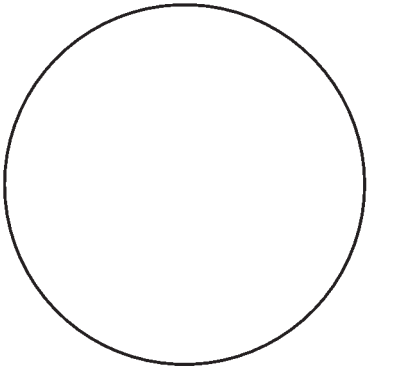


CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



MANHOLE LID DETAILS

CAMPGROUND RENOVATION AND ENTRANCE PORTAL FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
17-02-08-02

CHK'D BY: DATE:

SHEET No:

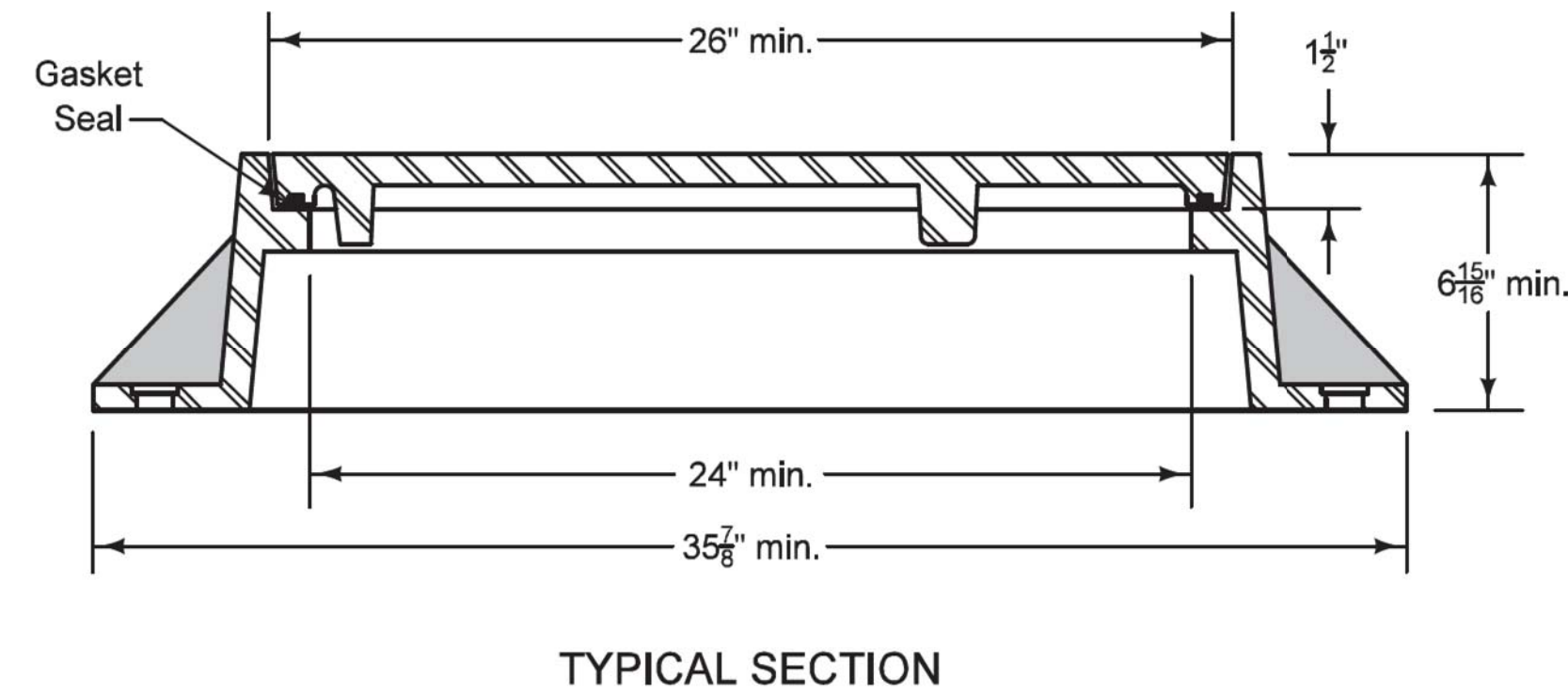
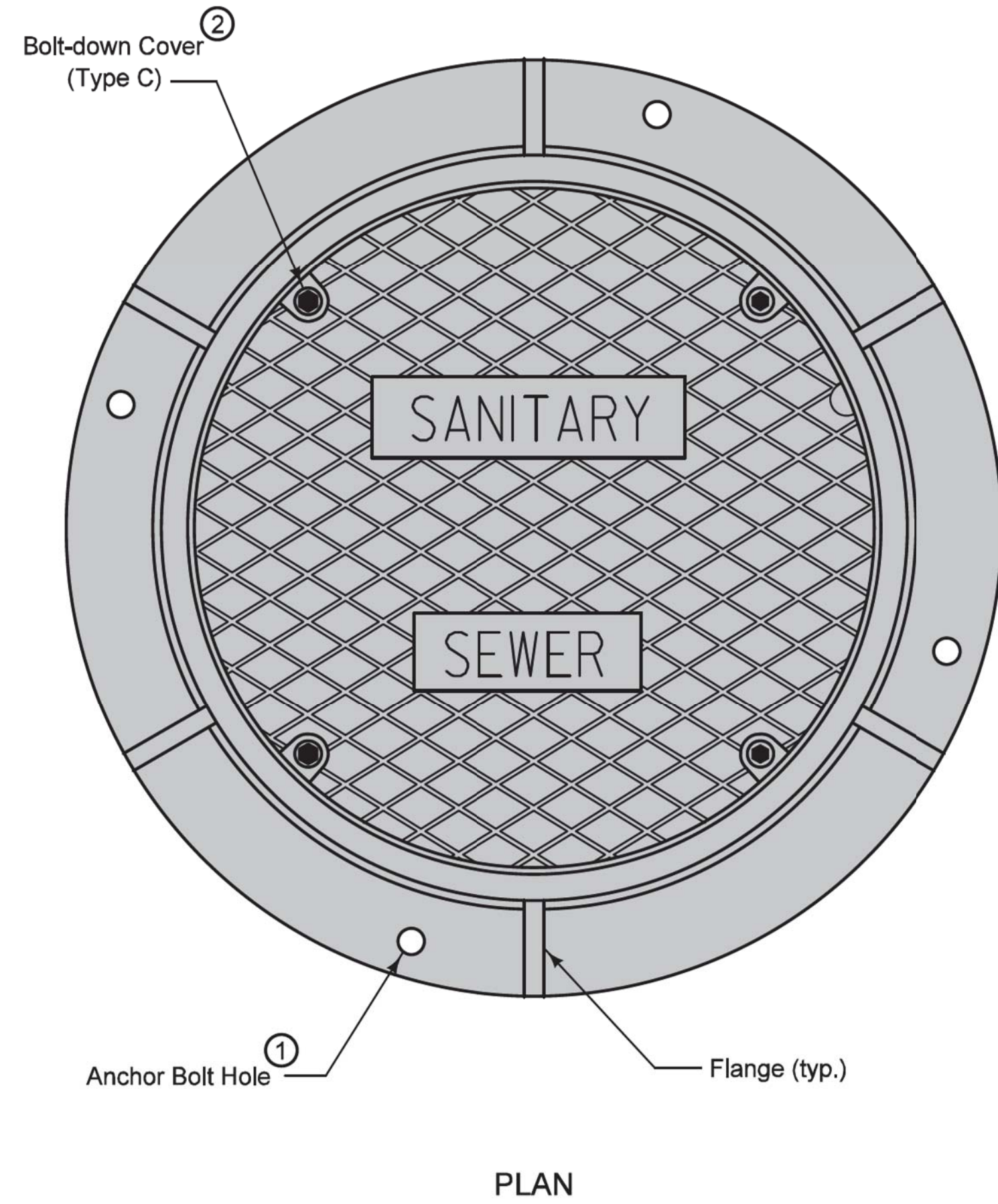
B.07

