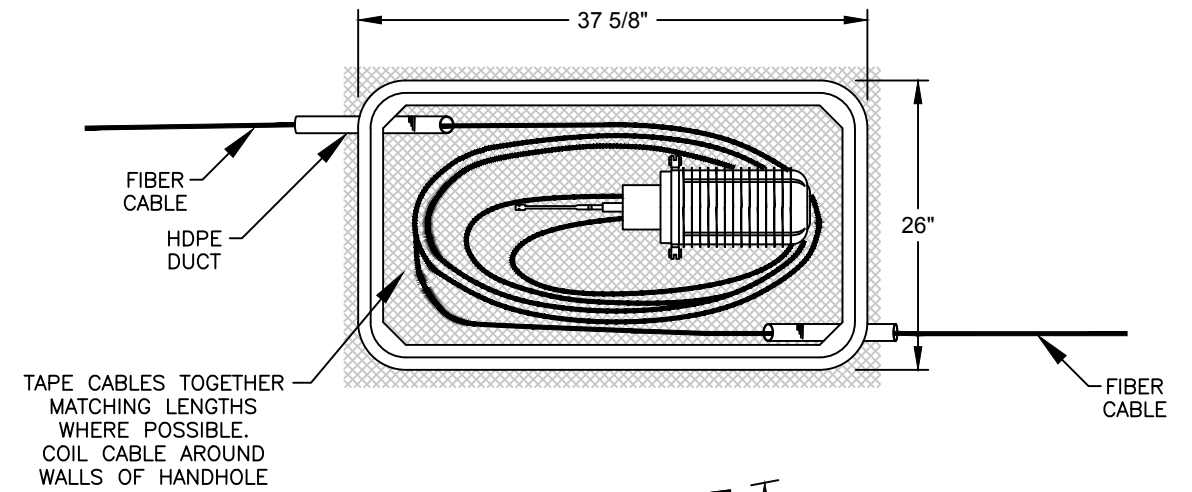
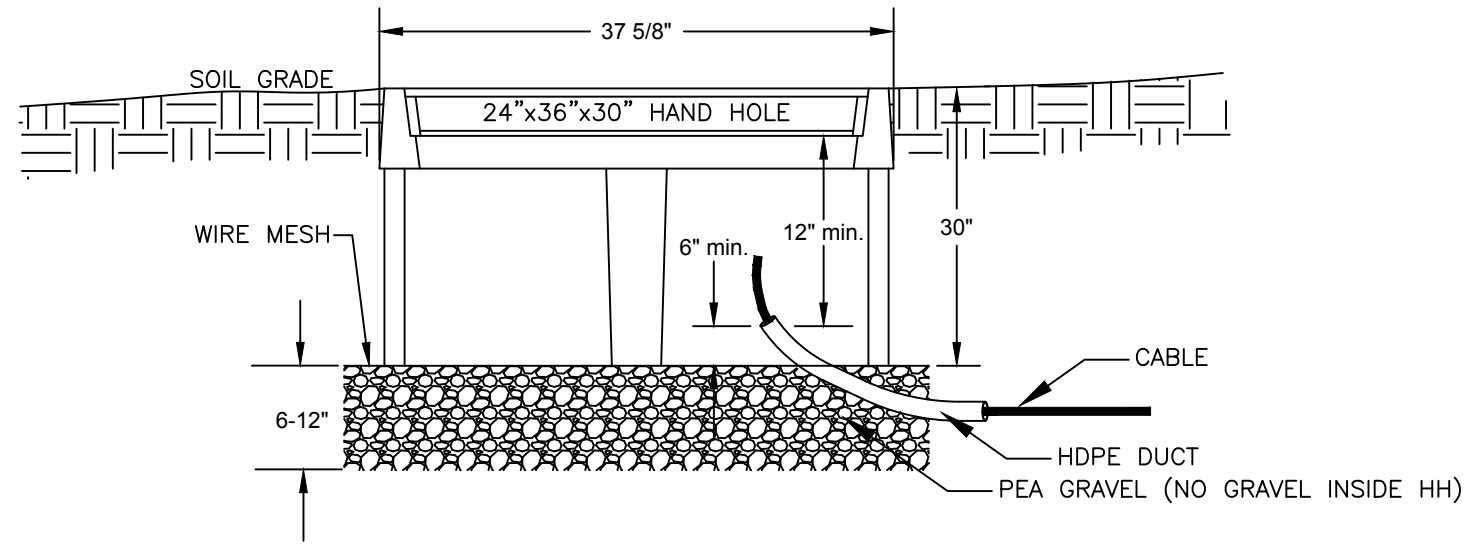
SIZE: 11 x 17

