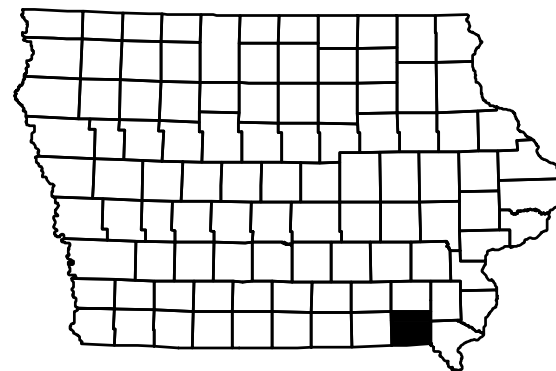


IOWA DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION DOCUMENTS FOR LACEY-KEOSAUQUA STATE PARK CAMPGROUND IMPROVEMENTS VAN BUREN COUNTY, IOWA

DNR PROJECT #17-06-89-01

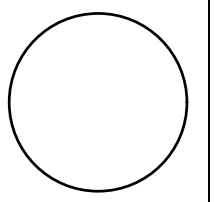


	<p>I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.</p>
	<p>MICHAEL D. DUFOE, IOWA REG. NO. 17753 DATE MY LICENSE RENEWAL DATE IS DECEMBER 31, 2017</p> <p>PAGES OR SHEETS COVERED BY THIS SEAL: ALL</p>

SHEET INDEX

1	COVER SHEET
2	LOCATION MAPS
3	QUANTITIES & NOTES
4	OVERALL PLAN
5	DEMOLITION PLAN
6	DEMOLITION PLAN
7	SANITARY SEWER PLAN
8	WATER PLAN
9	WATER PLAN
10	ELECTRIC PLAN
11	ELECTRIC PLAN
12	CIRCUIT SCHEDULE
13	GRADING PLAN
14	GRADING PLAN
15	DETAILS
16	DETAILS
17	DETAILS
18	DETAILS

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



COVER SHEET
CAMPGROUND IMPROVEMENTS FOR:
LACEY-KEOSAUQUA STATE PARK
VAN BUREN COUNTY

DIRECTORY			
PROJECT MANAGER		CONSTRUCTION INSPECTOR	
COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES	COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES
ADDRESS	502 EAST 9TH STREET	ADDRESS	502 EAST 9TH STREET
CITY, STATE, ZIP	DES MOINES, IA 50319	CITY, STATE, ZIP	DES MOINES, IA 50319
CONTACT	MICHAEL DUFOE, P.E.	CONTACT	MICHAEL DUFOE, P.E.
TELEPHONE	515-985-9196	TELEPHONE	515-985-9196
FAX	515-281-8685	FAX	515-281-8685
EMAIL	michael.dufoe@dnr.iowa.gov	EMAIL	michael.dufoe@dnr.iowa.gov

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF REMOVAL OF THE EXISTING CAMPGROUND CAMP PADS AND ELECTRIC AND INSTALLING NEW GRAVEL CAMP PADS, ELECTRIC SERVICES, WATER SERVICES AND SANITARY SEWER SERVICES LOCATED AT LACEY-KEOSAUQUA STATE PARK IN VAN BUREN COUNTY, IOWA.

CONSTRUCTION PER IOWA SUDAS STANDARD SPECIFICATIONS.

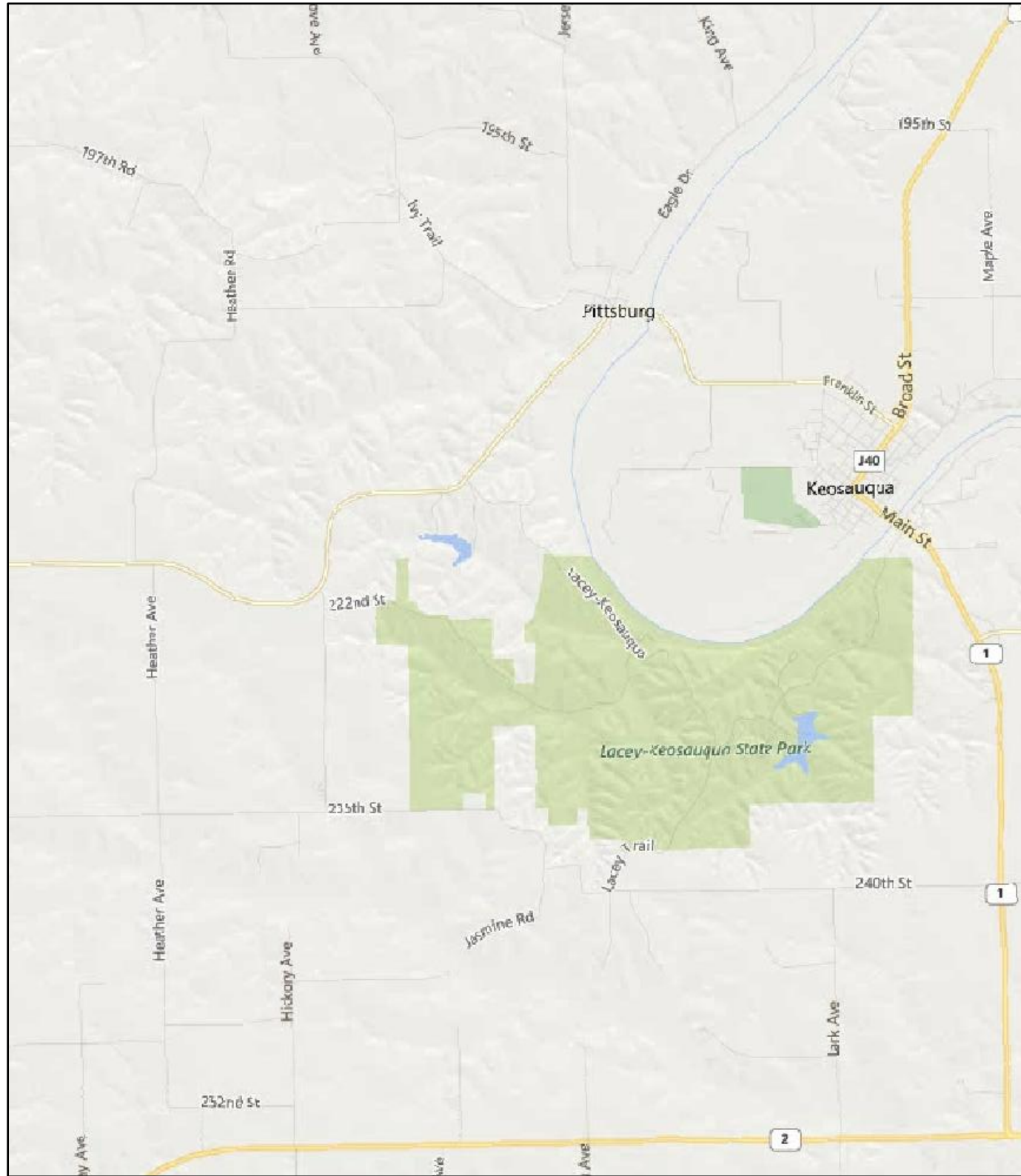
AUTHORIZATION TO BID

AUTHORIZATION - PARKS | WILDLIFE | FISHERIES | LAW ENFORCEMENT | FORESTRY

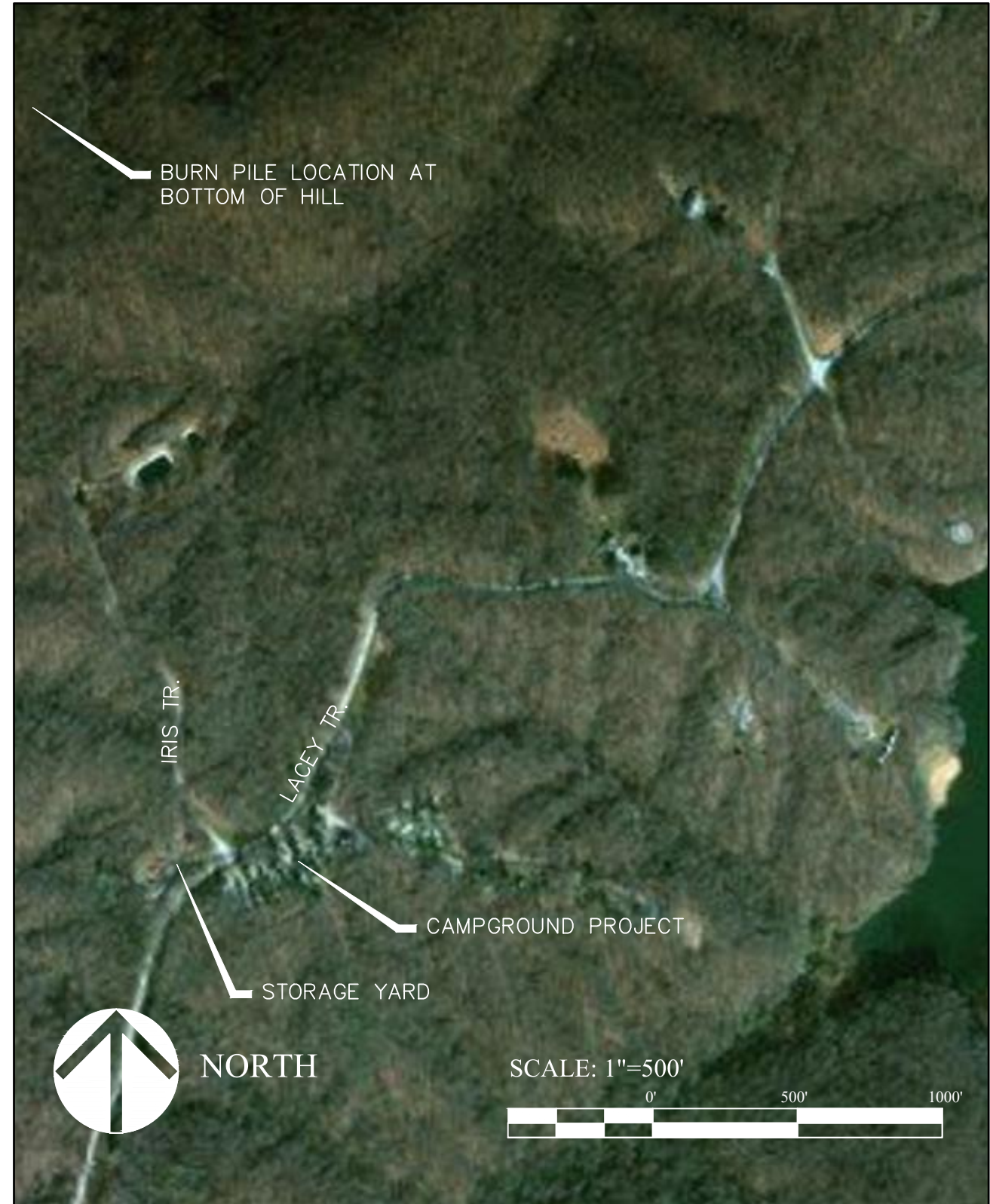
ENGINEERING BUREAU CHIEF _____ DATE _____

NO.	DATE	REVISION

DRAWN BY: PROJECT NUMBER: 17-06-89-01
CHK'D BY: DATE: OCTOBER 26, 2017
SHEET NO:

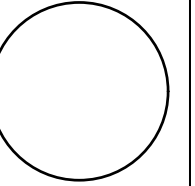


PARK LOCATION MAP



PROJECT LOCATION MAP

CONSULTANT:



**IOWA DEPARTMENT OF
NATURAL RESOURCES**

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



LOCATION MAPS

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK
VAN BUREN COUNTY

NO.	DATE	REVISION

DRAWN BY: PROJECT NUMBER: **17-06-89-01**

CHK'D BY: DATE: **OCTOBER 26, 2017**

SHEET No:

Quantities

Item No.	Description	Quantity	Unit
1	Mobilization	1	Lump Sum
2	Tree Removal - 12" to 24" Dia.	4	Each
3	Tree Removal - 24" and Above Dia.	16	Each
4	Demolition	1	Lump Sum
5	Gravel Removal	3340	SY
6	Pavement Removal	206	SY
7	Sanitary Sewer Service Connection	11	Each
8	Sanitary Sewer Service, 4" Dia. PCV SDR 23.5	468	LF
9	RV Sanitary Sewer Cleanout Connection	11	Each
10	2x2x1-Inch HDPE Tee	12	Each
11	1-Inch HDPE Pipe	309	LF
12	2-Inch HDPE Pipe	307	LF
13	Hydrant, Woodfoord Model S-3 - Campsite	12	Each
14	Hydrant, Woodfoord Model S-3 - Removal and Replacement	5	Each
15	Culvert, 24" Dia CMP	24	LF
16	Electrical Improvements	1	LS
17	PCC Sidewalk, 5" Depth Reinforced	104	SY
18	PCC Gutter, 7" Depth	50	LF
19	HMA Pavement, 6" Depth	86	SY
20	Campsite Preparation and Minor Grading	42	Each
21	Engineering Fabric	5300	SY
22	Macadam Stone	1450	Tons
23	3/8 Minus Stone	100	Tons
24	Class A Road Stone	650	Tons
25	Topsoil	80	CY
26	Filter Sock, 8"	400	LF
27	Seeding, Fertilizing and Mulching	1	Lump Sum
28	NPDES General Permit #2 & SWPPP	1	Lump Sum

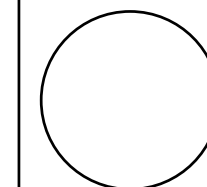
GENERAL NOTES

- TWO WEEKS PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY:
DISTRICT INSPECTOR: MICHAEL DUFOE 515-985-9196
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH STATEWIDE URBAN STANDARD DESIGN SPECIFICATIONS FOR PUBLIC IMPROVEMENTS (SUDAS). ALL CONSTRUCTION TESTING TO BE IN ACCORDANCE WITH SUDAS AND IS THE EXPENSE OF THE CONTRACTORS.
- THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ABOVE MENTIONED CONTACTS OF ANY DISCREPANCIES.
- THE LOCATIONS AND DIMENSIONS SHOWN ON THE PLANS FOR EXISTING FACILITIES ARE IN ACCORDANCE WITH AVAILABLE INFORMATION WITHOUT UNCOVERING AND MEASURING. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION OR THAT ALL EXISTING UNDERGROUND FACILITIES ARE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL PUBLIC AND/OR PRIVATE UTILITIES SERVING THE AREA TO DETERMINE THE PRESENT EXTENT AND LOCATION OF THEIR FACILITIES BEFORE BEGINNING WORK.
- THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROPER UTILITY IMMEDIATELY UPON BREAKING OR DAMAGE TO ANY UTILITY LINE OR APPURTENANCE, OR THE INTERRUPTION OF THEIR SERVICE. HE SHALL NOTIFY THE PROPER UTILITY INVOLVED. IF EXISTING UTILITY LINES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED.
- CONTRACTOR TO PROTECT ALL UTILITY, PAVING, BUILDINGS, ETC. OUTSIDE OF LIMITS OF PROPOSED CONSTRUCTION.
- PROTECT EXISTING TREES AND VEGETATION OUTSIDE OF CONSTRUCTION AREAS.
- SURVEY STAKING TO BE COMPLETED BY IOWA DNR WITH TWO WEEK MINIMUM NOTICE.

Estimate Notes

Item No.	Note
1	Includes placement of Type III barricades at campground entrance. Payment per SUDAS Specifications.
2	Includes removal of stumps and hauling to park burn site location. Contains a contingency of 2 trees in case additional removal is needed.
3	Includes removal of stumps and hauling to park burn site location. Contains a contingency of 2 trees in case additional removal is needed.
4	Demolition includes the following: A. Removal and disposal of electrical pedestals per plan. B. Removal and disposal of electrical distribution panel.
5	Includes reusing some material as fill, placement at the visitor parking lot per plan, and removal and haul to park storage yard, if needed.
6	Includes saw cuts and removal and disposal offsite.
7	Includes wye/tee saddle to existing sewer main per SUDAS Specifications.
8	Per SUDAS Specifications.
9	Per Detail on Sheet 15.
10	Includes reducer to 1" where needed per plan.
11	Per SUDAS Specifications. Includes disinfection and testing.
12	Per SUDAS Specifications. Includes disinfection and testing.
13	Includes shut off valve and drainage pad per detail on Sheet 15.
14	Includes removal and disposal of existing hydrant and replacement. Includes drainage pad per detail Sheet 15. Reuse existing shut off valve.
15	Per SUDAS Specifications.
16	Includes the following: A. Installation of 42 electric pedestals. B. Installation of 2 distribution panels per plan. C. Conduit under road per plan. D. Caution Tape to be placed over trenched electrical per detail. E. All necessary wires, wiring, con
17	Includes 2 rows of rebar placed parallel in sidewalk (24" spacing).
18	Gutter to match existing elevations.
19	Per SUDAS Specifications.
20	Includes striping 6" of topsoil and piling for reuse, cutting and/or filling as need for a level pad per plan.
21	To be placed under macadam stone on each campsite. Per SUDAS Specifications.
22	To be placed as 5" depth on all campsites.
23	Do be placed at handicap accessible camp site, 2" depth.
24	Do be placed at finish for campsites, 2" depth.
25	A contingency item to be used as needed.
26	A contingency item, placement as directed by Field Engineer.
27	Per Specifications, urban mix.
28	SWPPP Preparation, documentation and inspections to be performed by the Contractor for disturbed area over 1 acre.

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES

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



QUANTITIES & GENERAL NOTES

CAMPGROUND IMPROVEMENTS FOR:

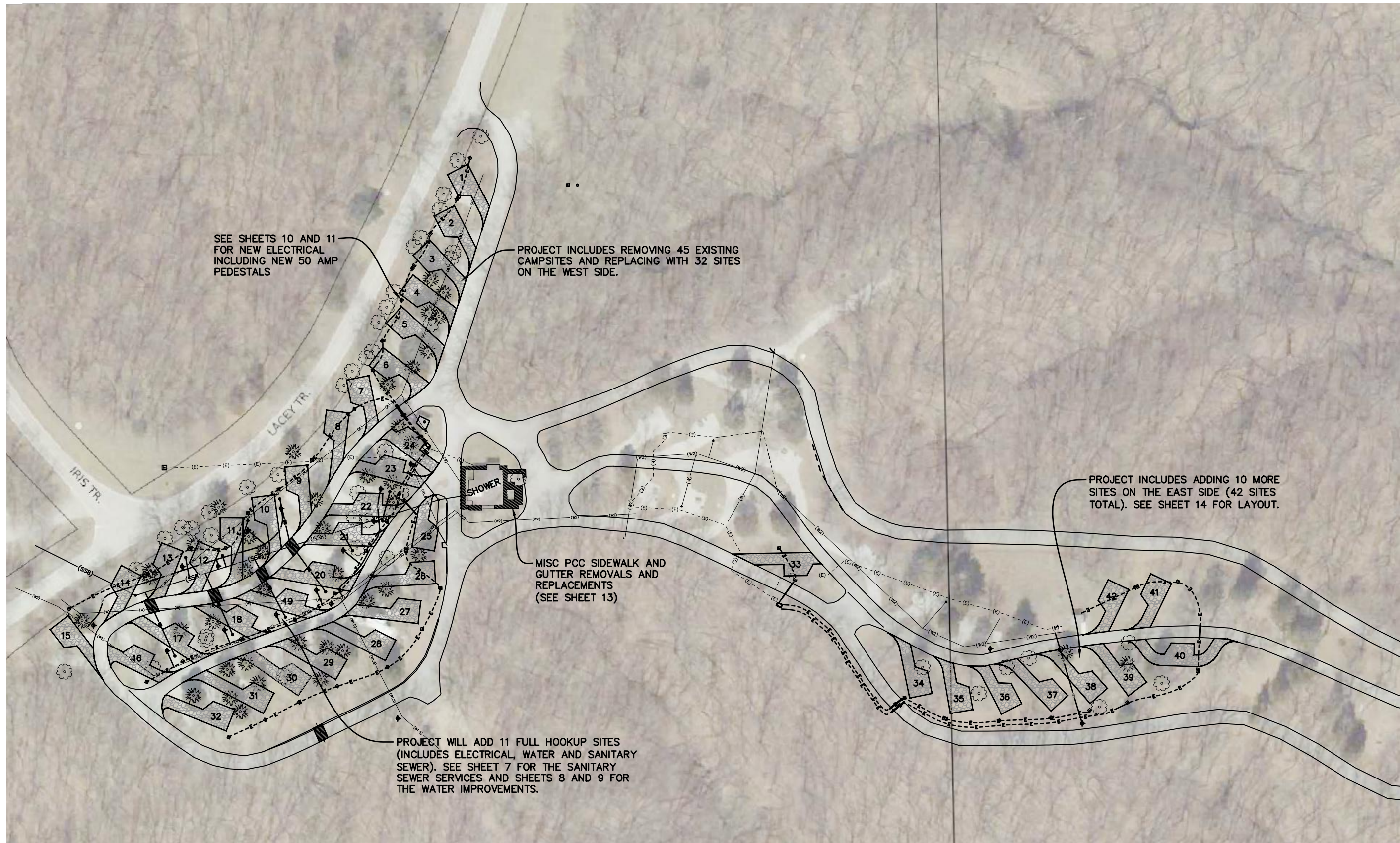
LACEY-KEOSAUQUA STATE PARK
VAN BUREN COUNTY

NO.	DATE	REVISION

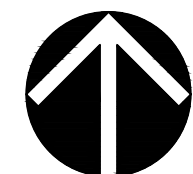
DRAWN BY: PROJECT NUMBER:
17-06-89-01

CHK'D BY: DATE:
OCTOBER 26, 2017

SHEET NO:

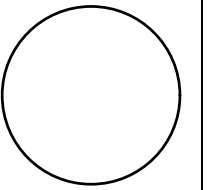


SCALE: 1"=100'



NORTH

CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

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



OVERALL PLAN

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

VAN BUREN COUNTY

NO. DATE REVISION

DRAWN BY: PROJECT NUMBER:

17-06-89-01

CHK'D BY: DATE:

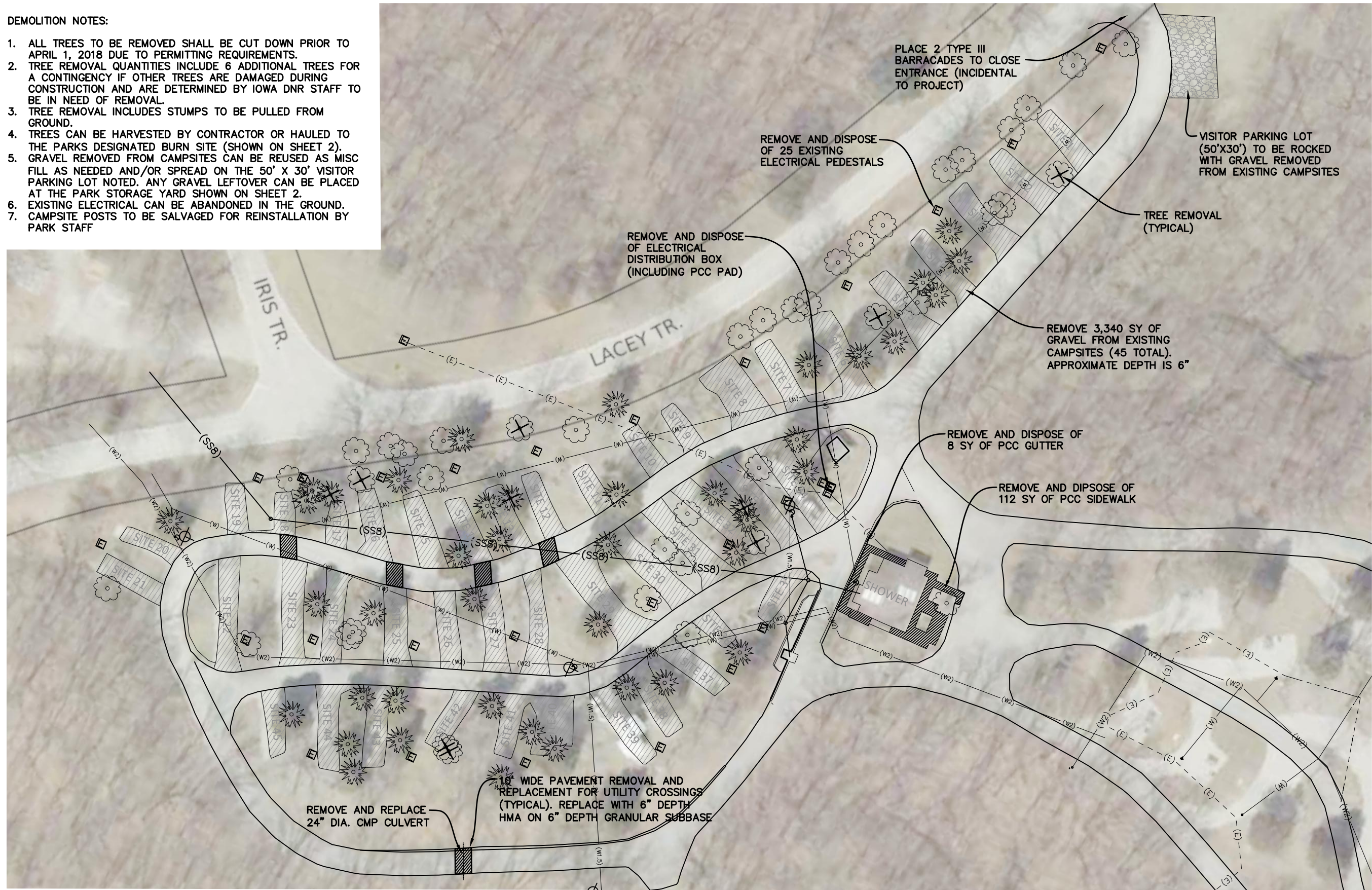
OCTOBER 26, 2017

SHEET No:

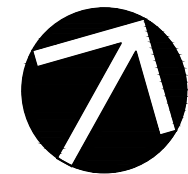
4

DEMOLITION NOTES:

1. ALL TREES TO BE REMOVED SHALL BE CUT DOWN PRIOR TO APRIL 1, 2018 DUE TO PERMITTING REQUIREMENTS.
2. TREE REMOVAL QUANTITIES INCLUDE 6 ADDITIONAL TREES FOR A CONTINGENCY IF OTHER TREES ARE DAMAGED DURING CONSTRUCTION AND ARE DETERMINED BY IOWA DNR STAFF TO BE IN NEED OF REMOVAL.
3. TREE REMOVAL INCLUDES STUMPS TO BE PULLED FROM GROUND.
4. TREES CAN BE HARVESTED BY CONTRACTOR OR HAULED TO THE PARKS DESIGNATED BURN SITE (SHOWN ON SHEET 2).
5. GRAVEL REMOVED FROM CAMPSITES CAN BE REUSED AS MISC FILL AS NEEDED AND/OR SPREAD ON THE 50' X 30' VISITOR PARKING LOT NOTED. ANY GRAVEL LEFTOVER CAN BE PLACED AT THE PARK STORAGE YARD SHOWN ON SHEET 2.
6. EXISTING ELECTRICAL CAN BE ABANDONED IN THE GROUND.
7. CAMPSITE POSTS TO BE SALVAGED FOR REINSTALLATION BY PARK STAFF

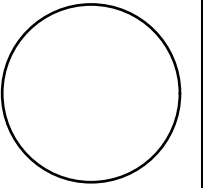


SCALE: 1"=50'



NORTH

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES

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



DEMOLITION PLAN

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

VAN BUREN COUNTY

NO. DATE REVISION

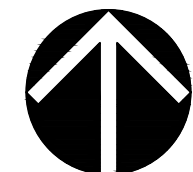
DRAWN BY: PROJECT NUMBER: 17-06-89-01

CHK'D BY: DATE: OCTOBER 26, 2017

SHEET No: 5

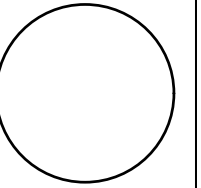


SCALE: 1"=40'



NORTH

CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

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



DEMOLITION PLAN

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

VAN BUREN COUNTY

NO.	DATE	REVISION

DRAWN BY: PROJECT NUMBER:
17-06-89-01

CHK'D BY: DATE:
OCTOBER 26, 2017

SHEET No:
6

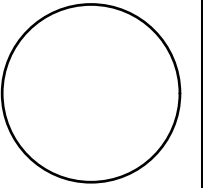


Campsite Sewer Services (11 Each)		
Campsite No.	Station Tap	Sanitary Service Length (LF)
10	1+63.0	52
11	2+27.4	50
12	2+34.0	14
13	2+74.4	22
17	3+23.0	74
18	2+56.8	70
19	2+03.4	70
20	1+61.2	60
21	1+07.8	24
22	0+63.2	4
23	0+61.1	28
Total:		468

SCALE: 1"=40'



CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

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



SANITARY SEWER PLAN

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

VAN BUREN COUNTY

NO. DATE REVISION

DRAWN BY: PROJECT NUMBER:

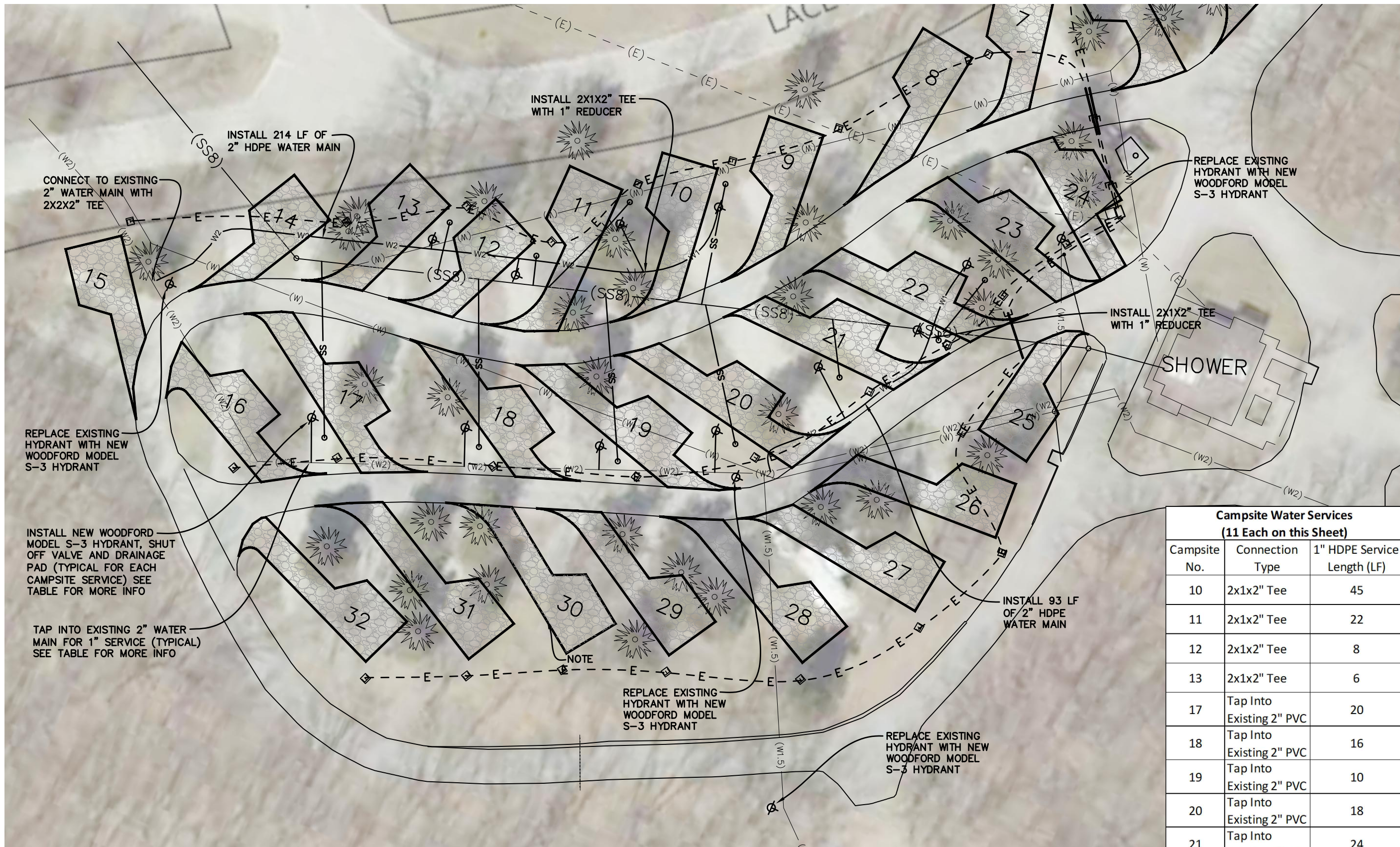
17-06-89-01

CHK'D BY: DATE:

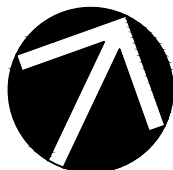
OCTOBER 26, 2017

SHEET No:

7



SCALE: 1"=40'



NORTH

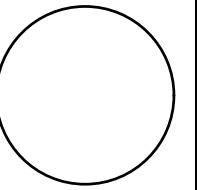
NOTES:

1. EXISTING UTILITIES BASED ON RECORD DRAWINGS, CONTRACTOR TO VERIFY LOCATIONS.
2. THE WATER LINE SHOWN AS (W) IS UNKNOWN SIZE AND MATERIAL - PER PREVIOUS DRAWINGS IT APPEARS TO BE ABANDONED.
3. CAMPSITE HYDRANT INSTALLATION INCLUDES SHUT OFF VALVE AND DRAINAGE PAD PER DETAIL.
4. HYDRANT REPLACEMENT INCLUDES REMOVING OLD HYDRANT AND REUSING SHUTOFF VALVE.
5. EXISTING WATER MAIN MATERIAL IS UNKNOWN. PVC IS ASSUMED, CONTRACTOR TO VERIFY PRIOR TO TAPPING.

**Campsite Water Services
(11 Each on this Sheet)**

Campsite No.	Connection Type	1" HDPE Service Length (LF)
10	2x1x2" Tee	45
11	2x1x2" Tee	22
12	2x1x2" Tee	8
13	2x1x2" Tee	6
17	Tap Into Existing 2" PVC	20
18	Tap Into Existing 2" PVC	16
19	Tap Into Existing 2" PVC	10
20	Tap Into Existing 2" PVC	18
21	Tap Into Existing 2" PVC	24
22	Tap Into Existing 2" PVC	6
23	Tap Into Existing 2" PVC	34
Total This Sheet:		209

CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

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



WATER PLAN

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

VAN BUREN COUNTY

NO. DATE REVISION

NO.	DATE	REVISION

DRAWN BY: PROJECT NUMBER:

17-06-89-01

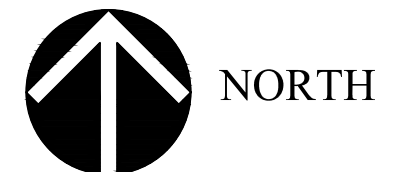
CHK'D BY: DATE:

OCTOBER 26, 2017

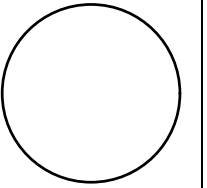
SHEET No:



SCALE: 1"=40'



CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

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



WATER PLAN

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

VAN BUREN COUNTY

NO.	DATE	REVISION

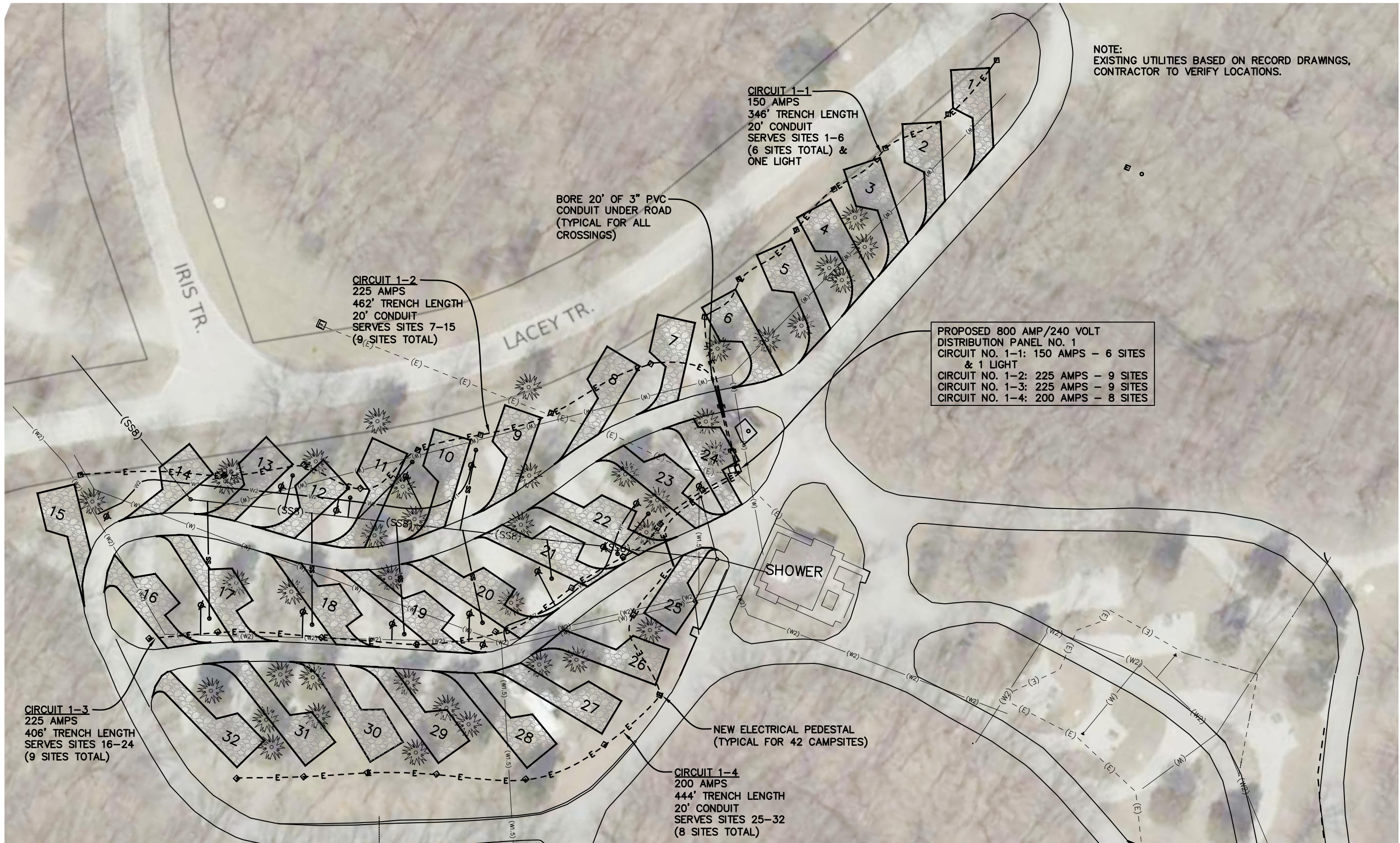
DRAWN BY: PROJECT NUMBER:

17-06-89-01

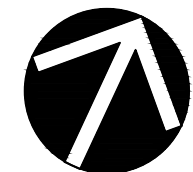
CHK'D BY: DATE:

OCTOBER 26, 2017

SHEET No:

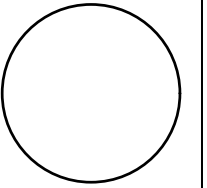


SCALE: 1"=60'



NORTH

CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

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



ELECTRICAL PLAN

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

VAN BUREN COUNTY

NO. DATE REVISION

DRAWN BY: PROJECT NUMBER:

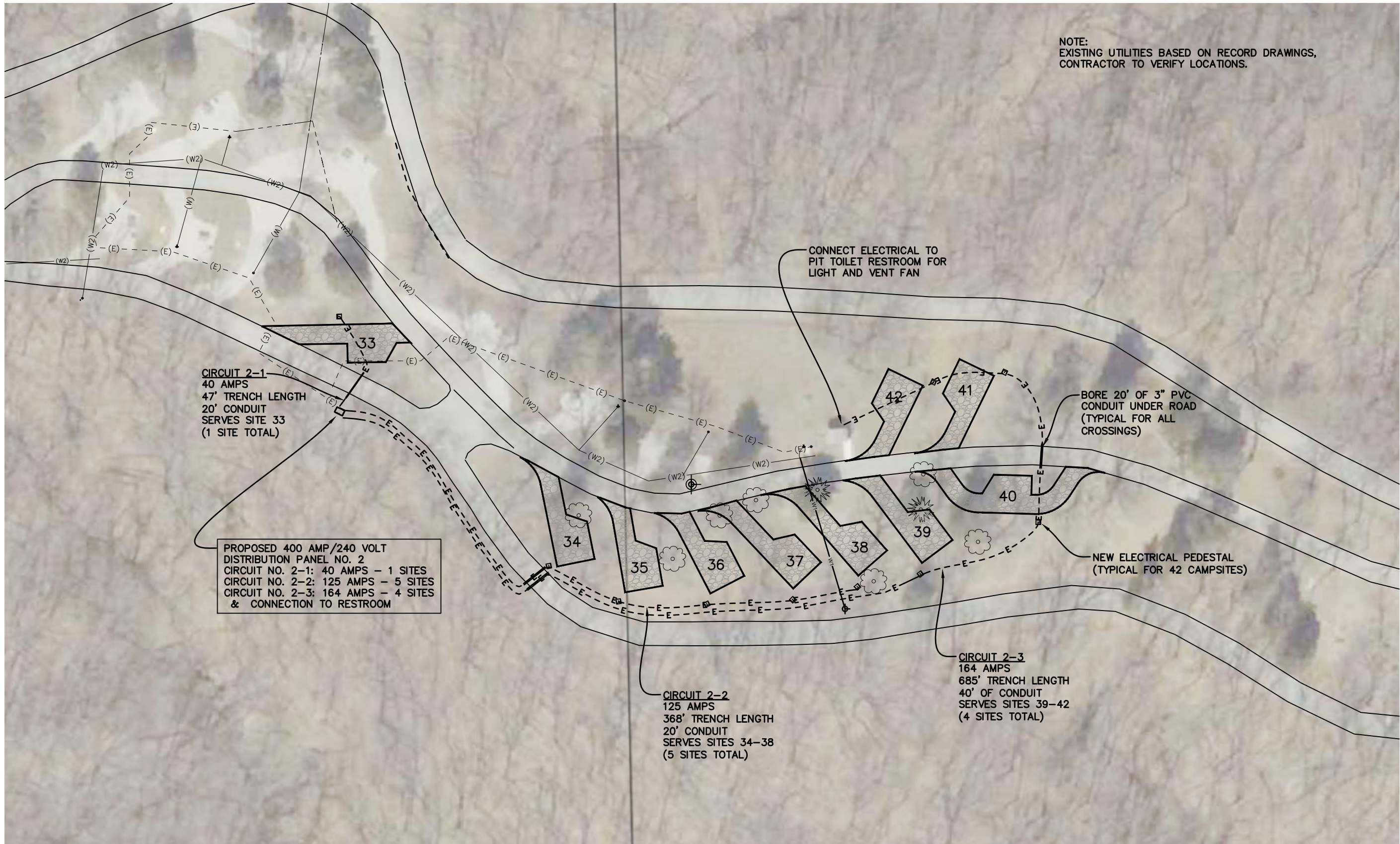
17-06-89-01

CHK'D BY: DATE:

OCTOBER 26, 2017

SHEET No:

10



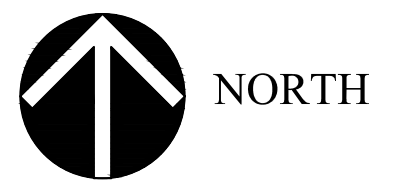
NOTE:
EXISTING UTILITIES BASED ON RECORD DRAWINGS,
CONTRACTOR TO VERIFY LOCATIONS.

CIRCUIT 2-1
40 AMPS
47' TRENCH LENGTH
20' CONDUIT
SERVES SITE 33
(1 SITE TOTAL)

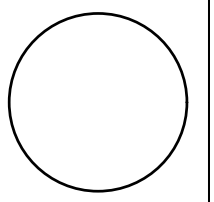
PROPOSED 400 AMP/240 VOLT
DISTRIBUTION PANEL NO. 2
CIRCUIT NO. 2-1: 40 AMPS - 1 SITES
CIRCUIT NO. 2-2: 125 AMPS - 5 SITES
CIRCUIT NO. 2-3: 164 AMPS - 4 SITES
& CONNECTION TO RESTROOM

CIRCUIT 2-2
125 AMPS
368' TRENCH LENGTH
20' CONDUIT
SERVES SITES 34-38
(5 SITES TOTAL)

CIRCUIT 2-3
164 AMPS
685' TRENCH LENGTH
40' OF CONDUIT
SERVES SITES 39-42
(4 SITES TOTAL)



CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

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



ELECTRICAL PLAN

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

VAN BUREN COUNTY

NO.	DATE	REVISION

DRAWN BY: PROJECT NUMBER:
17-06-89-01

CHK'D BY: DATE:
OCTOBER 26, 2017

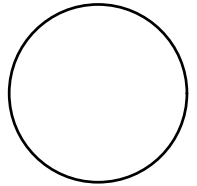
SHEET No:
11

CIRCUIT SCHEDULE

CIRCUIT OR CONDUCTOR	NO. OF CAMP SITES	FACILITY OR CAMPSITE NUMBERS SERVED	TRENCH LENGTH			LENGTH OF ROAD XING CONDUIT (FT.)	LENGTH OF WARNING TAPE (FT.)	C. B. OR FUSE SIZE (AMP)	SIZE (AWG) & LENGTH (FT.) OF GR. CONDUCTOR (TYPE THW OR USE)					SIZE (AWG) & LENGTH (FT.) OF CONDUCTOR						TYPE U.F.
			SGL.	DBL.	TRPL.				#6	#4	#2	#1/0	#3/0	TYPE U.S.E.						
														#1	#1/0	#2/0	#3/0	#4/0	250 MCM	

CIRCUIT SCHEDULE TO BE ISSUED VIA ADDENDUM

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES

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



CIRCUIT SCHEDULE

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

VAN BUREN COUNTY

GENERAL NOTES

1. CONSISTENTLY THROUGHOUT THE PROJECT, THE PHASE "A" CONDUCTOR, THE PHASE "B" CONDUCTOR, AND THE NEUTRAL CONDUCTOR SHALL BE DISTINGUISHED FROM EACH OTHER BY COLOR CODING, OR BY SURFACE DEFORMATIONS OR OTHER MARKINGS IN THE CONDUCTOR INSULATION. THE GROUND CONDUCTORS SHALL HAVE GREEN COLORED INSULATION.
2. 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 FURTHEST CAMPSITE OUTLET ON THE CIRCUIT, TO 5% (6 VOLTS ON EACH 120V PHASE).
3. ALL CONDUCTORS SHALL BE COPPER

NO. DATE REVISION

DRAWN BY: PROJECT NUMBER:

17-06-89-01

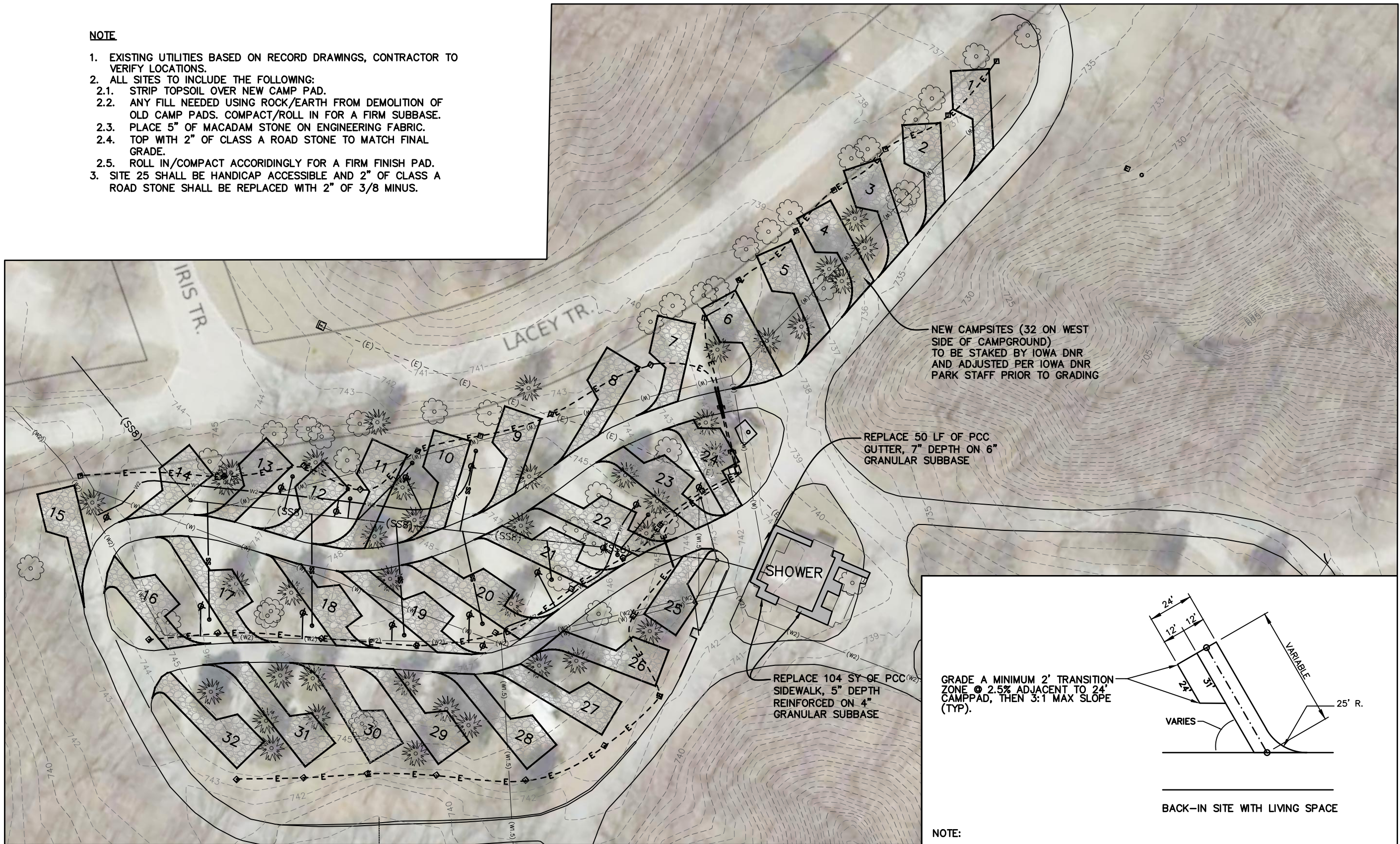
CHK'D BY: DATE:

OCTOBER 26, 2017

SHEET No:

NOTE

1. EXISTING UTILITIES BASED ON RECORD DRAWINGS, CONTRACTOR TO VERIFY LOCATIONS.
2. ALL SITES TO INCLUDE THE FOLLOWING:
 - 2.1. STRIP TOPSOIL OVER NEW CAMP PAD.
 - 2.2. ANY FILL NEEDED USING ROCK/EARTH FROM DEMOLITION OF OLD CAMP PADS. COMPACT/ROLL IN FOR A FIRM SUBBASE.
 - 2.3. PLACE 5" OF MACADAM STONE ON ENGINEERING FABRIC.
 - 2.4. TOP WITH 2" OF CLASS A ROAD STONE TO MATCH FINAL GRADE.
 - 2.5. ROLL IN/COMPACT ACCORDINGLY FOR A FIRM FINISH PAD.
3. SITE 25 SHALL BE HANDICAP ACCESSIBLE AND 2" OF CLASS A ROAD STONE SHALL BE REPLACED WITH 2" OF 3/8 MINUS.

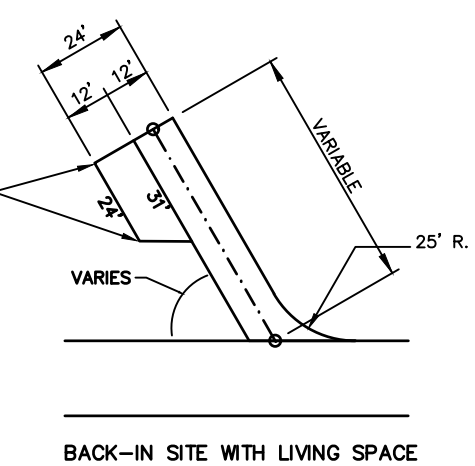


NEW CAMPSITES (32 ON WEST SIDE OF CAMPGROUND) TO BE STAKED BY IOWA DNR AND ADJUSTED PER IOWA DNR PARK STAFF PRIOR TO GRADING

REPLACE 50 LF OF PCC GUTTER, 7" DEPTH ON 6" GRANULAR SUBBASE

REPLACE 104 SY OF PCC SIDEWALK, 5" DEPTH REINFORCED ON 4" GRANULAR SUBBASE

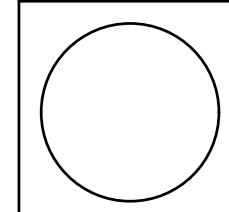
GRADE A MINIMUM 2' TRANSITION ZONE @ 2.5% ADJACENT TO 24' CAMPPAD, THEN 3:1 MAX SLOPE (TYP).



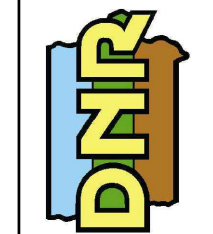
NOTE:
SLOPE NOT TO EXCEED 2% IN ANY DIRECTION ON CAMP PADS UNLESS OTHERWISE DIRECTED BY THE D.N.R. CONSTRUCTION INSPECTOR. SHAPE CAMP PADS WITH A 25' RADIUS AT THE INTERSECTION WITH THE ROADWAY WHEREVER POSSIBLE.

CAMP PAD TYPICAL DIMENSIONS LAYOUT

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



GRADING PLAN
CAMPGROUND IMPROVEMENTS FOR:
LACEY-KEOSAUQUA STATE PARK
VAN BUREN COUNTY

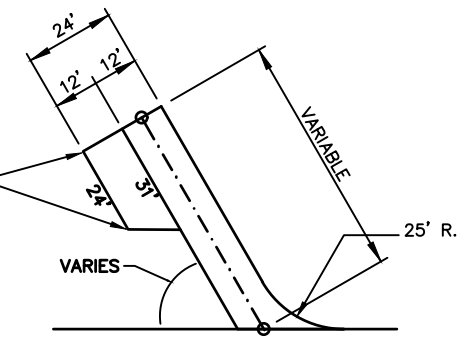
NO.	DATE	REVISION

DRAWN BY: PROJECT NUMBER: **17-06-89-01**
CHK'D BY: DATE: **OCTOBER 26, 2017**
SHEET No:

NOTE

1. EXISTING UTILITIES BASED ON RECORD DRAWINGS, CONTRACTOR TO VERIFY LOCATIONS.
2. ALL SITES TO INCLUDE THE FOLLOWING:
 - 2.1. STRIP TOPSOIL OVER NEW CAMP PAD.
 - 2.2. ANY FILL NEEDED USING ROCK/EARTH FROM DEMOLITION OF OLD CAMP PADS. COMPACT/ROLL IN FOR A FIRM SUBBASE.
 - 2.3. PLACE 5" OF MACADAM STONE ON ENGINEERING FABRIC.
 - 2.4. TOP WITH 2" OF CLASS A ROAD STONE TO MATCH FINAL GRADE.
 - 2.5. ROLL IN/COMPACT ACCORDINGLY FOR A FIRM FINISH PAD.
3. SITES 34-40 CAN HAVE DROP OF 5% FOR FIRST 20' TO THEN FLATTEN OUT TO 2% MAX IN AREA WHERE RV WILL PARK.
4. FILL ON BACK SIDE OF SITES 34-40 TO BE INCIDENTAL TO "CAMPSITE PREPARATION AND MINOR GRADING" BID ITEM. CAN USE MATERIAL EXCAVATED FROM WEST CAMPSITES TO BUILD UP AREA.

GRADE A MINIMUM 2' TRANSITION ZONE @ 2.5% ADJACENT TO 24' CAMPPAD, THEN 3:1 MAX SLOPE (TYP).

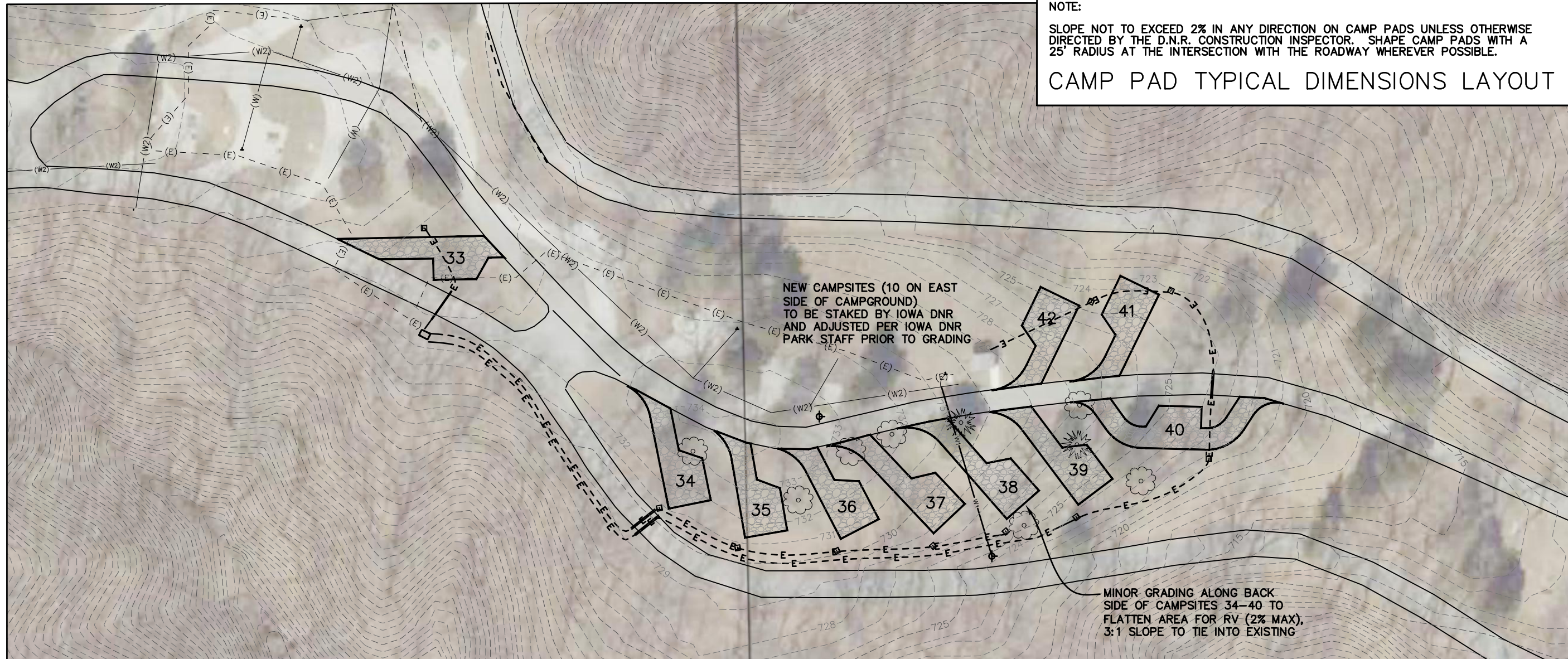


BACK-IN SITE WITH LIVING SPACE

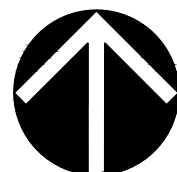
NOTE:

SLOPE NOT TO EXCEED 2% IN ANY DIRECTION ON CAMP PADS UNLESS OTHERWISE DIRECTED BY THE D.N.R. CONSTRUCTION INSPECTOR. SHAPE CAMP PADS WITH A 25' RADIUS AT THE INTERSECTION WITH THE ROADWAY WHEREVER POSSIBLE.