TYPE A

Two-piece fixed casting

TYPE C

Two-piece fixed casting with bolt-down cover ②

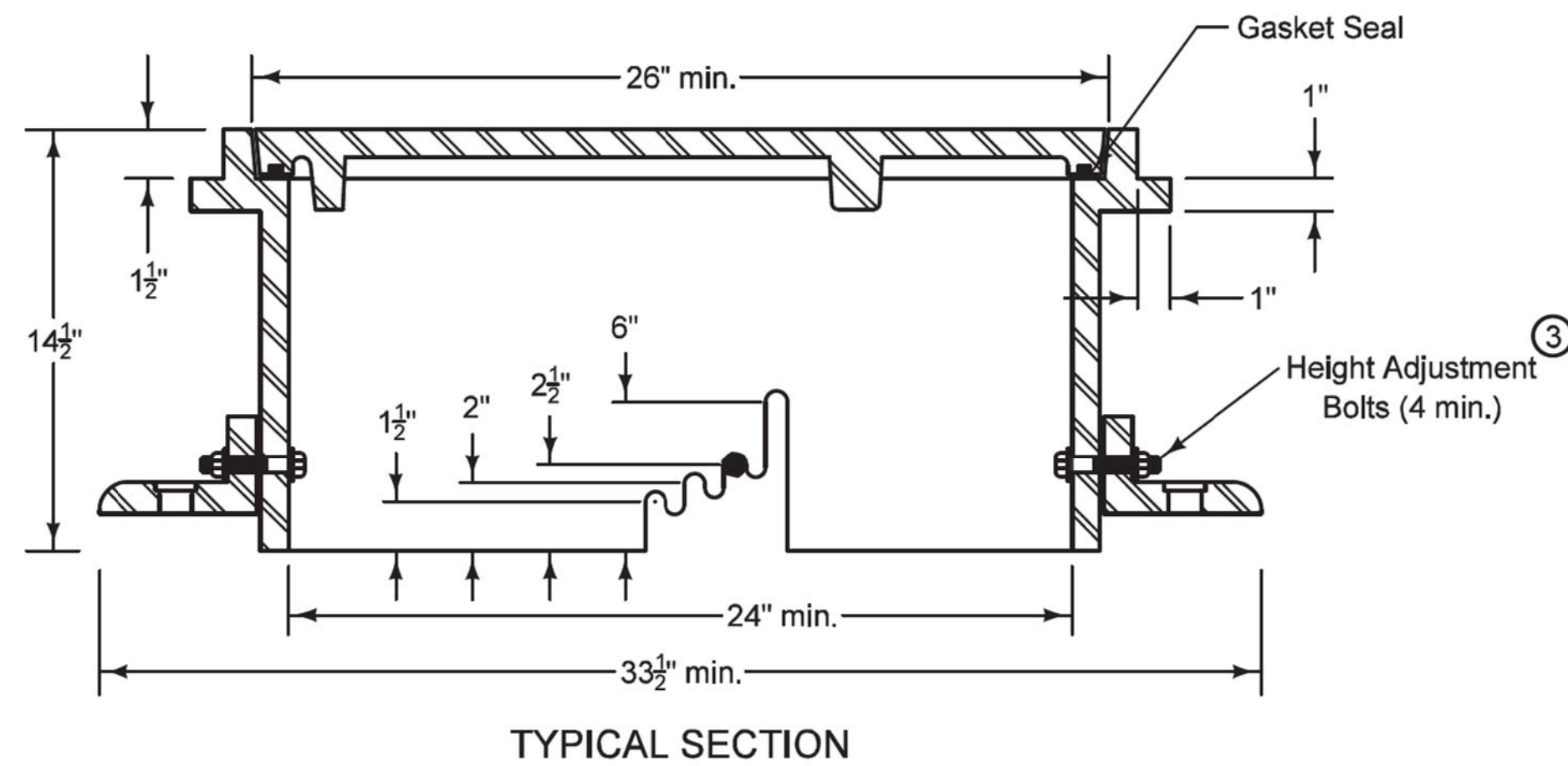
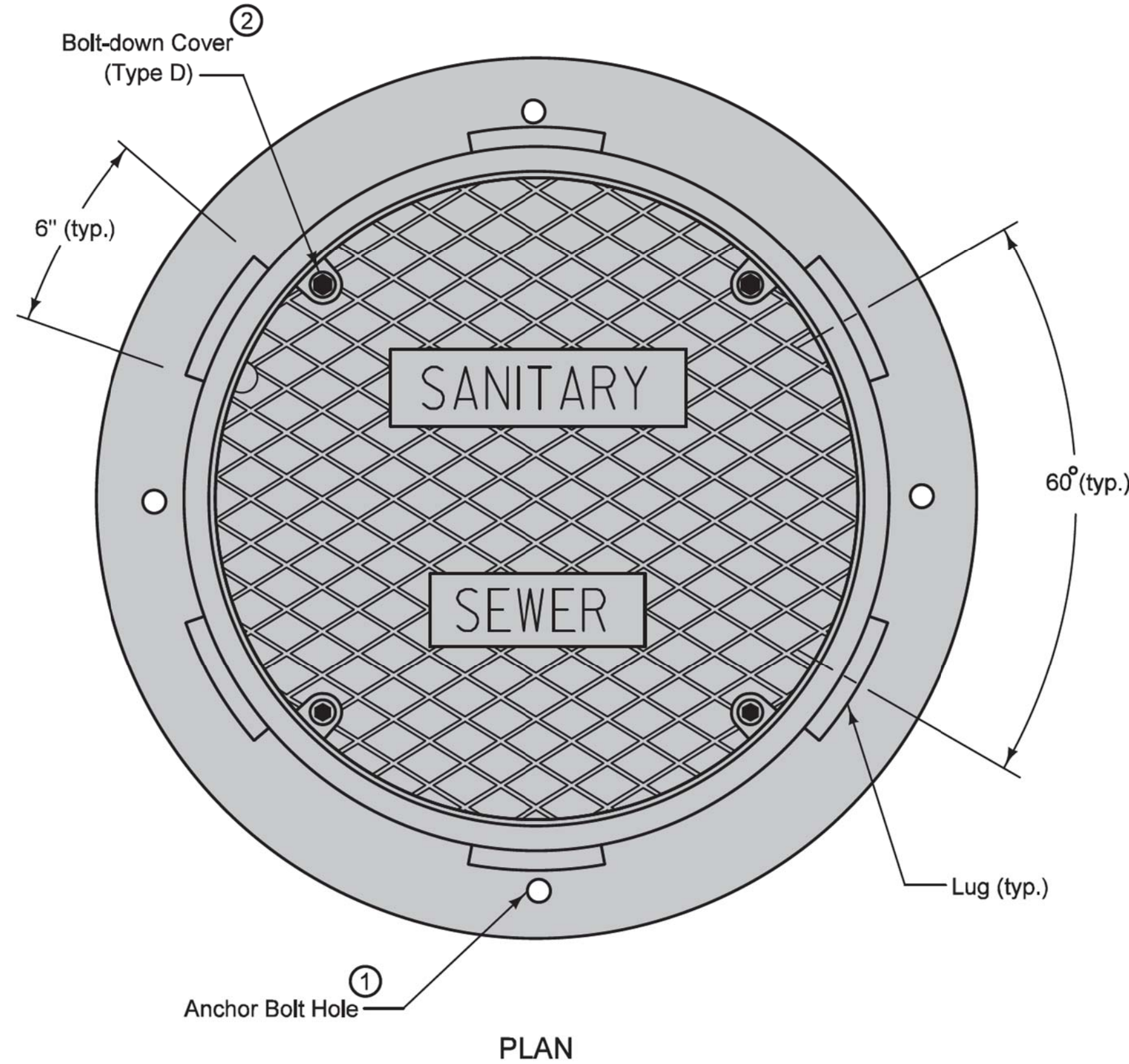


TYPE B

Three-piece floating casting

TYPE D

Three-piece floating casting with bolt-down cover ②



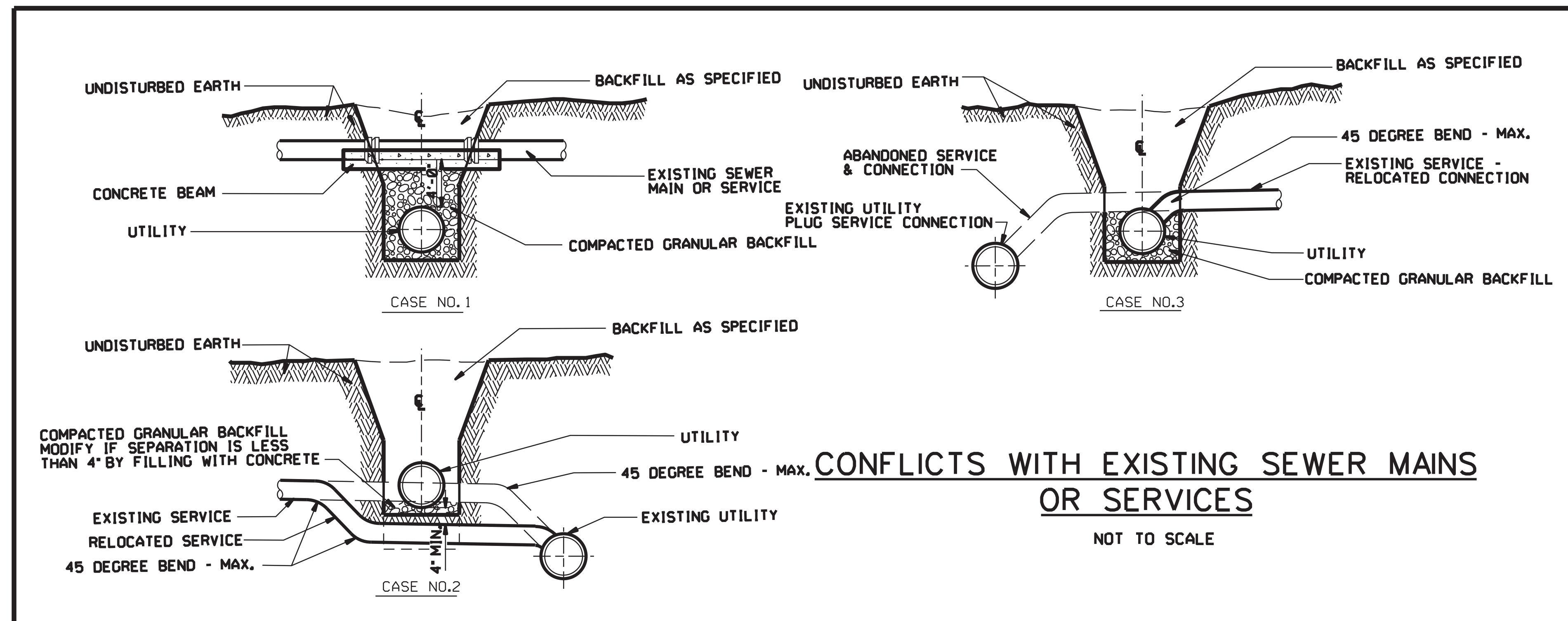
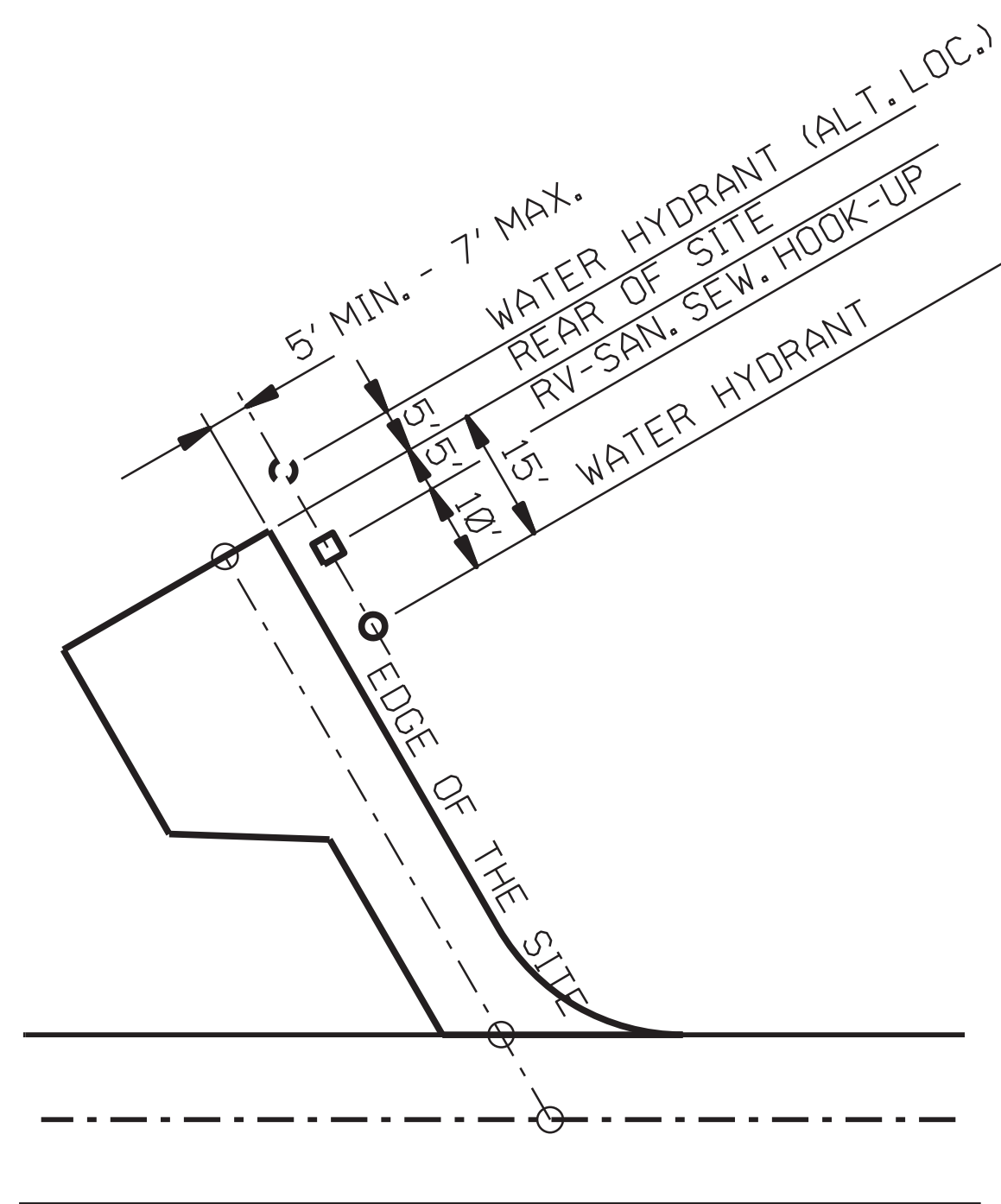
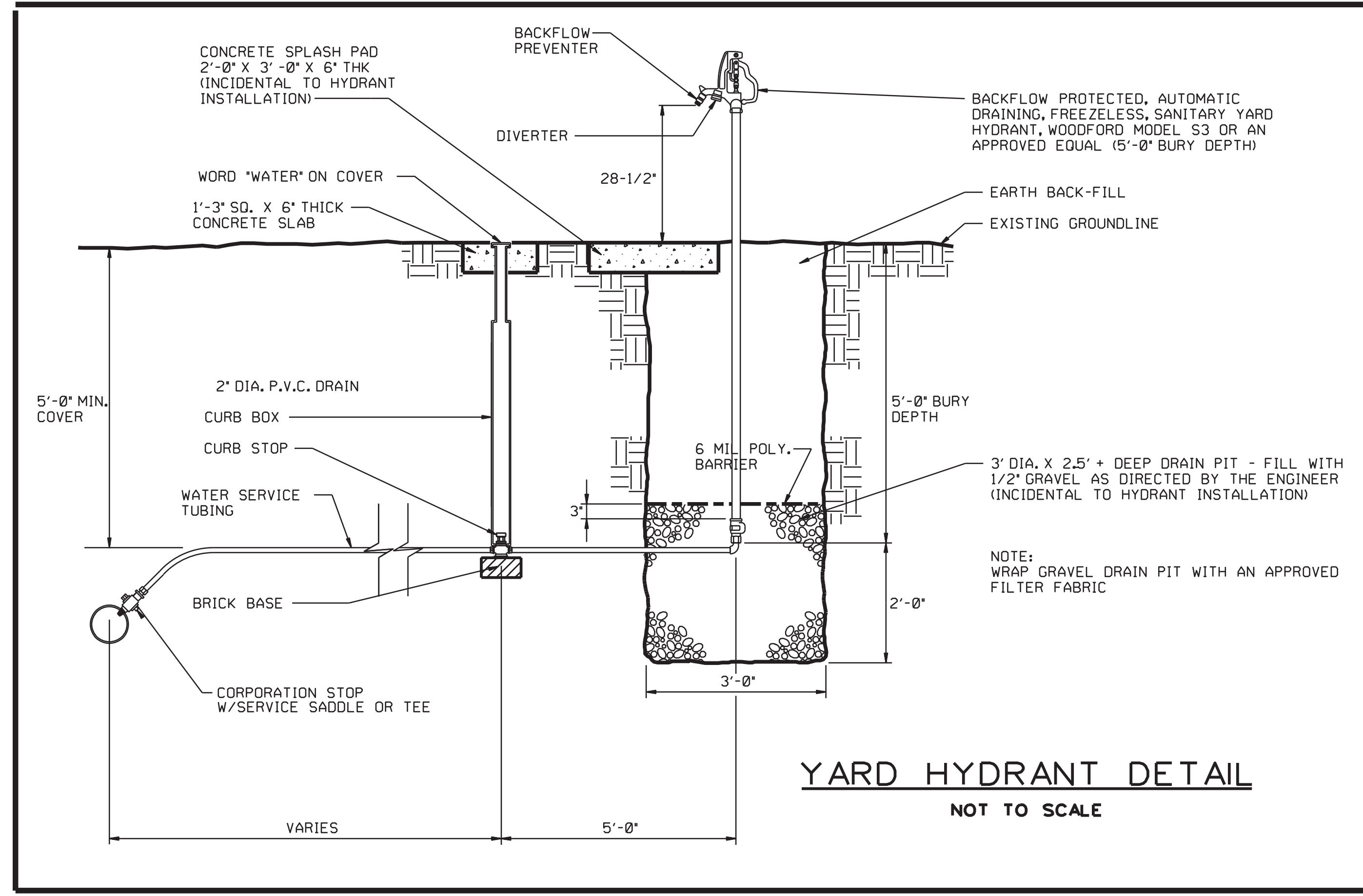
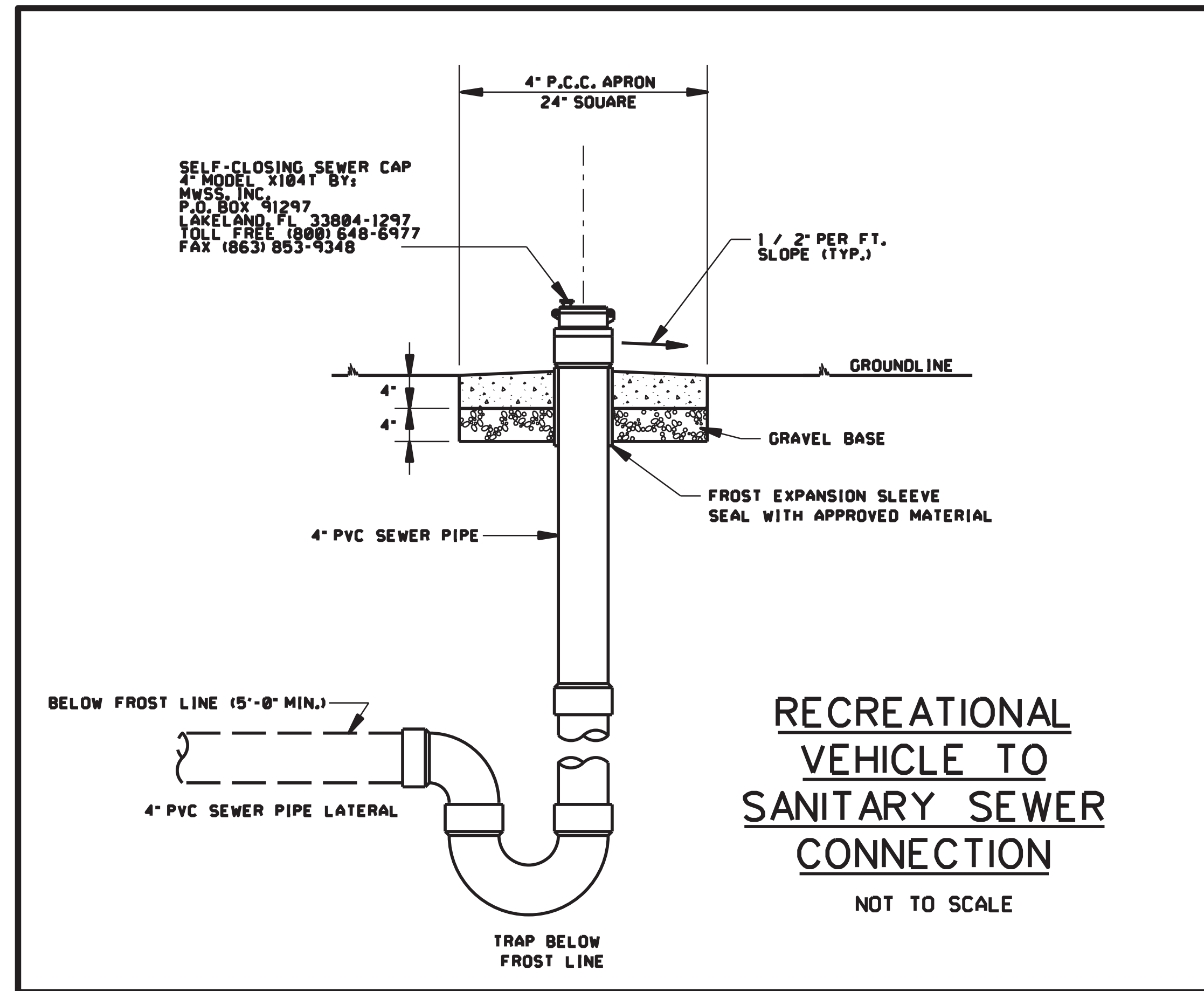
Frame Notes:
Size and spacing of lugs and flanges
may vary.

Cover Notes:
Roughness pattern and text style may
vary.
Minimum one concealed pickhole.

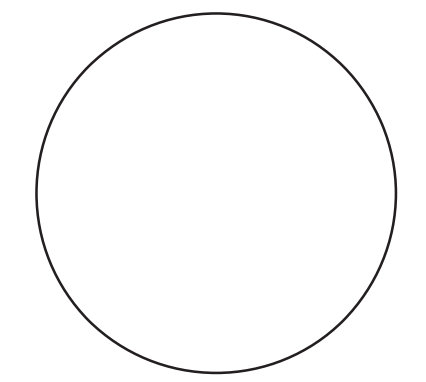
- ① When the contract documents require the frame to be attached to the structure, drill four 7/8" diameter holes or slots, equally spaced around frame.
- ② If specified, furnish bolt down frame and cover with four 1/2" x 2 1/2" stainless steel, hex head, recessed cap screws. Secure cover with screws, washers, and rubber gasket seals.
- ③ Set casting at proper grade using one of the adjustment slots. Remove bolts upon completion of paving.

SUDAS	IOWADOT	REVISION 3 04-21-15
FIGURE 6010.601	STANDARD ROAD PLAN	SW-601
SHEET 1 of 1		
REVISIONS: Minor revision to depict adjustability of TYPE B and TYPE D casting. Modified circle note 3.		
<i>Paul D. Wigand</i> SUDAS DIRECTOR		<i>Brian Smith</i> DESIGN METHODS ENGINEER
CASTINGS FOR SANITARY SEWER MANHOLES		

FIGURE 6010.601 SHEET 1 OF 1



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IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



SEWER & WATER DETAILS

CAMPGROUND RENOVATION AND ENTRANCE PORTAL FOR:

LEDGES STATE PARK

BOONE COUNTY

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DATE

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SHEET No:

B.08

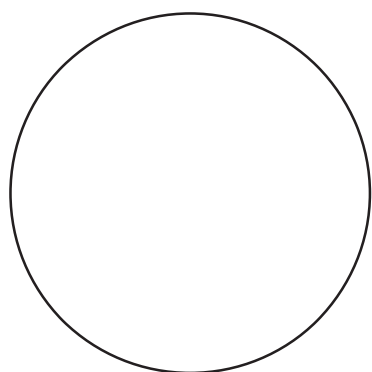
ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
1	MOBILIZATION	L.S.	1
2	TREE REMOVAL	L.S.	1
3	CLEARING AND GRUBBING	L.S.	1
4	EXCAVATION CLASS 10, 6" CAMP PAD CORE OUT	C.Y.	1,556
5	MACADAM STONE, 4" DEPTH	TONS	1,802
6	3/8 MINUS CRUSHED STONE, 2" DEPTH	TONS	1,000
7	ENGINEERING FABRIC	S.Y.	9,338
8	REMOVE AND DISPOSE OF WOOD R.R. TIE EDGING	EA.	5
9	2" PVC SDR 21 WATER LINE	L.F.	1,187
10	1" HDPE WATER LINE	L.F.	350
11	2 1/2" FLUSHING HYDRANT	EA.	3
12	YARD HYDRANT	EA.	15
13	DETECTABLE WARNING TAPE, 3" WATER	L.F.	1,537
14	6" X 6" X 4" PVC WYES	EA.	23
15	CURB STOP/VALVE BOX	EA.	15
16	CORPORATION STOP	EA.	15
17	4" X 2" TEES	EA.	2
18	SYSTEM DISINFECTION	L.S.	1
19	6" SDR 35 PVC SEWER PIPE	L.F.	980
20	4" SDR 35 PVC SEWER PIPE	L.F.	570
21	DETECTABLE WARNING TAPE, 3" SEWER	L.F.	1,904
22	1 1/2" SDR 11 HDPE SEWER PIPE	L.F.	354
23	DUPLEX GRINDER PUMP STATION WITH CONTROL AND ALARM PANEL, COMPLETE	L.S.	1
24	SANITARY SEWER CLEANOUT ASSEMBLY	EA.	12
25	RV SEWER CLEANOUT ASSEMBLY	EA.	15
26	MANHOLE, COMPLETE	L.S.	1
27	EXCAVATION CLASS 10, 12" CORE OUT	C.Y.	504
28	SPECIAL BACKFILL, 6" DEPTH	C.Y.	476
29	HOT MIX ASPHALT STANDARD TRAFFIC, 2" BASE COURSE, 3/4 IN. MIX	TONS	168
30	HOT MIX ASPHALT STANDARD TRAFFIC, 2" INTERMEDIATE COURSE, 3/4 IN. MIX	TONS	168
31	HOT MIX ASPHALT STANDARD TRAFFIC, 2" SURFACE COURSE, 1/2 IN. MIX	TONS	168
32	ASPHALT BINDER, PG 58-28S	TONS	51
33	ROAD WIDENING	L.S.	1
34	PAD MOUNTED 800 AMP DISTRIBUTION PANEL AND CT CABINET & CONNECTIONS COMPLETE	EA.	1
35	PAD MOUNTED 600 AMP DISTRIBUTION PANEL AND CT CABINET & CONNECTIONS COMPLETE	EA.	2
36	PAD MOUNTED 400 AMP DISTRIBUTION PANEL AND CT CABINET & CONNECTIONS COMPLETE	EA.	2
37	SINGLE CAMPSITE OUTLET POST - 50 AMP	EA.	68
38	DOUBLE CAMPSITE OUTLET POST - 50 AMP	EA.	2
39	NO. 8 AWG GROUNDING CONDUCTOR CABLE, TYPE THW OR USE	L.F.	255
40	NO. 6 AWG GROUNDING CONDUCTOR CABLE, TYPE THW OR USE	L.F.	820
41	NO. 4 AWG GROUNDING CONDUCTOR CABLE, TYPE THW OR USE	L.F.	472
42	NO. 2 AWG GROUNDING CONDUCTOR CABLE, TYPE THW OR USE	L.F.	5,157
43	NO. 4 AWG SINGLE CONDUCTOR CABLE, TYPE USE	L.F.	765
44	NO. 1/0 AWG SINGLE CONDUCTOR CABLE, TYPE USE	L.F.	2,460
45	NO. 2/0 AWG SINGLE CONDUCTOR CABLE, TYPE USE	L.F.	210
46	NO. 4/0 AWG SINGLE CONDUCTOR CABLE, TYPE USE	L.F.	9,349
47	NO. 250 MCM SINGLE CONDUCTOR CABLE, TYPE USE	L.F.	1,188
48	NO. 300 MCM SINGLE CONDUCTOR CABLE, TYPE USE	L.F.	2,475
49	NO. 350 MCM SINGLE CONDUCTOR CABLE, TYPE USE	L.F.	2,757
50	ROADWAY CROSSING CONDUIT - SCHEDULE 80 PVC	L.F.	164
51	DETECTABLE WARNING TAPE, 3" ELECTRIC	L.F.	5,447
52	TRENCH, SINGLE CIRCUIT SECONDARY	L.F.	5,528
53	REMOVE AND DISPOSE OF LOW LEVEL LIGHTING BOLLARDS	EA.	12
54	REPLACE HPS LIGHTS W/LED FIXTURES	EA.	5
55	ENTRANCE PORTAL, COMPLETE	L.S.	1
56	SEEDING, FERTILIZING AND MULCHING	L.S.	1

ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
2	A. CONTRACTOR SHALL REMOVE TREES BEFORE MARCH 31, 2018 AS DIRECTED BY DNR ENGINEER.
3	A. CONTRACTOR SHALL CLEAR AND GRUB AREAS AS DIRECTED BY DNR ENGINEER.
4	A. CONTRACTOR SHALL CORE OUT CAMP PADS AS DIRECTED BY DNR ENGINEER.
8	A. CONTRACTOR SHALL REMOVE AND DISPOSE OF R.R. TIE EDGING AS DIRECTED BY DNR ENGINEER.
12	A. SEE PAGE B.08 FOR YARD HYDRANT DETAILS.
23	A. CONTRACTOR SHALL FURNISH AND INSTALL & TEST DUPLEX GRINDER PUMP STATION. B. DUPLEX GRINDER PUMP STATION SHALL BE E/ONE DH272-129 WITH E/ONE DUPLEX SENTRY PROTECT PLUS PANEL OR EQUIVALENT.
24	A. SEE PAGE B.05 FOR SANITARY SEWER CLEANOUT DETAILS.
25	A. SEE PAGE B.08 FOR RV SEWER CLEANOUT DETAILS.
26	A. SEE PAGE B.06 AND B.07 FOR MANHOLE AND LID DETAILS.
29	A. HMA BINDER CONTENT SHALL BE 6%.
30	A. HMA BINDER CONTENT SHALL BE 6%.
31	A. HMA BINDER CONTENT SHALL BE 6%.
33	A. SEE PAGE D.11
53	A. CONTRACTOR SHALL REMOVE AND DISPOSE OF LOW LEVEL LIGHTING BOLLARDS AND FOOTINGS AS DIRECTED BY DNR ENGINEER.
54	A. REPLACE HIGH PRESSURE SODIUM LIGHTS WITH BEACON LIGHTING - VIPER S LED SITE LIGHTS (VPS-48NB-110-4K-T4-UNV-PCR-TL-RA-DBT) OR EQUIVALENT.
55	A. SEE PAGES K.01 - K.05

CONSULTANT:



**IOWA DEPARTMENT OF
NATURAL RESOURCES**

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



QUANTITIES AND GENERAL INFORMATION

CAMPGROUND RENOVATION AND ENTRANCE PORTAL FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY	REVISION

DRAWN BY:	PROJECT NUMBER:
	17-02-08-02

CHK'D BY:	DATE:

SHEET No:

C.01

GENERAL NOTES

The contractor shall notify the following two weeks prior to construction:

1. District Inspector
Don Labate
(515)250-3714
2. Project Manager
Troy Duff
(515)250-3715

Verify actual locations and elevations with DNR Engineer.

All work shall conform to and be performed in accordance with all applicable codes and ordinances.

The contractor shall visit the site and inspect the project area and thoroughly familiarize themselves with the actual job conditions prior to bidding and the start of work. Failure to visit the project site shall not relieve the contractor from performing the work in accordance to the plans, specification, special provisions and contract.

The contractor shall verify, at the site, all dimensions and conditions shown on the plans and shall notify the DNR Engineer of any discrepancies, omissions, and/or conflicts prior to proceeding with the work.

It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project. No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans or approved by the DNR Engineer.

The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service areas will be subject to the approval of the DNR Engineer.

Where utilities and fixtures are shown as Existing on the plans or encountered within the construction area, it shall be the responsibility of the contractor to notify the DNR Engineer of those utilities prior to the beginning of any construction. The contractor shall be afforded access to these facilities for necessary modification of services. Underground facilities, structures and utilities have been plotted from available surveys and records and therefore their locations must be considered approximate only. It is possible there may be others, the existence of which is presently not known or shown. It is the contractor's responsibility to determine their existence and exact location and to avoid damage thereto. No claims for additional compensation will be allowed to the contractor for any interference or delay caused by such work.

The contractor shall shape graded area to maintain surface drainage. All elevations are to finish grade.

The contractor is expected to have materials, equipment, and labor available on a daily basis to install and maintain erosion control features on the project. This may involve seeding, silt fence, rock ditch checks, silt basins or silt dikes.

Sheet C.03 shows approximate locations of existing utilities.

The contractor shall remove trees necessary to widen the entrance road, construct the outer loop road and construct camp pads. Tree removal shall be completed by March 31, 2018. Trees to be disposed of as directed by DNR Engineer.

Camp pad construction will consist of coring out material at pad location, preparing subgrade, placing engineering fabric, 4" of macadam stone, and 2" of 3/8" minus crushed stone surfacing. The excavated material will be used to fill low areas and feather around camp pads, if suitable and as directed by DNR Engineer.

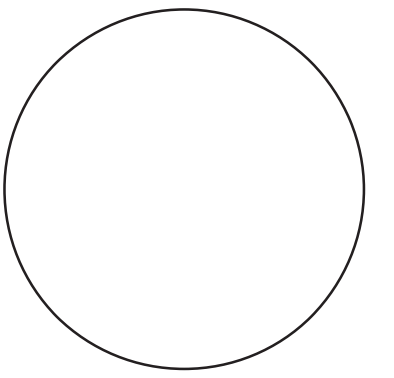
GENERAL NOTES

Some camp pads may need to be adjusted in length or alignment to avoid trees or other features. There are several existing camp pads that will only need a small amount of surfacing material and will be identified during construction by the DNR Engineer.

The contractor shall remove the low level lighting bollards as directed by the DNR Engineer. These will become property of the contractor and be hauled off-site.

The high pressure sodium light fixtures being replaced with LED fixtures will become property of the contractor.

CONSULTANT:



**IOWA DEPARTMENT OF
NATURAL RESOURCES**

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



GENERAL NOTES

CAMPGROUND RENOVATION AND ENTRANCE PORTAL FOR:

LEDGES STATE PARK

BOONE COUNTY

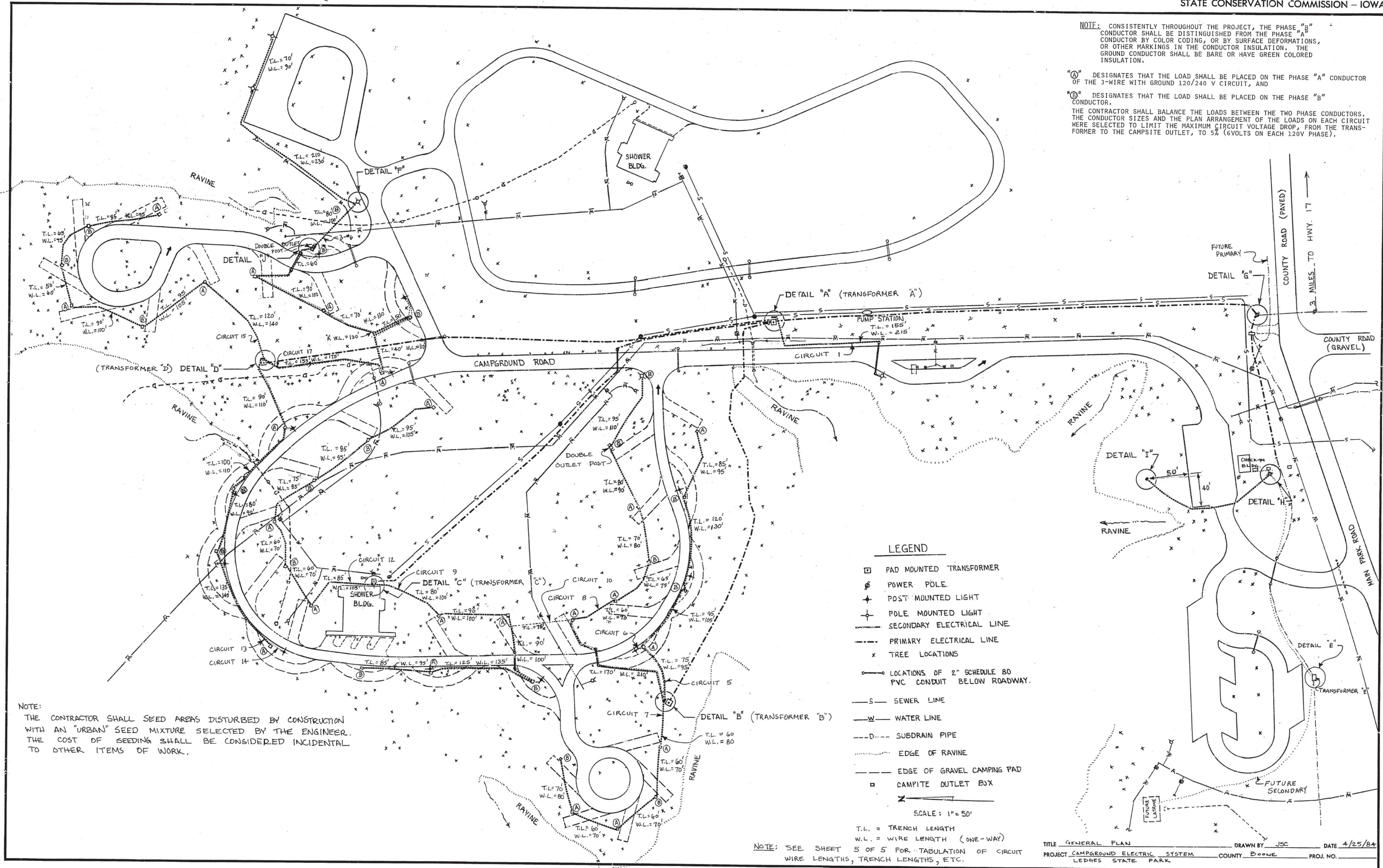
NO.	BY	REVISION
DATE		

DRAWN BY: PROJECT NUMBER:
17-02-08-02

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SHEET No:

C.02



NOTE: CONSISTENTLY THROUGHOUT THE PROJECT, THE PHASE "B" CONDUCTOR SHALL BE DISTINGUISHED FROM THE PHASE "A" CONDUCTOR BY COLOR CODING, OR BY SURFACE DEFORMATIONS, OR OTHER MARKINGS IN THE CONDUCTOR INSULATION. THE GROUND CONDUCTOR SHALL BE BARE OR HAVE GREEN COLORED INSULATION.

"A" DESIGNATES THAT THE LOAD SHALL BE PLACED ON THE PHASE "A" CONDUCTOR OF THE 3-WIRE WITH GROUND 120/240 V CIRCUIT, AND

"B" DESIGNATES THAT THE LOAD SHALL BE PLACED ON THE PHASE "B" CONDUCTOR.

THE CONTRACTOR SHALL BALANCE THE LOADS BETWEEN THE TWO PHASE CONDUCTORS. THE CONDUCTOR SIZES AND THE PLAN ARRANGEMENT OF THE LOADS ON EACH CIRCUIT WERE SELECTED TO LIMIT THE MAXIMUM CIRCUIT VOLTAGE DROP, FROM THE TRANSFORMER TO THE CAMPSITE OUTLET, TO 5% (6VOLTS ON EACH 120V PHASE).

NOTE:
THE CONTRACTOR SHALL SEED AREAS DISTURBED BY CONSTRUCTION WITH AN "URBAN" SEED MIXTURE SELECTED BY THE ENGINEER. THE COST OF SEEDING SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS OF WORK.

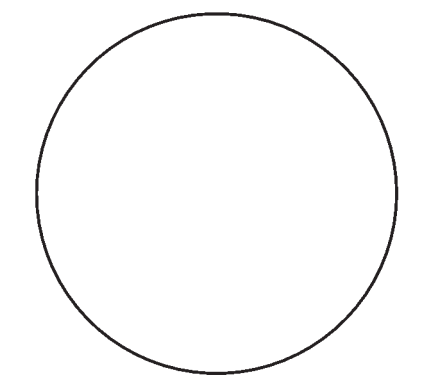
NOTE: SEE SHEET 5 OF 5 FOR TABULATION OF CIRCUIT WIRE LENGTHS, TRENCH LENGTHS, ETC.

LEGEND

- PAD MOUNTED TRANSFORMER
 - ⊕ POWER POLE
 - ⊕ POST MOUNTED LIGHT
 - ⊕ POLE MOUNTED LIGHT
 - SECONDARY ELECTRICAL LINE
 - PRIMARY ELECTRICAL LINE
 - x TREE LOCATIONS
 - LOCATIONS OF 2" SCHEDULE 80 PVC CONDUIT BELOW ROADWAY.
 - S SEWER LINE
 - W WATER LINE
 - SUBDRAIN PIPE
 - EDGE OF RAVINE
 - EDGE OF GRAVEL CAMPING PAD
 - CAMPSITE OUTLET BOX
- SCALE: 1" = 50'
- T.L. = TRENCH LENGTH
W.L. = WIRE LENGTH (ONE-WAY)

TITLE GENERAL PLAN
PROJECT CAMPGROUND ELECTRIC SYSTEM
LEDGES STATE PARK
DRAWN BY JSC
DATE 4/25/84
COUNTY BOONE
PROJ. NO.

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



HISTORICAL SITE PLAN

CAMPGROUND RENOVATION AND ENTRANCE PORTAL FOR:
LEDGES STATE PARK

BOONE COUNTY

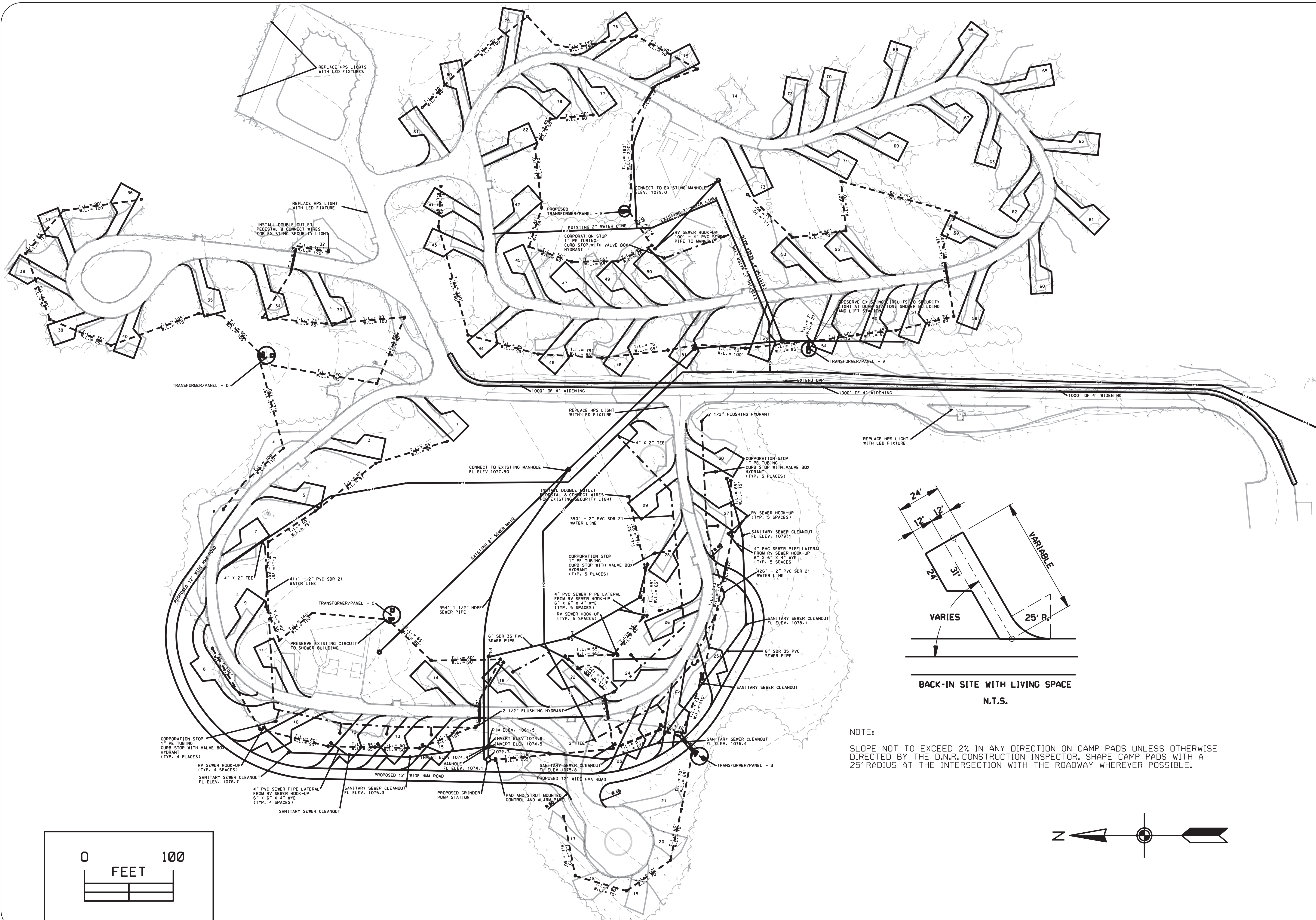
NO. BY REVISION

DRAWN BY: PROJECT NUMBER:
17-02-08-02

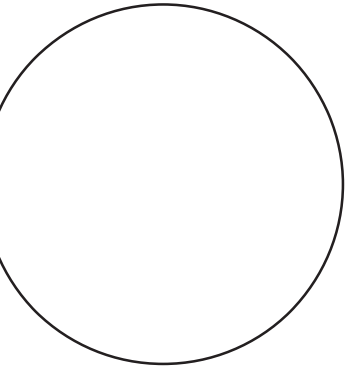
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SHEET NO.:

C.03



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ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



OVERALL SITE PLAN

CAMPGROUND RENOVATION AND ENTRANCE PORTAL FOR:

LEDGES STATE PARK

BOONE COUNTY

NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
17-02-08-02

CHK'D BY: DATE:

SHEET NO:

D.01

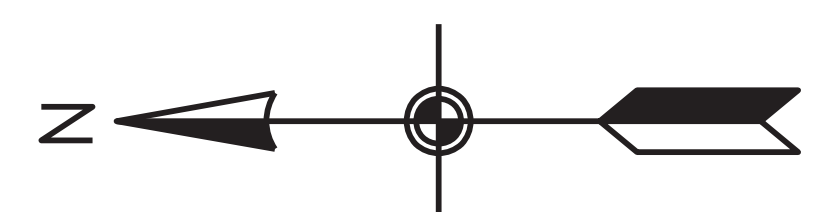
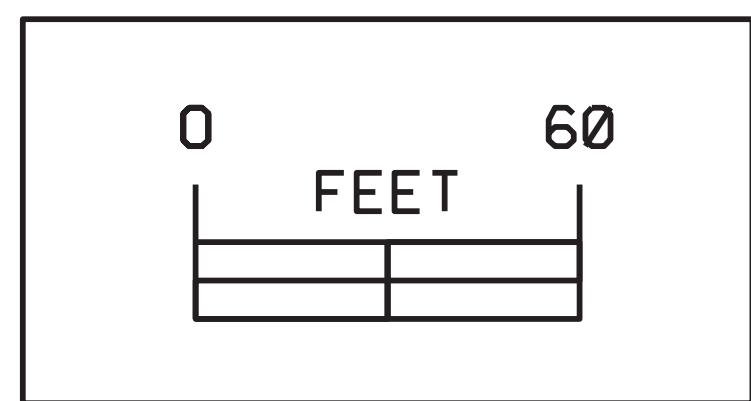
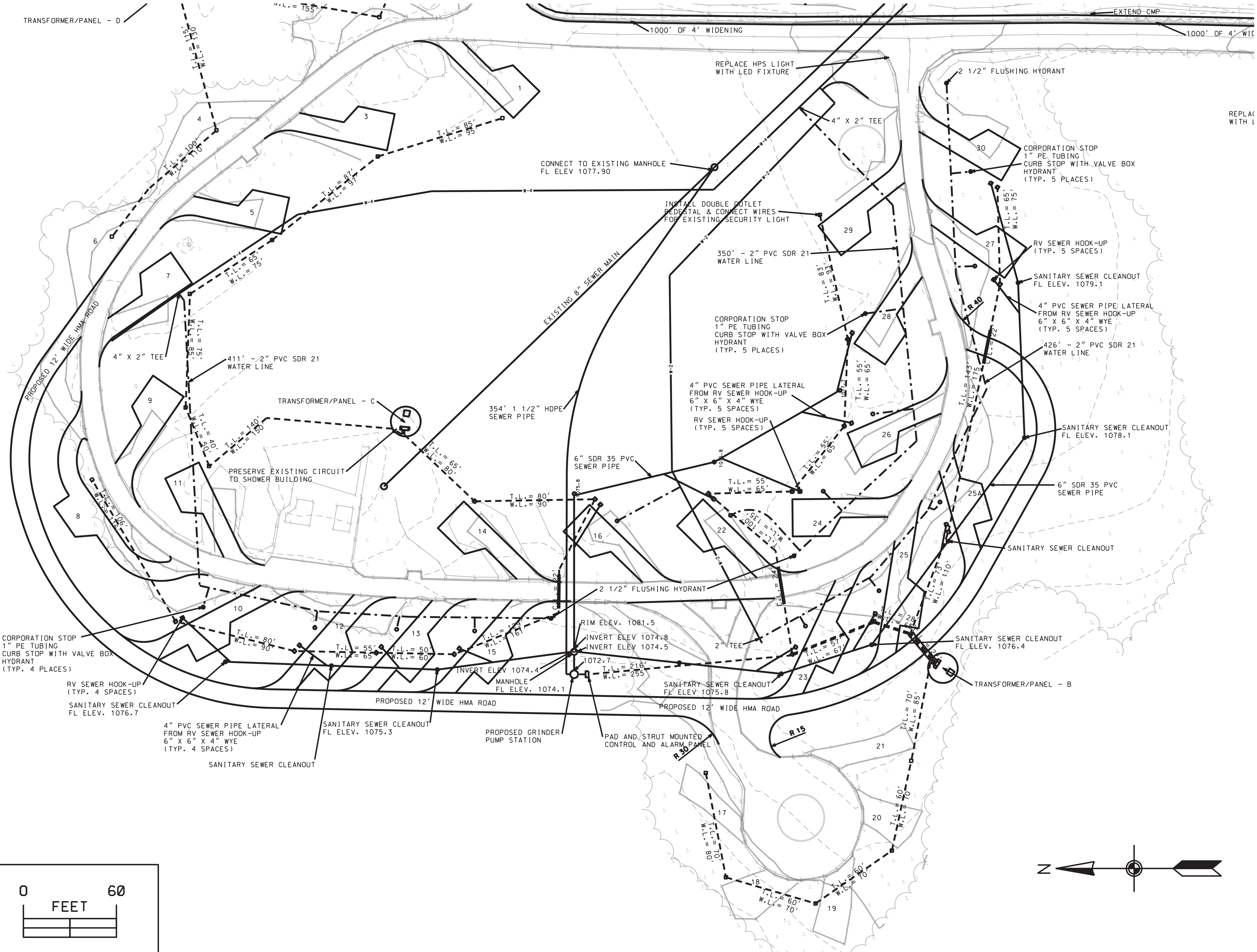
TRANSFORMER/PANEL - D