1	ISSUE	5-21-18	5
2	REVISION	7-19-18	6
3			7
4			8

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HANDHOLE PLACEMENT TYPICAL

24" X 36" X 30" HAND HOLE



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CONSTRUCTION DETAIL
HANDHOLE TYPICAL - ICN STANDARD
24" x 36" x 30"

TYPICAL HANDHOLE

SCALE: NONE

SIZE: 11 x 17

1	REVISION	3-27-12	5	REVISION	8-19-16
2	REVISION	7-16-14	6	REVISION	8-24-16
3	REVISION	11-10-14	7	REVISION	12-11-17
4	REVISION	8-21-15	8	REVISION	7-19-18

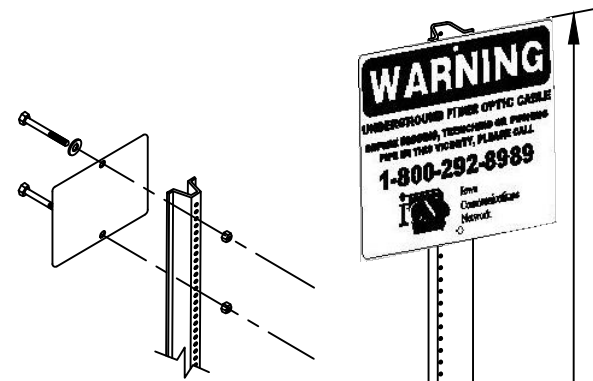
O:\AutoCAD Standards\TYPICALS\TYPICAL-HH PLACEMENT.dwg

WARNING MARKER INSTALLATION DETAIL

METAL SIGN & U-CHANNEL POST

FIBERGLASS MARKER

TRIVIEW MARKER



5'

3'±

6" ±

ROW

EACH 9" x 12" METAL WARNING SIGN SHALL BE ATTACHED AS FOLLOWS:

- TWO: 1/4-20 x 2 SS HEX HEAD BOLT
- TWO: 1/4 SS FLAT WASHER
- TWO: 1/4-20 SS NYLON INSERT LOCK NUT



5'

6" ±

ROW



5'

3'±

6" ±

ROW

POST



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CONSTRUCTION DETAIL
WARNING MARKER - TYPICAL
METAL, FIBERGLASS, & TRIVIEW
TYPICAL WARNING MARKERS

SCALE: NONE

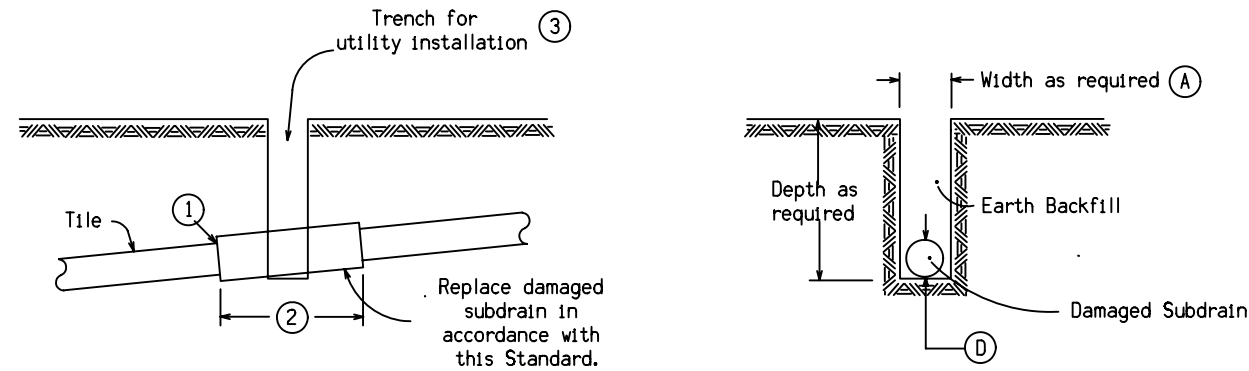
SIZE: 11 x 17

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2	REVISION	8-25-16	6	
3			7	
4			8	

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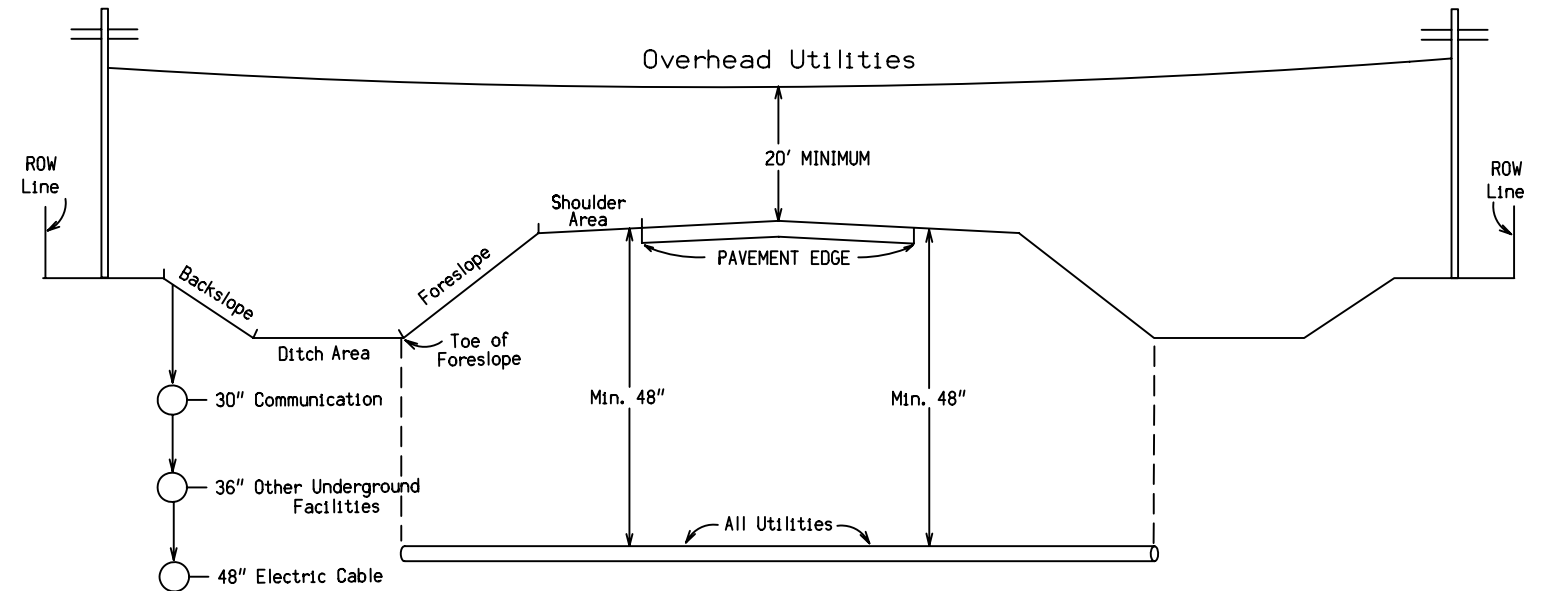
Tile Line Repair Guideline

Minimum Policy Requirements Rural Section Non-Freeway Highway



Note:
Replacement of drainage tile shall be accomplished so as to cause the minimum of disturbance to existing field tile. The repaired drainage tile shall be left in a functional condition with special emphasis placed on maintaining existing flow line elevations.

Ⓐ = A minimum of 24" shall be excavated outside the normal utility trench wall or such greater width as may be required to expose a minimum of 12" of undamaged drain tile.



Notes:
Utilities shall be located between the toe of foreslope and the highway row line. Utilities should be located as near to the highway row line as practical. See Utility Policy, Section 115.13 for further details.

REPLACEMENT SCHEDULE - CASE 'A'										
Existing Tile ⓐ	4	6	8	10	12	15	18	21	24	>24
Proposed Subdrain Size										
Concrete Pipe	-	-	12	15	15	18	21	24	30	D+6"
Coated C.M.P.	10	12	15	18	21	24	30	36	36	*

* Replacement sizes provide equivalent capacity based on 6" settlement assuming a 0.20% slope with n = 0.013 for concrete pipe and n = 0.025 for corrugated pipe (Manning Formula)

NOTES:
Tile lines disturbed within the right-of-way (outside the Roadway Embankment Area *) limits shall be repaired as follows:

May be repaired with schedule 40 PVC pipe of compatible size or in accordance with the replacement schedule-case 'A' as listed above. Replacement with schedule 40 PVC pipe shall require using a connecting device of a Femco plain and plain flexible pipe coupling or equal.

Tile lines disturbed within the "Roadway Embankment Area" shall be repaired in accordance with the replacement schedule - case 'A' stated above and as follows:

① Concrete collar to be placed around joint where existing tile line and corrugated aluminized metal pipe connect.

② Minimum length of corrugated metal pipe shall be 4 feet. Minimum length of 2 feet on each side of the tile line break location.

③ Trench shall be backfilled with 8 inches loose material, compacted to 6 inches with a minimum of 95% compaction of natural density.

A. Backfill and compact area around drain tile to be completed by hand until new tile is completely covered. Remainder of the trench shall be backfilled by acceptable methods.

B. Area shall require inspection by the Iowa Department of Transportation inspectors or their designated personnel prior to backfilling of trench.

* "Roadway Embankment Area" is defined as the area lying between the foreslopes of a two-lane roadway and from near foreslope to far foreslope of a four lane roadway.

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1	IDOT	3-28-12	SCALE:	SIZE: 11 x 17
			TILE REPAIR & REQ'D HEIGHT/DEPTH RURAL	
			IDOT-RURAL	