CAMP PAD TYPICAL DIMENSIONS LAYOUT

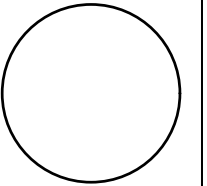


SCALE: 1"=60'



NORTH

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES

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



GRADING PLAN

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

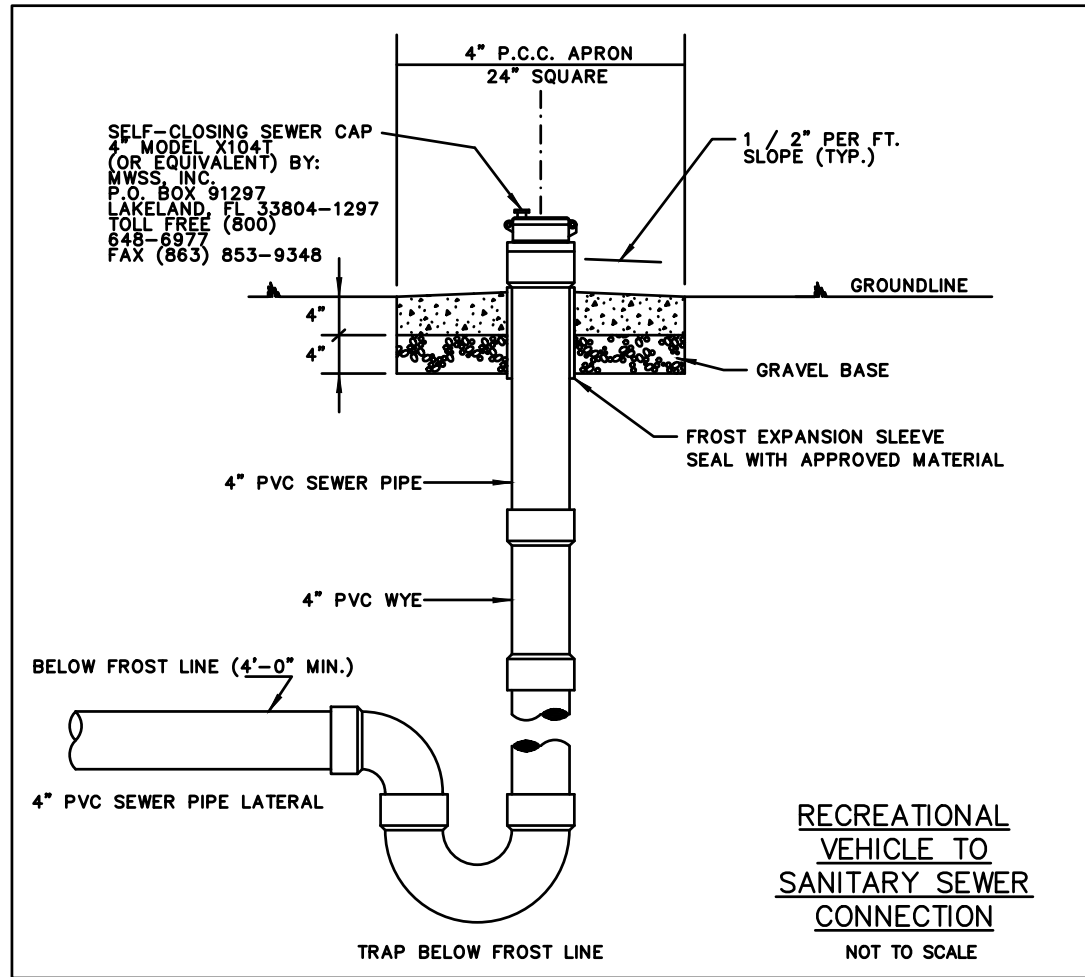
VAN BUREN COUNTY

NO. DATE REVISION

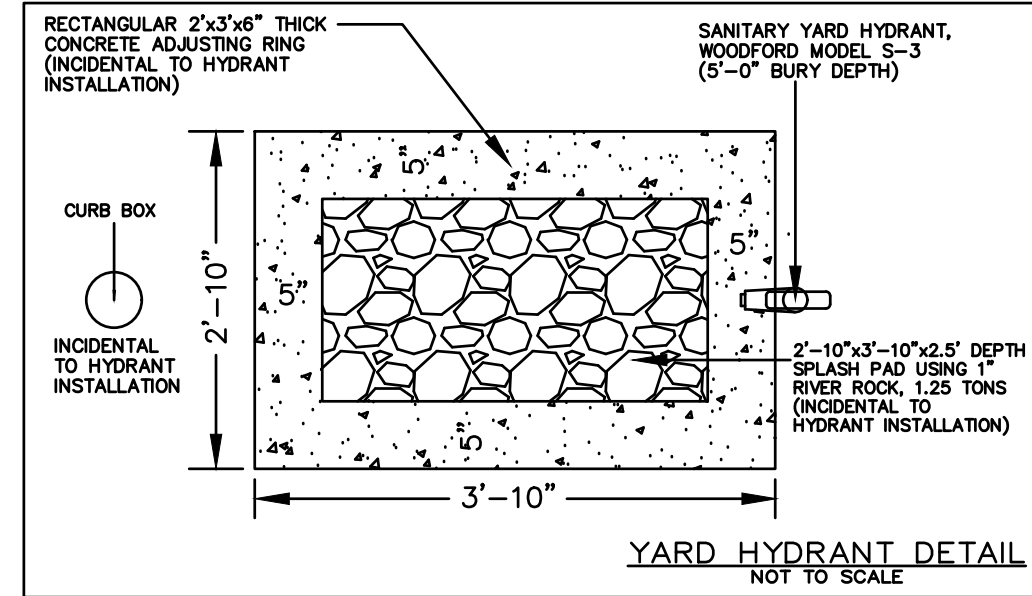
DRAWN BY: PROJECT NUMBER:
17-06-89-01
CHK'D BY: DATE:
OCTOBER 26, 2017

SHEET No:

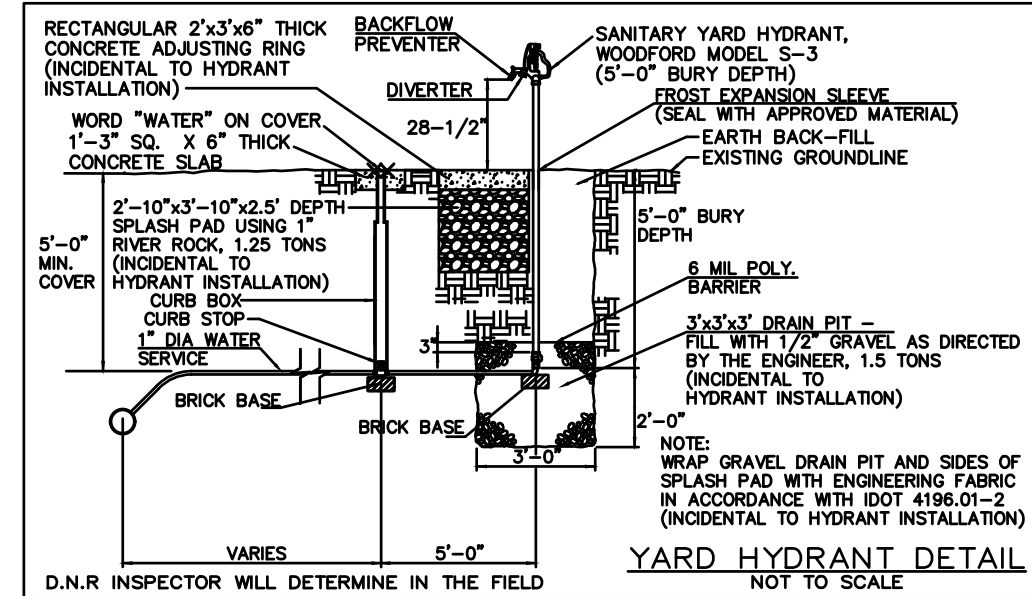
14



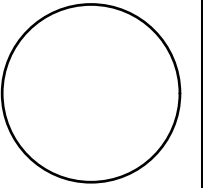
PLAN VIEW



PROFILE VIEW



CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

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



DETAILS

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

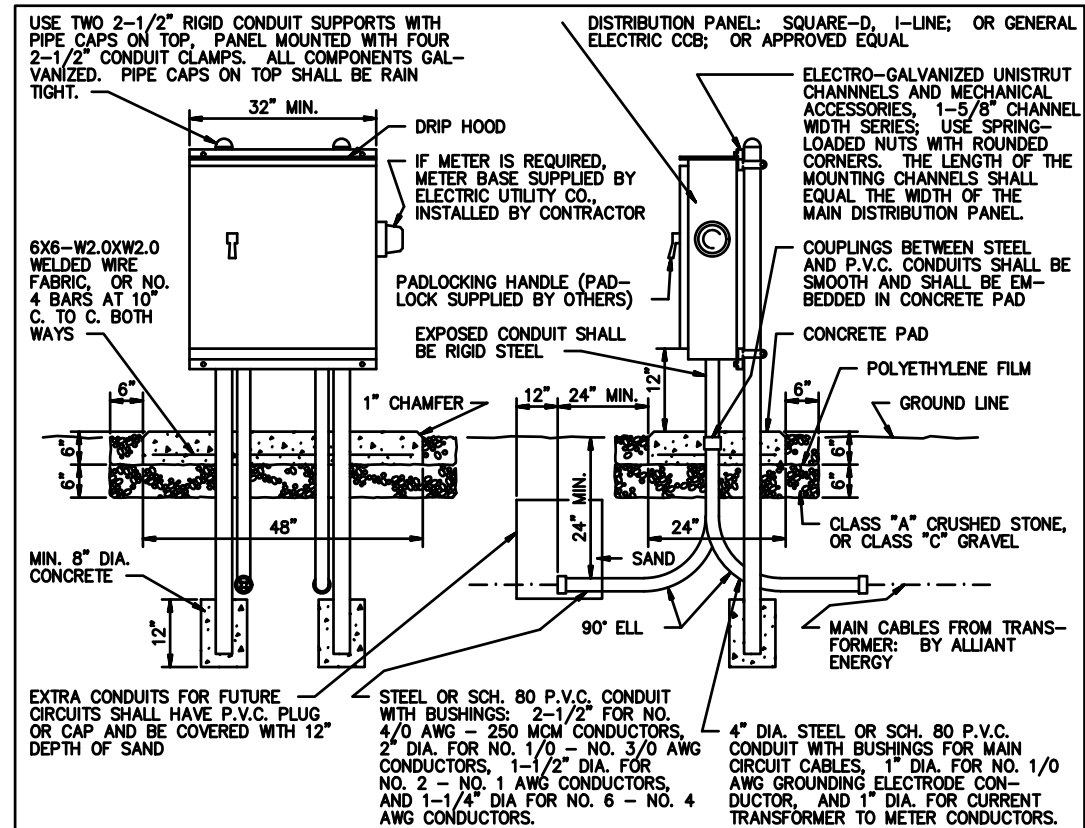
VAN BUREN COUNTY

NO. DATE REVISION

DRAWN BY: PROJECT NUMBER:
17-06-89-01

CHK'D BY: DATE:
OCTOBER 26, 2017

SHEET No:



PAD-MOUNTED DISTRIBUTION PANEL DETAIL

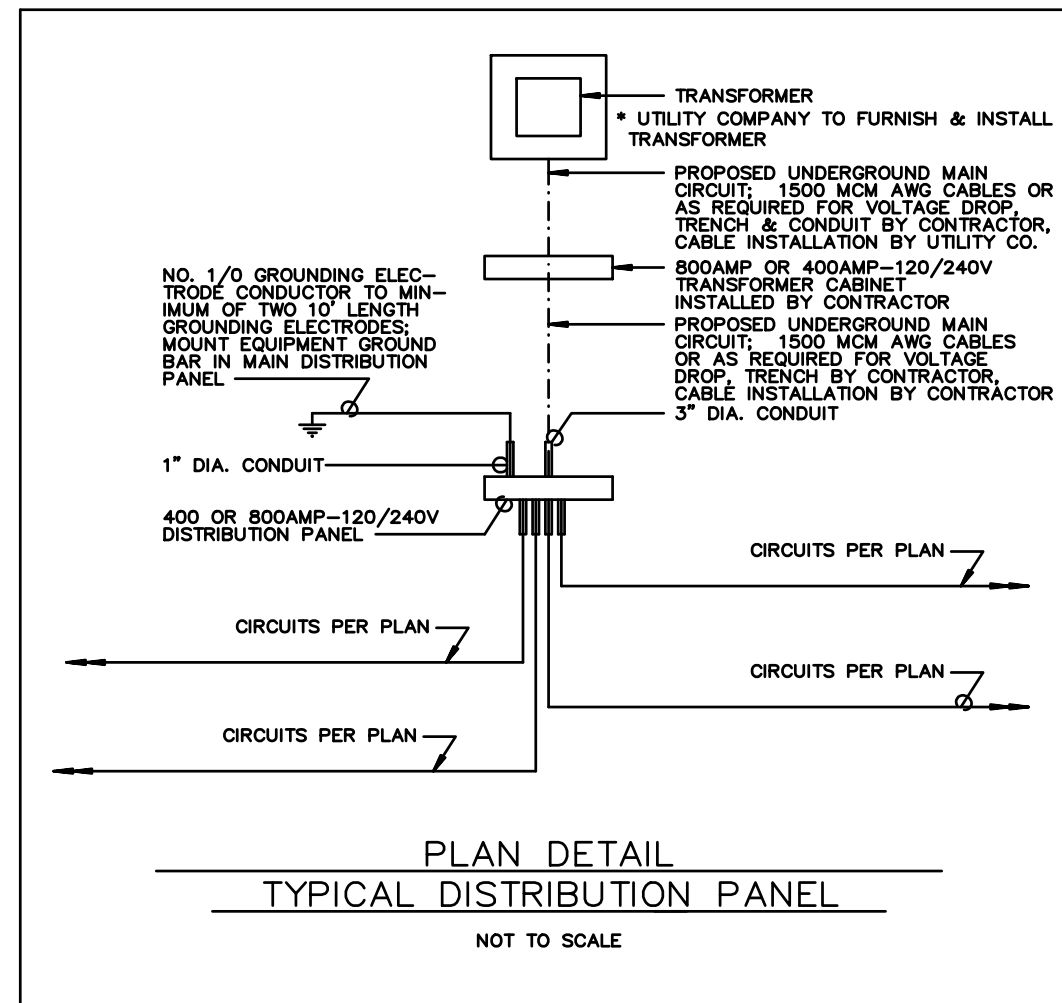
NOTES:

- 400,600,800 AMP/240 VOLT MAIN DISTRIBUTION PANEL FEATURES:
- IF THE PROJECT SITE DOES NOT HAVE PRIMARY METERING, A METER FOR SECONDARY CIRCUITS SHALL BE INSTALLED ON THE SIDE OF THE MAIN DISTRIBUTION PANEL. THE METER BASE INSTALLATION SHALL BE IN CONFORMANCE WITH THE ELECTRIC UTILITY COMPANY'S REQUIREMENTS AND BE SUBJECT TO THEIR APPROVAL.
 - THE COST FOR INSTALLING "MAIN CIRCUIT CABLES" SHALL BE INCLUDED IN THE COST FOR INSTALLING THE MAIN DISTRIBUTION PANEL. THE CONTRACTOR SHALL ARRANGE WITH THE ELECTRIC UTILITY COMPANY FOR CONNECTION OF THE MAIN CIRCUIT CABLES TO THE TRANSFORMER.
 - MAIN DISTRIBUTION PANELS SHALL BE MOUNTED TO RIGID STEEL CONDUIT POSTS USING CONDUIT CLAMPS AND A 1-5/8" X 3-1/4" X 12 GAUGE CHANNEL COMBINATION. MOUNTING CHANNELS AND ACCESSORIES SHALL BE CONSTRUCTED USING THE "UNISTRUT" SYSTEM MANUFACTURED BY GTE PRODUCTS CORP., THE "POWER-STRUT" SYSTEM MANUFACTURED BY ELCEN METAL PRODUCTS CO., OR AN APPROVED EQUAL WITH THE "UNISTRUT" SYSTEM, CONDUIT CLAMPS SHALL BE NO. P1118, AND MOUNTING CHANNELS SHALL BE NO. P1001B. WITH THE "POWER-STRUT" SYSTEM, CONDUIT CLAMPS SHALL BE CAT. NO. PS-1100-2-1/2", AND MOUNTING CHANNELS SHALL BE CAT. NO. PS-200-2T2. END CAPS SHALL BE INSTALLED ON ENDS OF CHANNELS. SPRING LOADED NUTS AND BOLTS SHALL BE SIZED TO MATCH MOUNTING HOLES IN PANEL (MINIMUM DIA. OF BOLTS SHALL BE 1/2" AND 5/8" MOUNTING HOLES). ALL CHANNELS AND ACCESSORIES SHALL BE ELECTRO-GALVANIZED OR HOT-DIPPED GALVANIZED.
 - SYSTEM: 120/240 V., 3-WIRE CONTINUOUS GROUND, SINGLE PHASE.
 - SQUARE-D TYPE HCM I-LINE, OR GENERAL ELECTRIC TYPE CCB, PANELBOARD.
 - APPROPRIATE AMP LA (SQUARE-D) OR TJD (G.E.) 2-POLE MAIN CIRCUIT BREAKER.
 - SOLID NEUTRAL.
 - EQUIPMENT GROUND BAR MOUNTED IN PANEL.
 - DEADFRONT, NEMA TYPE 3R ENCLOSURE.
 - GASKET SEALING AROUND DOOR OPENING.
 - CONCEALED DOOR HINGE.
 - THREE-POINT VAULT TYPE LOCKING MECHANISM WITH CHROME FINISH PAD-LOCKING HANDLE.
 - CABINET FINISH: RUST INHIBITING PRIMER AND FINISH COAT OF STANDARD GRAY BAKED ENAMEL.
 - BRANCH BREAKERS: TYPES FA & Q2 (SQUARE-D) OR TYPES TEB & TQD (G.E.) THERMAL MAGNETIC CIRCUIT BREAKERS.

**CAMPGROUND ELECTRICAL SYSTEM
STANDARD DRAWING NO. MP-2**

**DETAILS OF PAD-MOUNTED
400,600,800 AMP / 240 VOLT
MAIN DISTRIBUTION PANEL**

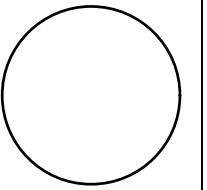
REVISION DATE 1/25/95



**PLAN DETAIL
TYPICAL DISTRIBUTION PANEL**

NOT TO SCALE

CONSULTANT:



**IOWA DEPARTMENT OF
NATURAL RESOURCES**

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



DETAILS

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

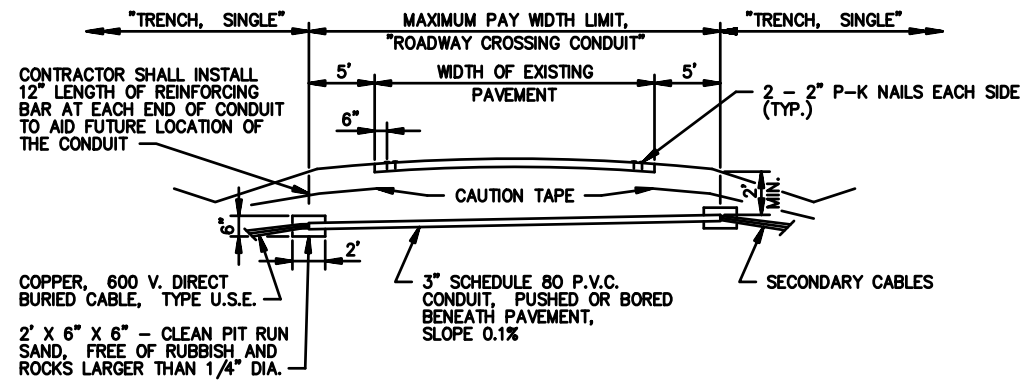
VAN BUREN COUNTY

NO. DATE REVISION

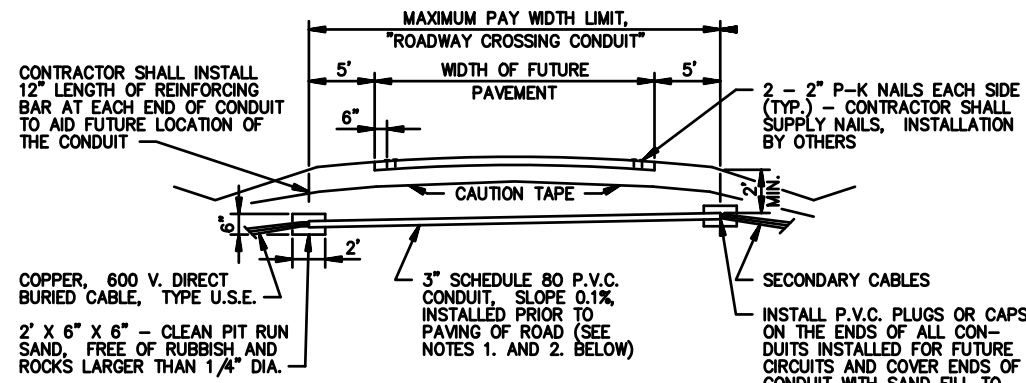
DRAWN BY: PROJECT NUMBER:
17-06-89-01

CHK'D BY: DATE:
OCTOBER 26, 2017

SHEET No:



ROADWAY CROSSING CONDUIT BENEATH EXISTING PAVED ROAD

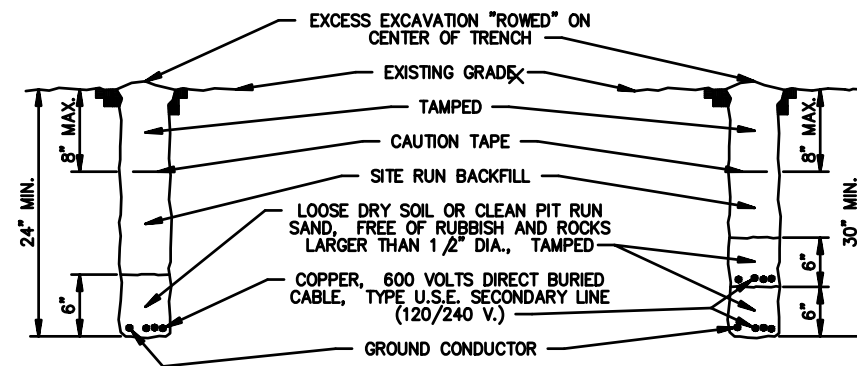


ROADWAY CROSSING CONDUIT BENEATH FUTURE PAVEMENT

NOTES:

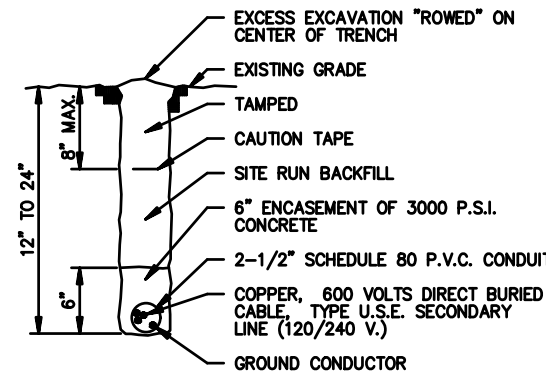
- FOR ROADWAY CROSSING CONDUIT BENEATH FUTURE PAVEMENT, PLACE CONDUIT IN TRENCH THAT IS GRADED TRUE AND IS FREE FROM STONES OR SOFT SPOTS. IN ROCKY SOIL, PLACE SELECTED BACKFILL IN BOTTOM OF TRENCH AND AROUND CONDUIT.
- TRENCH BACKFILL, PLACED AROUND ROADWAY CROSSING CONDUIT BENEATH FUTURE PAVEMENT, SHALL BE FREE FROM STONES AND BE FIRMLY TAMPED AROUND THE SIDES (NOT THE TOP) OF THE CONDUIT. TO DEVELOP MAXIMUM SUPPORTING STRENGTH. COMPACTION OF TOP 12" OF BACKFILL BENEATH FUTURE PAVEMENT WILL BE CONSIDERED SUITABLE IF THE RESULTING DENSITY WITH ADEQUATE MOISTURE, IS REASONABLY UNIFORM THROUGHOUT EACH COMPACTED LIFT AND IS AT LEAST 95 PERCENT OF MAXIMUM DENSITY, DETERMINED IN ACCORDANCE WITH STANDARD PROCTOR DENSITY TEST.