EXTEND CMP

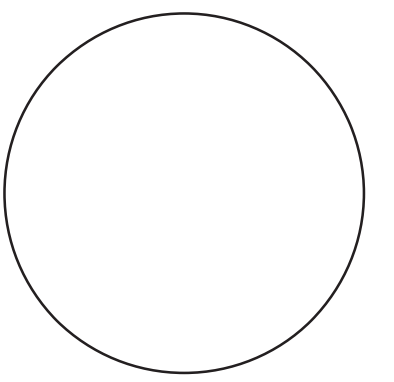
1000' OF 4' WIDENING

1000' OF 4' WIDENING

REPLAC WITH L



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WEST LOOP SITE PLAN

CAMPGROUND RENOVATION AND ENTRANCE PORTAL FOR:

LEDGES STATE PARK

BOONE COUNTY

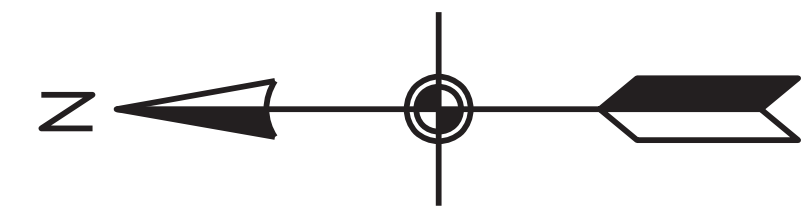
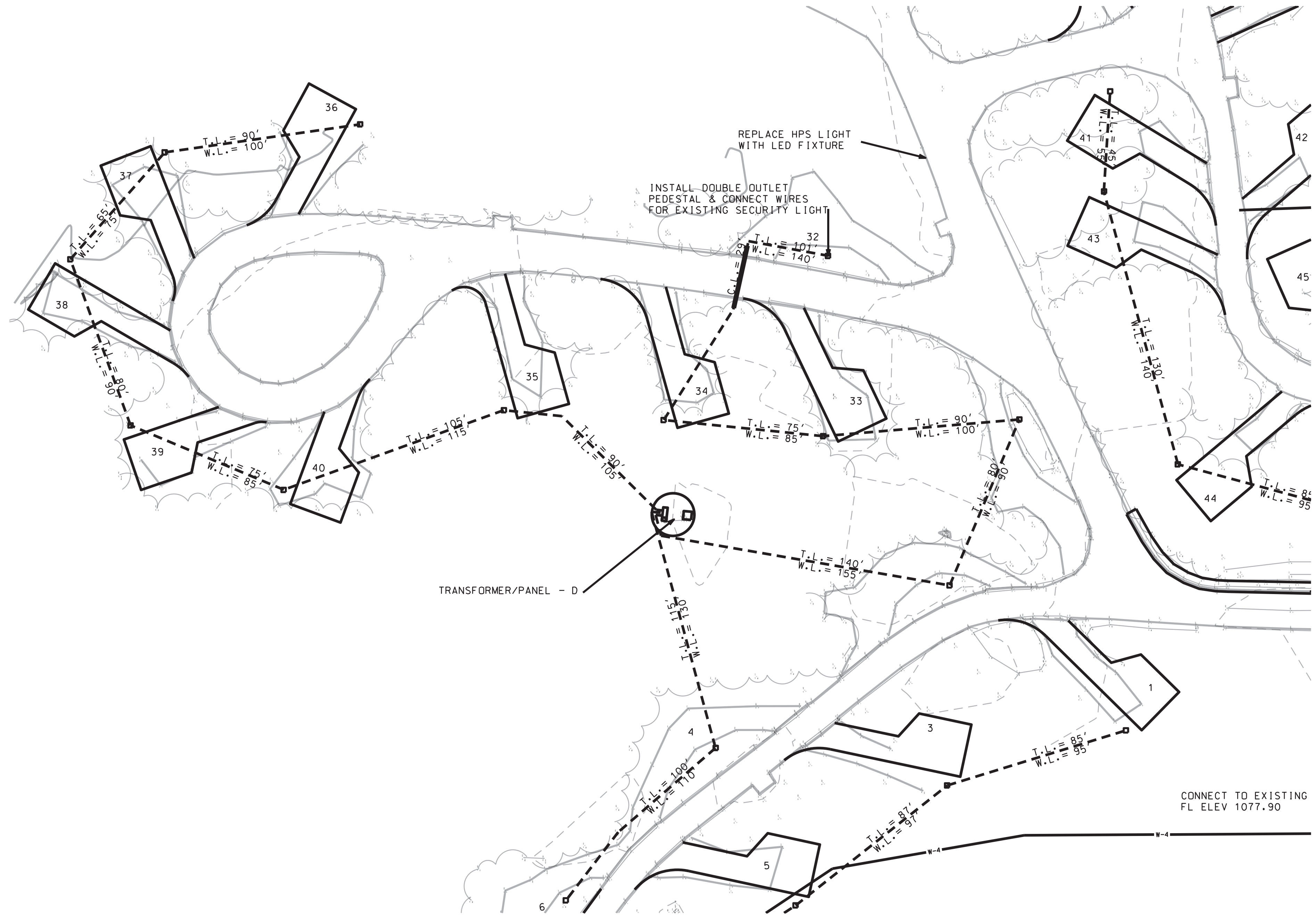
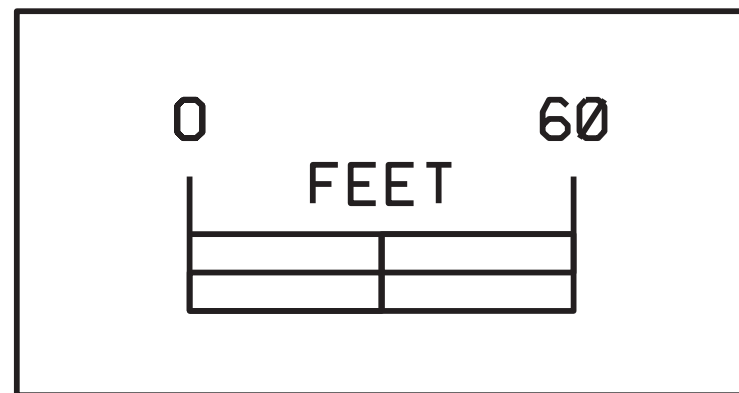
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17-02-08-02

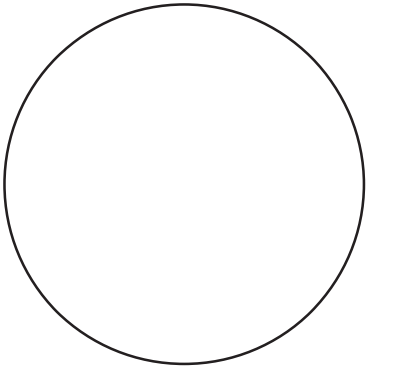
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D.02



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**IOWA DEPARTMENT OF
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ENGINEERING SERVICES - WALLACE BUILDING
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NORTH LOOP SITE PLAN

CAMPGROUND RENOVATION AND ENTRANCE PORTAL FOR:

LEDGES STATE PARK

BOONE COUNTY

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D.03