CAMPGROUND ELECTRICAL SYSTEM STANDARD DRAWING NO. RC-1	
DETAILS OF ROADWAY CROSSING CONDUITS FOR SECONDARY CIRCUITS	
REVISION DATE	1/25/95

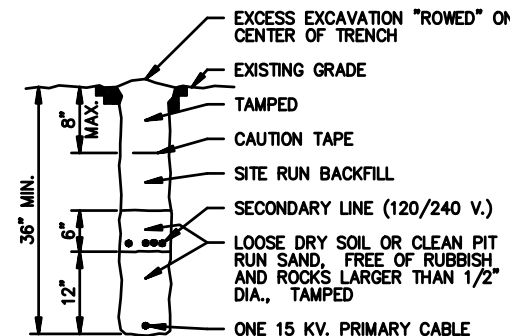


SINGLE TRENCH

DOUBLE TRENCH



SINGLE TRENCH WITH LESS THAN MINIMUM BURIAL DEPTH



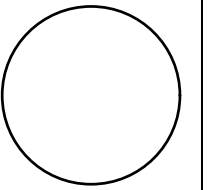
COMBINED PRIMARY AND SECONDARY TRENCH

NOTES:

- AFTER INSTALLATION OF THE ELECTRICAL CONDUCTORS, AND AT LOCATIONS WHERE THE TRENCHING OPERATIONS CROSS THE CAMPSITE VEHICLE PARKING PADS, THE CONTRACTOR SHALL PLACE AND COMPACT A MINIMUM OF 4" OF GRANULAR SURFACING ABOVE THE COMPACTED TRENCH BACKFILL.
- THE CONTRACTOR SHALL SEED AREAS DISTURBED BY TRENCHING ACTIVITY WITH AN "URBAN" OR "RURAL" SEED MIXTURE, AS SPECIFIED ON THE PLAN DRAWINGS. THE COST OF SEEDING SHALL BE CONSIDERED AS INCIDENTAL TO OTHER ITEMS OF WORK.
- TRENCHING AND BACKFILL SHALL CONFORM TO SECTION 02200, PART 3.05 OF THE TECHNICAL SPECIFICATIONS.

CAMPGROUND ELECTRICAL SYSTEM STANDARD DRAWING NO TS-1	
DETAILS OF TRENCHES FOR SECONDARY CIRCUITS	
REVISION DATE	1/21/97

CONSULTANT:



IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



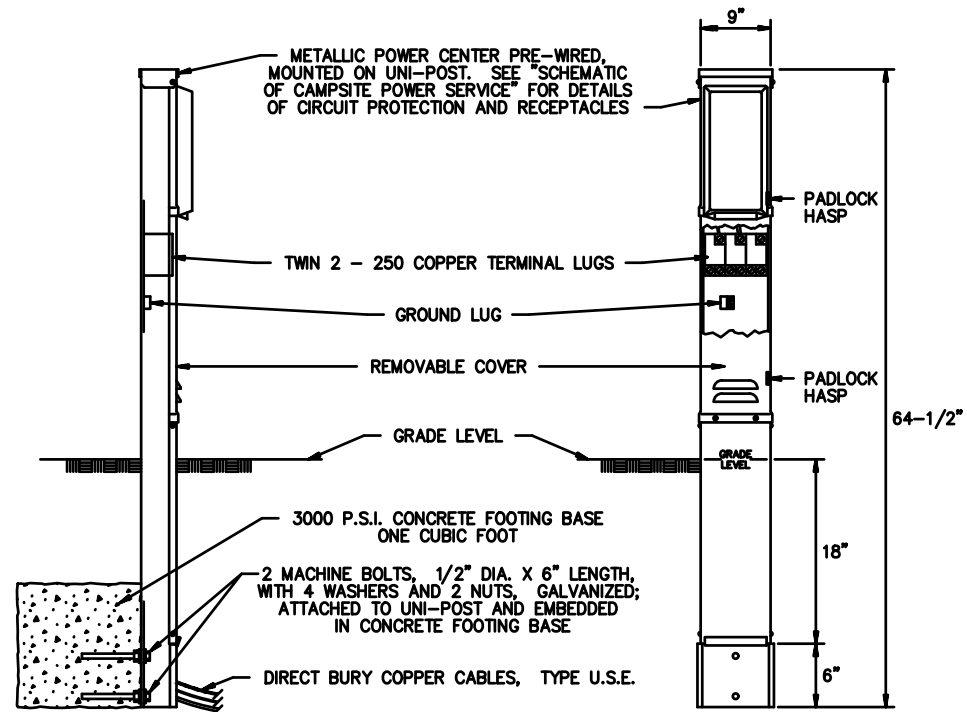
DETAILS
CAMPGROUND IMPROVEMENTS FOR:
LACEY-KEOSAUQUA STATE PARK
VAN BUREN COUNTY

NO. DATE REVISION

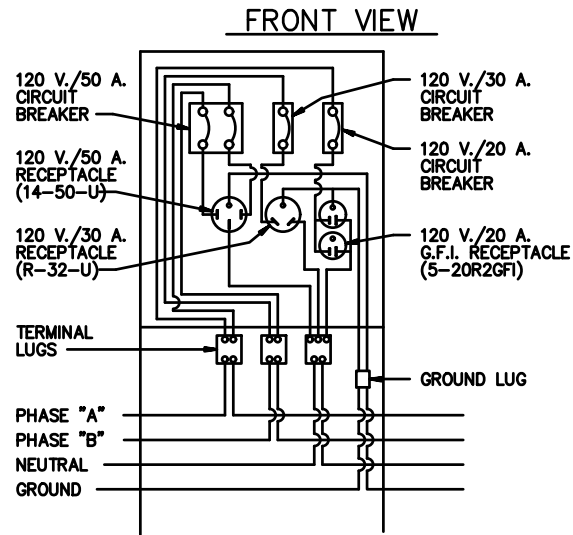
DRAWN BY: PROJECT NUMBER:
17-06-89-01

CHK'D BY: DATE:
OCTOBER 26, 2017

SHEET No:



SIDE VIEW



SCHEMATIC OF CAMPSITE 50 AMP POWER SERVICE

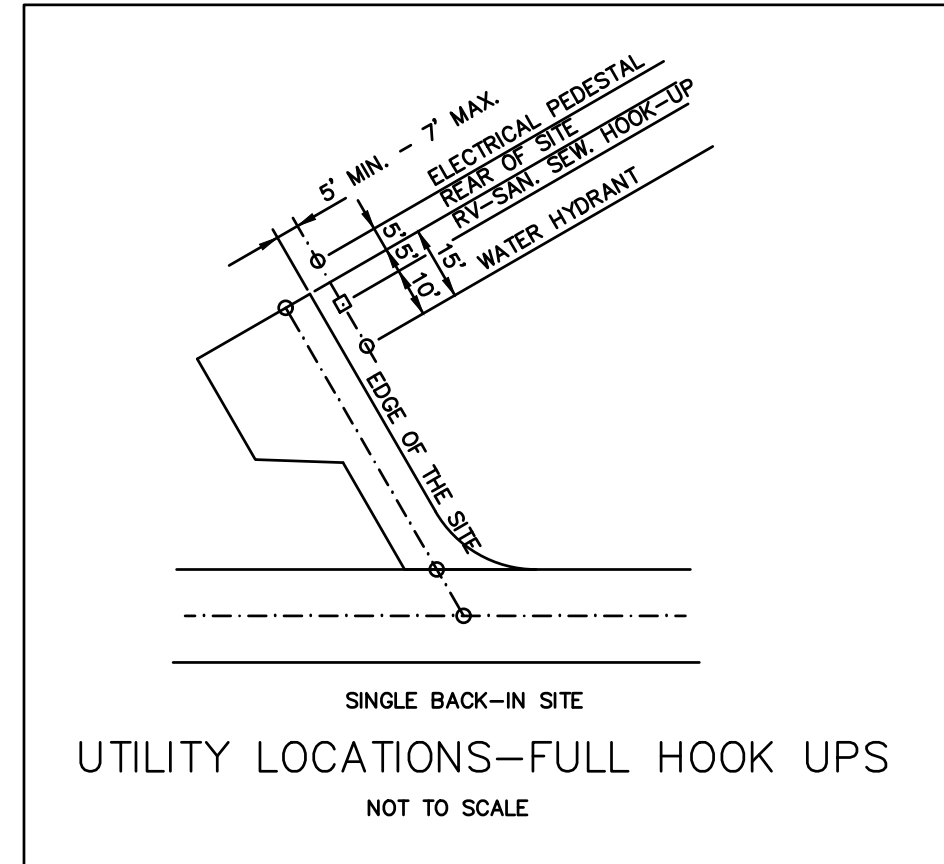
NOTES:

1. A "SINGLE CAMPSITE OUTLET POST-50 AMP" SHALL HAVE THE FOLLOWING CONFIGURATION: AN UNMETERED, POST MOUNTED CABINET WITH A 5-20R2GF 20 AMP DUPLEX RECEPTACLE, A R32U 30 AMP RECEPTACLE, A 14-50R 50 AMP RECEPTACLE, A SINGLE POLE 20 AMP CIRCUIT BREAKER, A SINGLE POLE 30 AMP CIRCUIT BREAKER, AND A DOUBLE POLE 50 AMP CIRCUIT BREAKER; MIDWEST MODEL U075CP6010, MILLBANK U5200-XL-75, OR APPROVED EQUAL, SHALL BE USED FOR SINGLE CAMPSITE OUTLET POST WITH METALLIC POWER CENTER.
2. SEE TRENCH DETAILS, STANDARD DRAWING NO. TS-1, FOR DETAILS OF INSTALLATION OF DIRECT BURY COPPER CABLES TO CAMPSITE OUTLET POST.
3. THE CONDUCTOR SIZES AND THE PLAN ARRANGEMENT OF THE LOADS ON EACH CIRCUIT SHALL BE SELECTED TO LIMIT THE MAXIMUM CIRCUIT VOLTAGE DROP, FROM THE TRANSFORMER TO THE FURTHEST CAMPSITE OUTLET ON THE CIRCUIT, TO 3% (3.6 VOLTS ON EACH 120 V. PHASE). ADJUST CONDUCTOR SIZE BASED ON ACTUAL ROUTING WITH NO ADDITIONAL COMPENSATION.
4. PROVIDE TWO EXTRA COMPLETE OUTLET POSTS AND TURN OVER TO OWNER.

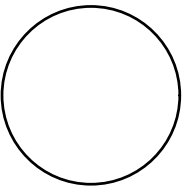
CAMPGROUND ELECTRICAL SYSTEM
STANDARD DRAWING NO. SC-1

DETAILS OF
CAMPSITE OUTLET POST

REVISION DATE 10/26/06



CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

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



DETAILS

CAMPGROUND IMPROVEMENTS FOR:

LACEY-KEOSAUQUA STATE PARK

VAN BUREN COUNTY

NO. DATE REVISION

DRAWN BY: PROJECT NUMBER:
17-06-89-01

CHKD BY: DATE:
OCTOBER 26, 2017

SHEET No: