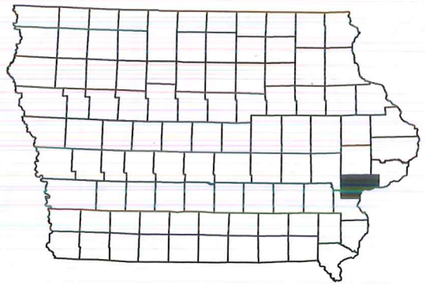
IOWA DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTS FOR FAIRPORT RECREATION AREA CAMPGROUND ELECTRIC UPGRADE PROJECT MUSCATINE COUNTY, IOWA

IOWA ONE CALL
1-800-292-8989 | 811
www.iowaonecall.com

DNR PROJECT #15-06-70-01



LICENSED PROFESSIONAL ENGINEER
BRETT A. JOHNSON
13653
IOWA

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.

7/29/15
BRETT A. JOHNSON, IOWA REG. NO. 13653 DATE
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2015

PAGES OR SHEETS COVERED BY THIS SEAL:
SHEETS 1-12

SHEET INDEX

1	COVER SHEET
2	VICINITY MAPS
3	QUANTITIES & GENERAL NOTES
4	SURVEY CONTROL
5	DEMOLITION PLAN
6	WATER PLAN
7	WATER DETAILS
8	ELECTRICAL PLAN (NORTH 1/2)
9	ELECTRICAL PLAN (SOUTHEAST AREA)
10	ELECTRICAL PLAN (SOUTHWEST AREA)
11	ELECTRICAL DETAILS
12	ELECTRICAL DETAILS

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	BRETT JOHNSON	CONTACT	MICHAEL DUFOE
TELEPHONE	515-250-3711	TELEPHONE	515-985-9196
FAX	515-281-8685	FAX	
EMAIL	brett.johnson@dnr.iowa.gov	EMAIL	michael.dufoe@dnr.iowa.gov

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF UPGRADING THE CAMPGROUND ELECTRIC SYSTEM AND WATER SERVICE LINES LOCATED AT FAIRPORT RECREATION AREA IN MUSCATINE COUNTY, IOWA.

AUTHORIZATION TO BID

7/29/15
AUTHORIZATION - PARKS | WILDLIFE | FISHERIES | LAW ENFORCEMENT | FORESTRY DATE

7/29/15
ENGINEERING BUREAU CHIEF DATE

CONSULTANT:

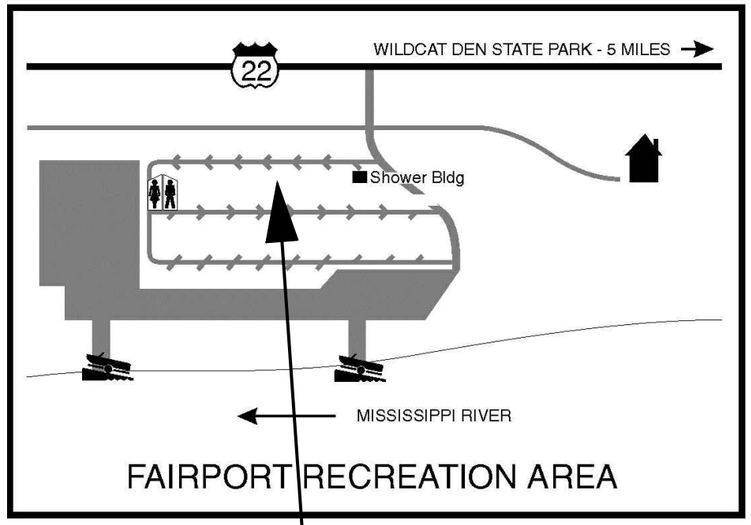
IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

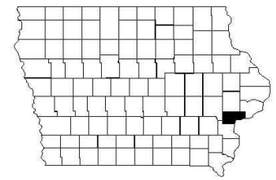
DNR

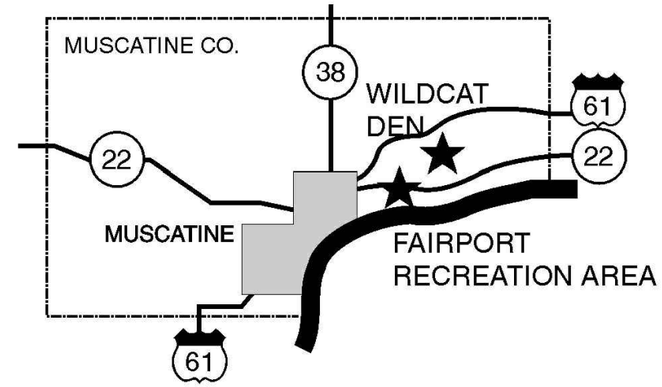
COVER SHEET
CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:
FAIRPORT RECREATION AREA
MUSCATINE COUNTY, IOWA

NO.	BY DATE	REVISION

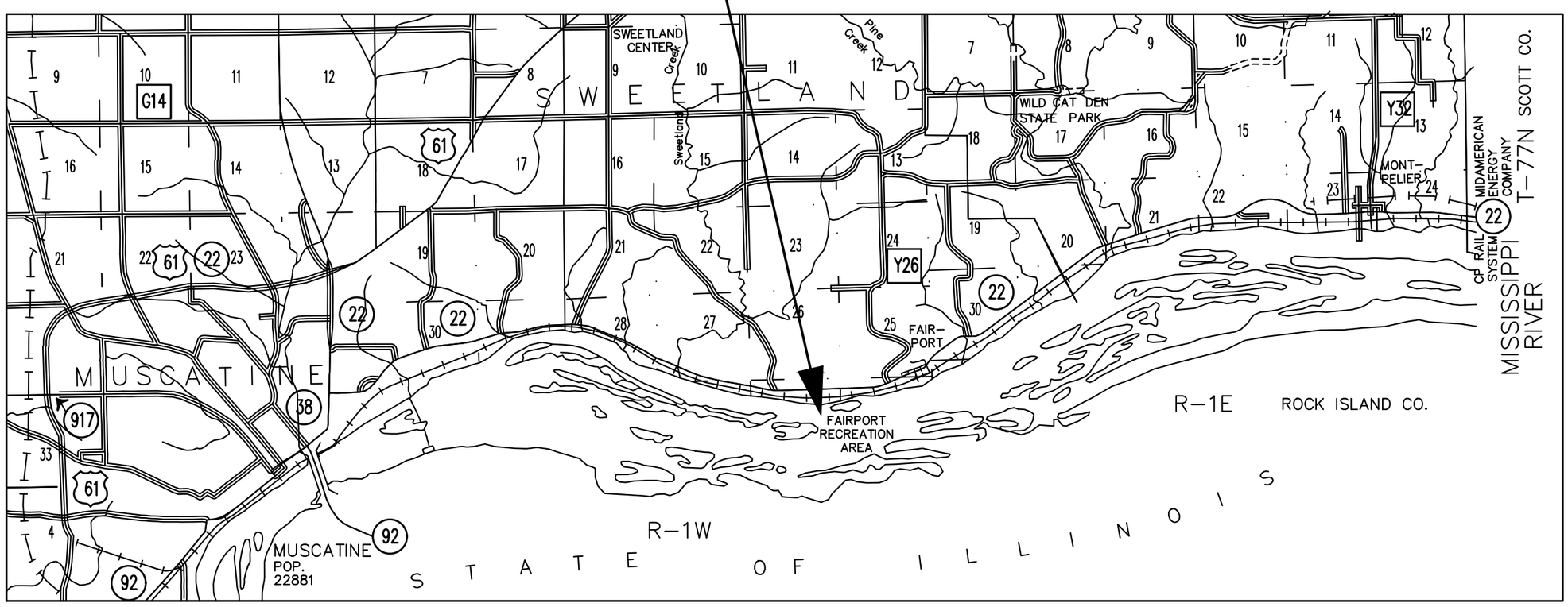
DRAWN BY:
PROJECT NUMBER: 15-06-70-01
CHK'D BY:
DATE: 07/29/2015
SHEET No: 1







PROJECT LOCATION



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

VICINITY MAPS

CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:

FAIRPORT RECREATION AREA

MUSCATINE COUNTY, IOWA

NO.	BY DATE	REVISION

DRAWN BY:

PROJECT NUMBER: 15-06-70-01

CHK'D BY:

DATE: 07/29/2015

SHEET No: 2

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY
1	DEMOLITION	LS	1
2	1-INCH HDPE PIPE	LF	979
3	1.5-INCH HDPE PIPE	LF	291
4	WOODFORD MODEL S-3 SANITARY YARD HYDRANTS	EA	11
5	1x1x1 HDPE TEE	EA	5
6	1.5x1.5x1.5 HDPE TEE	EA	5
7	1.5x1 HDPE REDUCERS	EA	6
8	1.5-INCH CURB STOP	EA	1
9	1-INCH WATERTIGHT CAP	EA	1
10	DISINFECTION	LS	1
11	ELECTRICAL IMPROVEMENTS	LS	1
12	SEEDING, FERTILIZING AND MULCHING	LS	1
13	TRAFFIC CONTROL	LS	1
14	CONSTRUCTION SURVEY STAKING	LS	1
15	MOBILIZATION	LS	1

ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
1	DEMOLITION A. CONTRACTOR TO REMOVE AND DISPOSE OF OFF-SITE PROPERLY THE EXISTING HYDRANTS, VALVES, WATER FOUNTAIN AND PCC PADS AND CAMP PAD ELECTRICAL BOXES, DISTRIBUTION PANELS AND ELECTRIC SERVICE LINES (PROTECT PRIMARY ELECTRIC LINE) AS SHOWN ON SHEET #5.
2	1-INCH HDPE PIPE A. CONTRACTOR SHALL INSTALL 1-INCH HDPE (AWWA C901) WITH LOCATOR TAPE AS DETAILED ON SHEET #6.
3	1.5-INCH HDPE PIPE A. CONTRACTOR SHALL INSTALL 1.5-INCH HDPE PIPE (AWWA C901) WITH LOCATOR TAPE AS DETAILED ON SHEET #6.
4	WOODFORD MODEL S-3 SANITARY YARD HYDRANT A. CONTRACTOR TO INSTALL WOODFORD MODEL S-3 SANITARY YARD HYDRANT (INCLUDING CURB STOPS & CONCRETE PADS) AS DETAILED ON SHEET #6.
5	1x1x1 HDPE TEE A. CONTRACTOR TO INSTALL 1x1x1 HDPE TEE AS DETAILED ON SHEET #6.
6	1.5x1.5x1.5 HDPE TEE A. CONTRACTOR TO INSTALL 1.5x1.5x1.5 HDPE TEE AS DETAILED ON SHEET #6.
7	1.5x1 HDPE REDUCERS A. CONTRACTOR TO INSTALL 1.5x1 HDPE REDUCERS AS DETAILED ON SHEET #6.
8	1.5-INCH CURB STOP A. CONTRACTOR TO INSTALL 1.5-INCH CURB STOP (MUELLER BRAND OR SIMILAR) AS DETAILED ON SHEET #6.
9	1-INCH WATERTIGHT CAP A. CONTRACTOR TO INSTALL 1-INCH WATERTIGHT CAP AS DETAILED ON SHEET #6.
10	DISINFECTION A. CONTRACTOR TO DISINFECT THE WATER LINES.
11	ELECTRICAL IMPROVEMENTS A. CONTRACTOR SHALL INSTALL ELECTRICAL IMPROVEMENTS AS DETAILED ON SHEETS #7-12.
12	SEEDING, FERTILIZING AND MULCHING A. CONTRACTOR SHALL SEED, FERTILIZE AND MULCH ALL DISTURBED AREAS. SEED WITH TYPE 1 SEED MIXTURE (PERMANENT LAWN MIXTURE).
13	TRAFFIC CONTROL A. CONTRACTOR TO INSTALL TYPE III ROAD CLOSED BARRICADE SIGNAGE AT CAMPGROUND ENTRANCE ROAD (LOCATION DETAILED ON SHEET #5).
14	CONSTRUCTION SURVEY STAKING A. CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION SURVEY STAKING FOR THE PROJECT.

GENERAL NOTES

1. TWO WEEKS PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY:
   A. IOWA DNR PROJECT MANAGER: BRETT JOHNSON 515-250-3711
   B. DISTRICT INSPECTOR: MICHAEL DUFOE 515-985-9196

2. CONSTRUCTION CAN BEGIN AFTER CONTRACTS ARE IN PLACE (APPROXIMATELY 10/1/2015) AND MUST BE COMPLETED BY 5/21/16.

3. 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.

4. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ABOVE MENTIONED CONTACTS OF ANY DISCREPANCIES.

5. 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.

6. 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.

7. CONTRACTOR TO PROTECT ALL UTILITY, PAVING, BUILDINGS, ETC. OUTSIDE OF LIMITS OF PROPOSED CONSTRUCTION.

8. PROTECT EXISTING TREES AND VEGETATION OUTSIDE OF CONSTRUCTION AREAS.

CONSULTANT:

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

QUANTITIES & GENERAL NOTES

CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:
FAIRPORT RECREATION AREA
MUSCATINE COUNTY, IOWA

NO.	BY: DATE	REVISION

DRAWN BY:
CHK'D BY:
PROJECT NUMBER: 15-06-70-01
DATE: 07/29/2015
SHEET No: 3

SURVEY CONTROL POINTS

SURVEY CONTROL POINT #101		SURVEY CONTROL POINT #204		SURVEY CONTROL POINT #205		SURVEY CONTROL POINT #207		SURVEY CONTROL POINT #208	
N:	532138.969	N:	532424.220	N:	532432.955	N:	532341.353	N:	532219.890
E:	2346600.505	E:	2346419.314	E:	2346636.798	E:	2346758.247	E:	2346418.637
ELEV:	551.790	ELEV:	556.705	ELEV:	561.808	ELEV:	559.742	ELEV:	552.168
PK NAIL IN ASPHALT		PK NAIL IN ASPHALT		PK NAIL IN ASPHALT		PK NAIL IN ASPHALT		PK NAIL IN ASPHALT	

0 50
FEET

LEGEND

EXISTING/PROPOSED

- SAN 8" — SANITARY SEWER
- ST 8" — STORM SEWER
- E — ELECTRIC LINE
- W 2" — WATER MAIN
- 990 — ELEVATION

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

SURVEY CONTROL

CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:

FAIRPORT RECREATION AREA

MUSCATINE COUNTY, IOWA

NO.	BY / DATE	REVISION

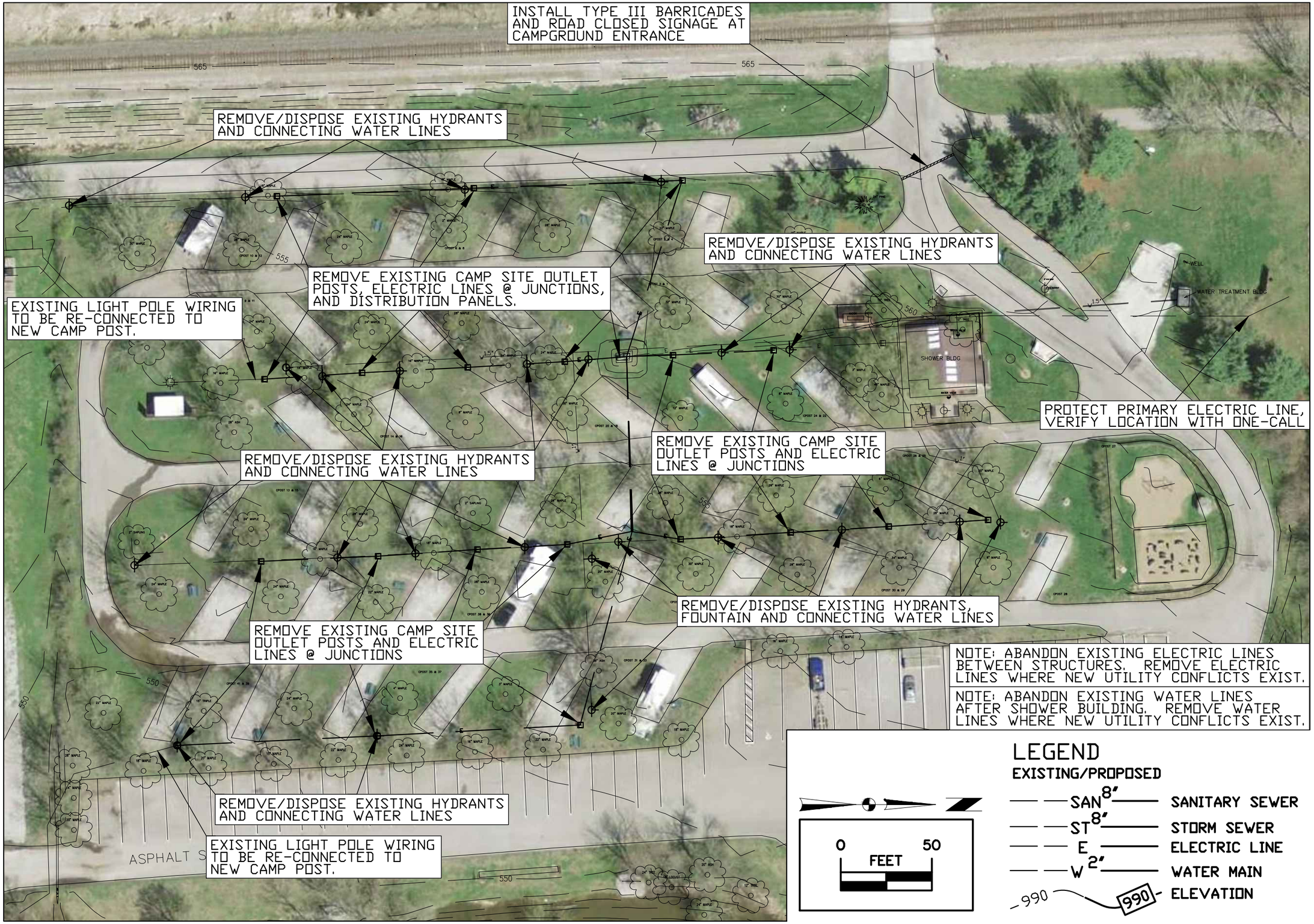
DRAWN BY:

PROJECT NUMBER: 15-06-70-01

CHK'D BY:

DATE: 07/29/2015

SHEET No: 4



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

DEMOLITION PLAN

CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:

FAIRPORT RECREATION AREA

MUSCATINE COUNTY, IOWA

NO.	BY DATE	REVISION

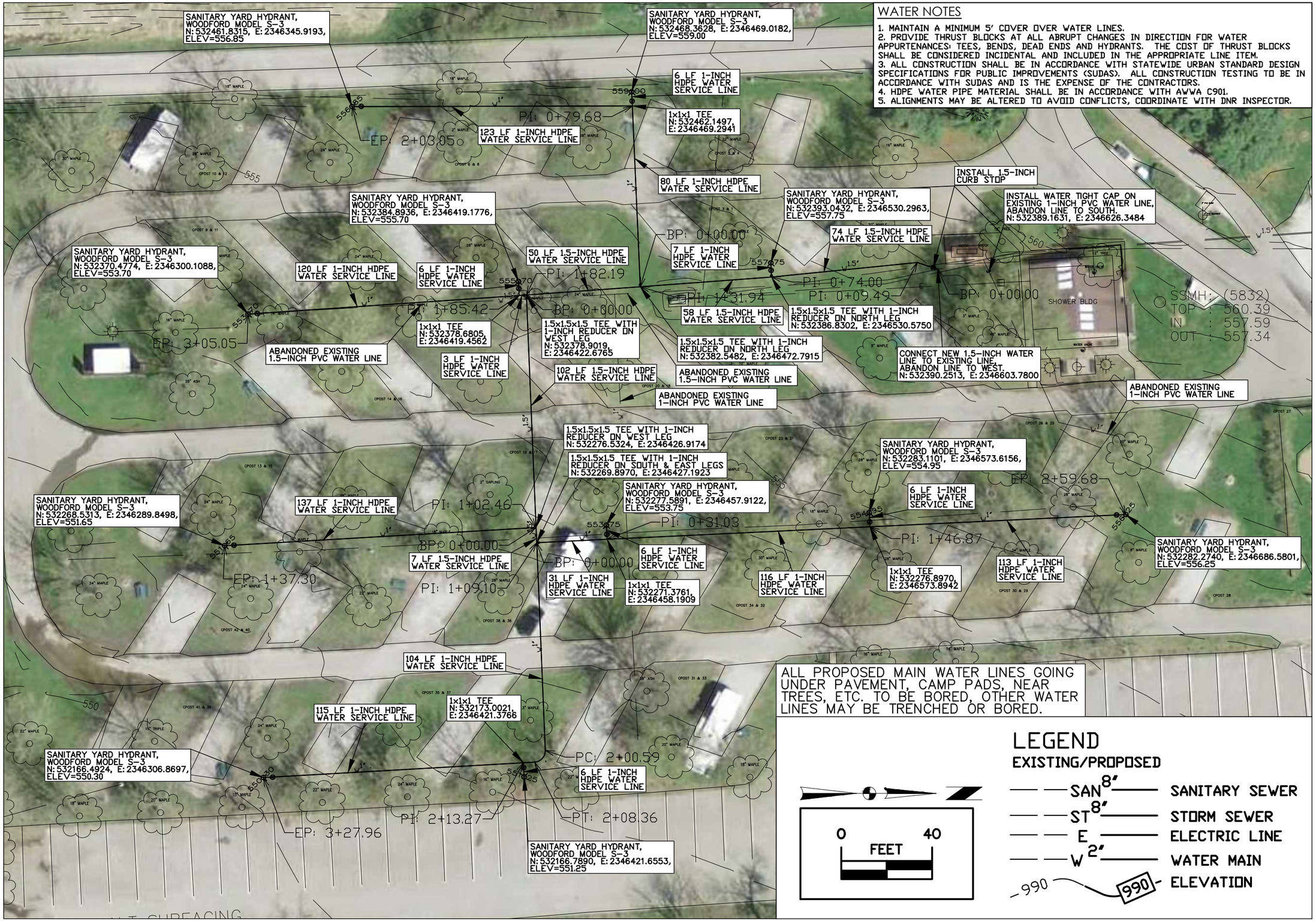
DRAWN BY:

PROJECT NUMBER: 15-06-70-01

CHK'D BY:

DATE: 07/29/2015

SHEET No: 5



WATER NOTES

1. MAINTAIN A MINIMUM 5' COVER OVER WATER LINES.
2. PROVIDE THRUST BLOCKS AT ALL ABRUPT CHANGES IN DIRECTION FOR WATER APPURTENANCES: TEES, BENDS, DEAD ENDS AND HYDRANTS. THE COST OF THRUST BLOCKS SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE APPROPRIATE LINE ITEM.
3. 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.
4. HDPE WATER PIPE MATERIAL SHALL BE IN ACCORDANCE WITH AWWA C901.
5. ALIGNMENTS MAY BE ALTERED TO AVOID CONFLICTS, COORDINATE WITH DNR INSPECTOR.

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

WATER PLAN

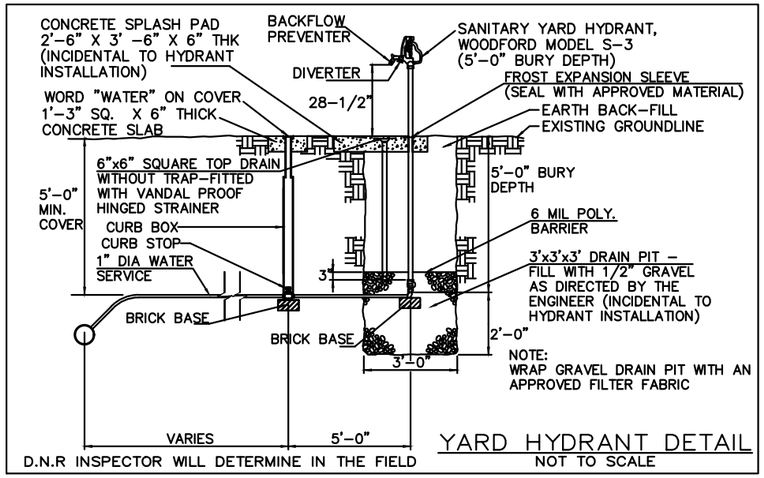
CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:

FAIRPORT RECREATION AREA

MUSCATINE COUNTY, IOWA

NO.	BY: DATE	REVISION

DRAWN BY: | PROJECT NUMBER: 15-06-70-01
CHK'D BY: | DATE: 07/29/2015
SHEET No: 6



WATER MAIN CENTERLINE CONTROL

WATER MAIN FROM EXISTING TIE-IN TO WEST HYDRANT CENTERLINE ALIGNMENT

No.	Type	Length	Direction	Start Station	End Station	Start Point	End Point
1	Line	9.49'	N71° 44' 15"W	0+00.00'	0+09.49'	(2346603.7800',532390.2513') START	(2346594.7673',532393.2254') BEND
2	Line	64.51'	S84° 18' 38"W	0+09.49'	0+74.00'	(2346594.7673',532393.2254') BEND	(2346530.5750',532386.8302') 1" TEE
3	Line	57.94'	S85° 45' 43"W	0+74.00'	1+31.94'	(2346530.5750',532386.8302') 1" TEE	(2346472.7915',532382.5482') 1" TEE
4	Line	50.25'	S85° 50' 19"W	1+31.94'	1+82.19'	(2346472.7915',532382.5482') 1" TEE	(2346422.6765',532378.9019') 1.5" TEE, 1" REDUCER
5	Line	3.23'	S86° 04' 05"W	1+82.19'	1+85.42'	(2346422.6765',532378.9019') 1.5" TEE, 1" REDUCER	(2346419.4562',532378.6805') 1" TEE
6	Line	119.63'	S86° 04' 05"W	1+85.42'	3+05.05'	(2346419.4562',532378.6805') 1" TEE	(2346300.1088',532370.4774') HYDRANT

WATER MAIN TO NORTH CENTERLINE ALIGNMENT

No.	Type	Length	Direction	Start Station	End Station	Start Point	End Point
1	Line	79.68'	N2° 30' 57"W	0+00.00'	0+79.68'	(2346472.7915',532382.5482') 1" REDUCER	(2346469.2941',532462.1497') 1" TEE
2	Line	123.38'	S89° 51' 08"W	0+79.68'	2+03.05'	(2346469.2941',532462.1497') 1" TEE	(2346345.9193',532461.8315') HYDRANT

WATER MAIN TO SOUTH CENTERLINE ALIGNMENT

No.	Type	Length	Radius	Direction	Start Station	End Station	Delta angle	Ch length	Ch Direction	Start Point	End Point
1	Line	102.46'		S2° 22' 20"E	0+00.00'	1+02.46'				(2346422.6765',532378.9019') 1.5" TEE	(2346426.9174',532276.5324') 1.5" TEE
2	Line	6.64'		S2° 22' 20"E	1+02.46'	1+09.10'				(2346426.9174',532276.5324') 1.5" TEE	(2346427.1923',532269.8970')1.5" TEE, 1" REDUCER
3	Line	91.50'		S2° 22' 20"E	1+09.10'	2+00.59'				(2346427.1923',532269.8970') 1.5" TEE, 1" REDUCER	(2346430.9795',532178.4790') BEGIN 5' RADIUS
4	Curve	7.76'	5.00'		2+00.59'	2+08.36'	88.9757 (d)	7.01'	S42° 06' 57"W	(2346430.9795',532178.4790') BEGIN 5' RADIUS	(2346426.2800',532173.2808') END 5' RADIUS
5	Line	4.91'		S86° 44' 46"W	2+08.36'	2+13.27'				(2346426.2800',532173.2808') END 5' RADIUS	(2346421.3766',532173.0021') 1" TEE
6	Line	114.69'		S86° 44' 46"W	2+13.27'	3+27.96'				(2346421.3766',532173.0021') 1" TEE	(2346306.8697',532166.4924') HYDRANT

WATER MAIN TO WEST HYDRANT CENTERLINE ALIGNMENT

No.	Type	Length	Direction	Start Station	End Station	Start Point	End Point
1	Line	137.30'	S86° 39' 33"W	0+00.00'	1+37.30'	(2346426.9174',532276.5324') 1" REDUCER	(2346289.8498',532268.5313') HYDRANT

WATER MAIN TO EAST HYDRANT CENTERLINE ALIGNMENT

No.	Type	Length	Direction	Start Station	End Station	Start Point	End Point
1	Line	31.03'	N87° 16' 05"E	0+00.00'	0+31.03'	(2346427.1923',532269.8970') 1" REDUCER	(2346458.1909',532271.3761') 1" TEE
2	Line	115.84'	N87° 16' 13"E	0+31.03'	1+46.87'	(2346458.1909',532271.3761') 1" TEE	(2346573.8944',532276.8927') 1" TEE
3	Line	112.81'	N87° 15' 57"E	1+46.87'	2+59.68'	(2346573.8944',532276.8927') 1" TEE	(2346686.5801',532282.2740') HYDRANT

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

WATER PLAN DETAILS

CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:
FAIRPORT RECREATION AREA
MUSCATINE COUNTY, IOWA

NO.	BY	DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 15-06-70-01
CHK'D BY:
DATE: 07/29/2015
SHEET No: 7

#12 CAMPPAD OUTLET POST
N532456.3562, E2346275.9520
FINISH GRADE=556.24

#10 CAMPPAD OUTLET POST
N532458.5345, E2346327.9083
FINISH GRADE=556.10

#8 CAMPPAD OUTLET POST
N532457.9748, E2346389.0530
FINISH GRADE=556.97

#6 CAMPPAD OUTLET POST
N532457.9782, E2346448.2371
FINISH GRADE=558.05

#4 CAMPPAD OUTLET POST
N532459.9917, E2346502.8503
FINISH GRADE=559.40

#2 CAMPPAD OUTLET POST
N532468.5240, E2346554.0386
FINISH GRADE=560.70

TRENCH LENGTH=52'
WIRE LENGTH=62'

TRENCH LENGTH=61'
WIRE LENGTH=71'

TRENCH LENGTH=59'
WIRE LENGTH=69'

TRENCH LENGTH=55'
WIRE LENGTH=65'

TRENCH LENGTH=52'
WIRE LENGTH=62'

TRENCH LENGTH=144'
WIRE LENGTH=159'

21 LF 3-INCH SCHEDULE
80 PVC CONDUIT

#24 CAMPPAD OUTLET POST
N532384.3100, E2346594.2677
FINISH GRADE=558.60

#11 CAMPPAD OUTLET POST
N532368.7753, E2346268.0778
FINISH GRADE=553.25

#9 CAMPPAD OUTLET POST
N532367.5379, E2346322.0844
FINISH GRADE=553.80

#7 CAMPPAD OUTLET POST
N532372.6873, E2346383.4557
FINISH GRADE=554.90

#5 CAMPPAD OUTLET POST
N532375.1858, E2346434.7845
FINISH GRADE=555.55

#3 CAMPPAD OUTLET POST
N532385.4456, E2346490.0637
FINISH GRADE=557.15

#1 CAMPPAD OUTLET POST
N532384.8113, E2346545.6307
FINISH GRADE=557.60

TRENCH LENGTH=46'
WIRE LENGTH=56'

TRENCH LENGTH=49'
WIRE LENGTH=59'

TRENCH LENGTH=21'
WIRE LENGTH=31'

TRENCH LENGTH=6'
WIRE LENGTH=16'

TRENCH LENGTH=8'
WIRE LENGTH=23'

TRENCH LENGTH=9'
WIRE LENGTH=19'

TRENCH LENGTH=12'
WIRE LENGTH=27'

TRENCH LENGTH=11'
WIRE LENGTH=21'

600 AMP DISTRIBUTION PANEL 'A'
N532374.0287, E2346488.0998
FINISH GRADE=558.60

#22 CAMPPAD OUTLET POST
N532380.7131, E2346535.4017
FINISH GRADE=557.45

600 AMP DISTRIBUTION PANEL 'B'
N532374.0287, E2346485.0998
FINISH GRADE=558.60

TRENCH LENGTH=43'
WIRE LENGTH=53'

TRENCH LENGTH=49'
WIRE LENGTH=59'

TRENCH LENGTH=42'
WIRE LENGTH=52'

RE-CONNECT EXISTING LIGHT POLE
WIRING TO #11 CAMPPAD OUTLET POST.
MATCH EXISTING WIRE SIZE (18 LF±).

#18 CAMPPAD OUTLET POST
N532371.4681, E2346430.5130
FINISH GRADE=555.50

TRENCH LENGTH=52'
WIRE LENGTH=62'

#16 CAMPPAD OUTLET POST
N532366.6656, E2346364.5274
FINISH GRADE=554.40

#20 CAMPPAD OUTLET POST
N532373.0252, E2346476.6777
FINISH GRADE=556.70

#14 CAMPPAD OUTLET POST
N532359.2358, E2346318.8486
FINISH GRADE=553.40

ALL PROPOSED ELECTRIC LINES GOING UNDER PAVEMENT, CAMP PADS, NEAR TREES, ETC. TO BE BORED, OTHER ELECTRIC LINES MAY BE TRENCHED OR BORED. ALIGNMENTS MAY BE ALTERED TO AVOID CONFLICTS, COORDINATE WITH DNR INSPECTOR.

LEGEND

EXISTING/PROPOSED

SAN 8"	SANITARY SEWER
ST 8"	STORM SEWER
E	ELECTRIC LINE
W 2"	WATER MAIN
990 / 990	ELEVATION

0 30
FEET

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

ELECTRICAL PLAN (NORTH 1/2)

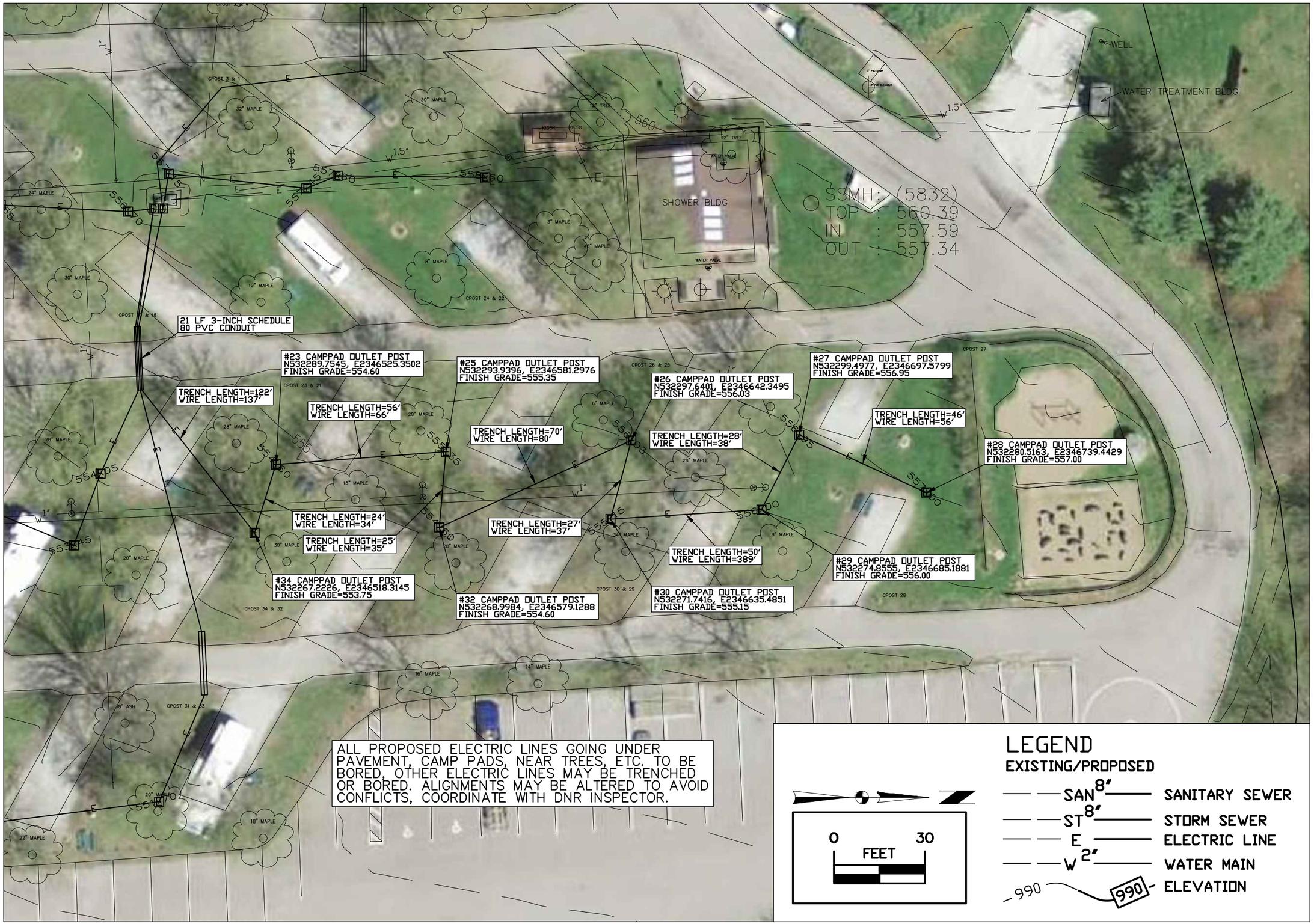
CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:

FAIRPORT RECREATION AREA

MUSCATINE COUNTY, IOWA

NO.	BY DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 15-06-70-01
CHK'D BY:
DATE: 07/29/2015
SHEET No: 8



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

ELECTRICAL PLAN (SE AREA)

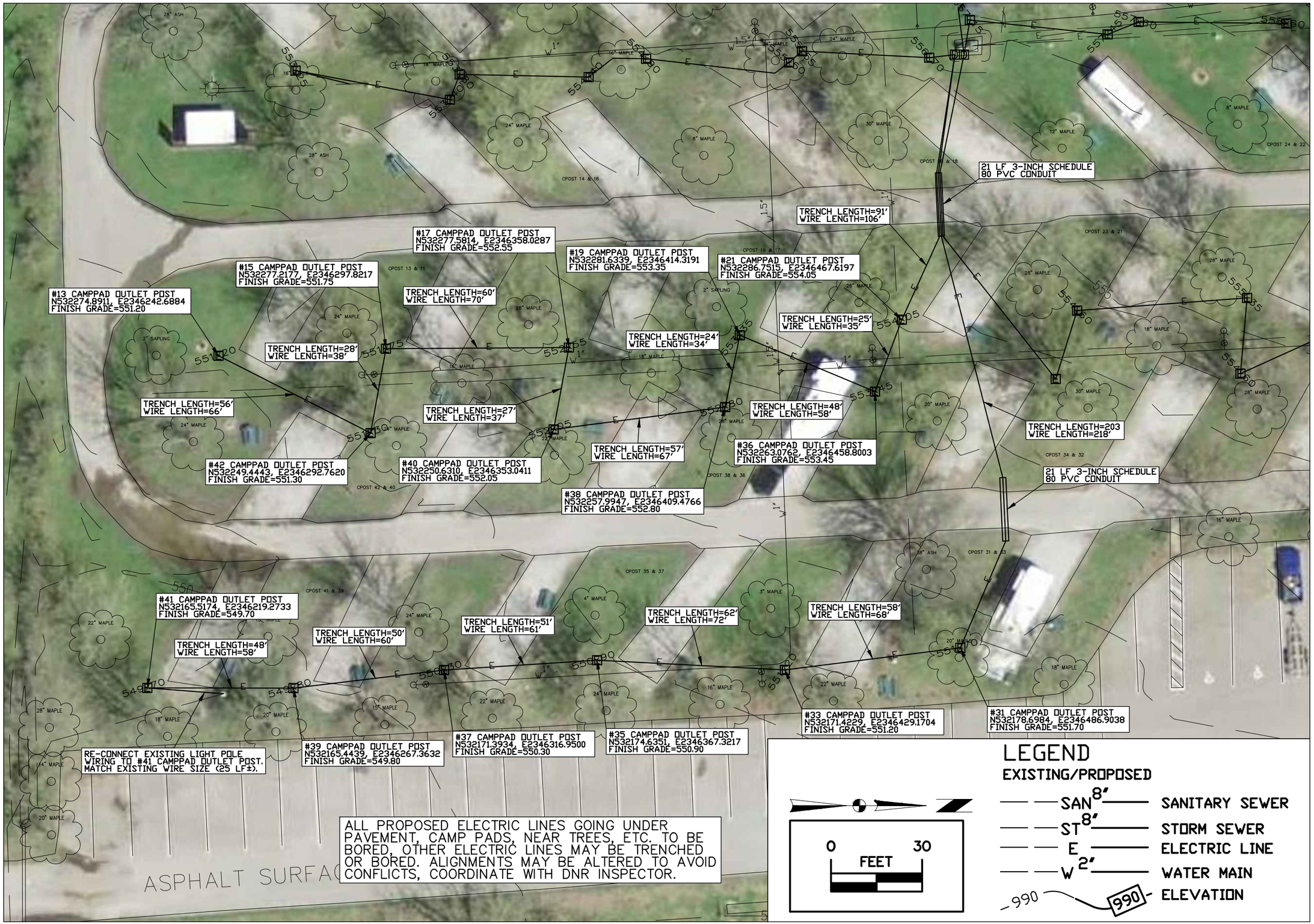
CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:

FAIRPORT RECREATION AREA

MUSCATINE COUNTY, IOWA

NO.	BY	DATE	REVISION

DRAWN BY:
PROJECT NUMBER: 15-06-70-01
CHK'D BY:
DATE: 07/29/2015
SHEET No: 9



CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

ELECTRICAL PLAN (SW AREA)

CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:

FAIRPORT RECREATION AREA

MUSCATINE COUNTY, IOWA

NO.	BY DATE	REVISION

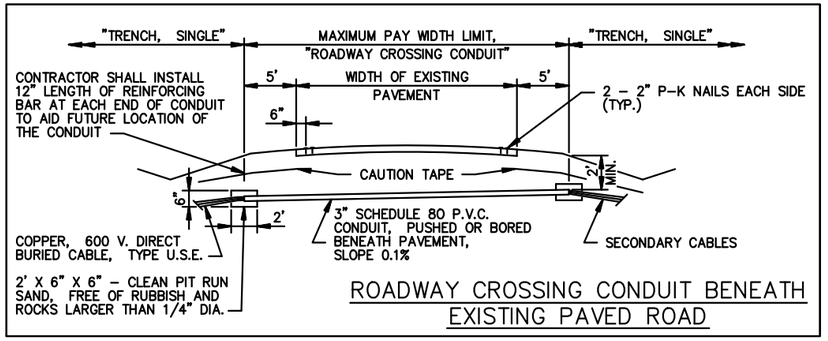
DRAWN BY:

PROJECT NUMBER: 15-06-70-01

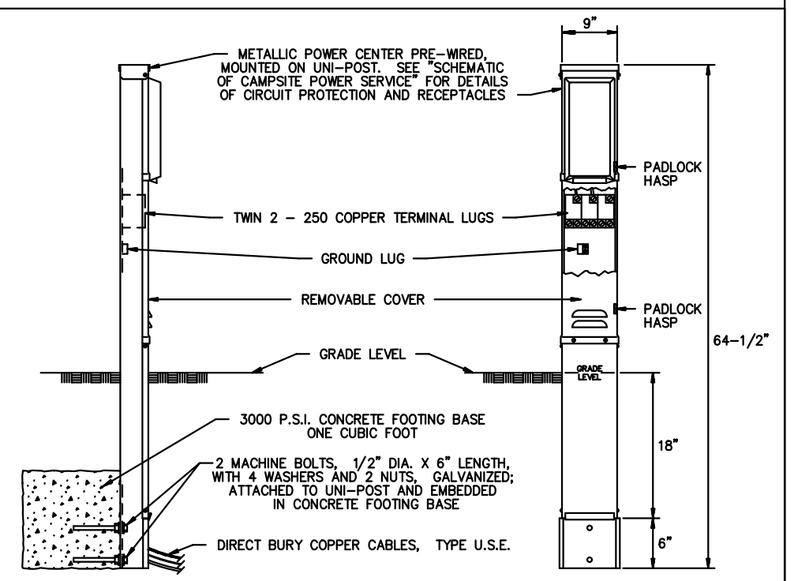
CHK'D BY:

DATE: 07/29/2015

SHEET No: 10



ROADWAY CROSSING CONDUIT BENEATH EXISTING PAVED ROAD

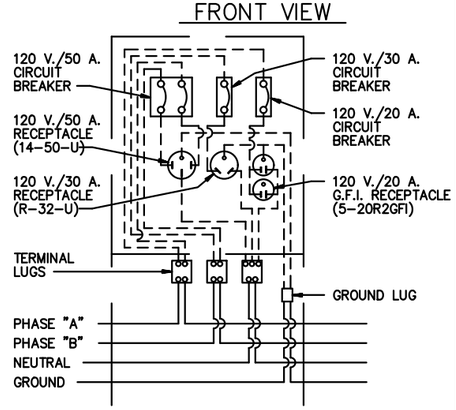


SIDE VIEW

FRONT VIEW

NOTES:

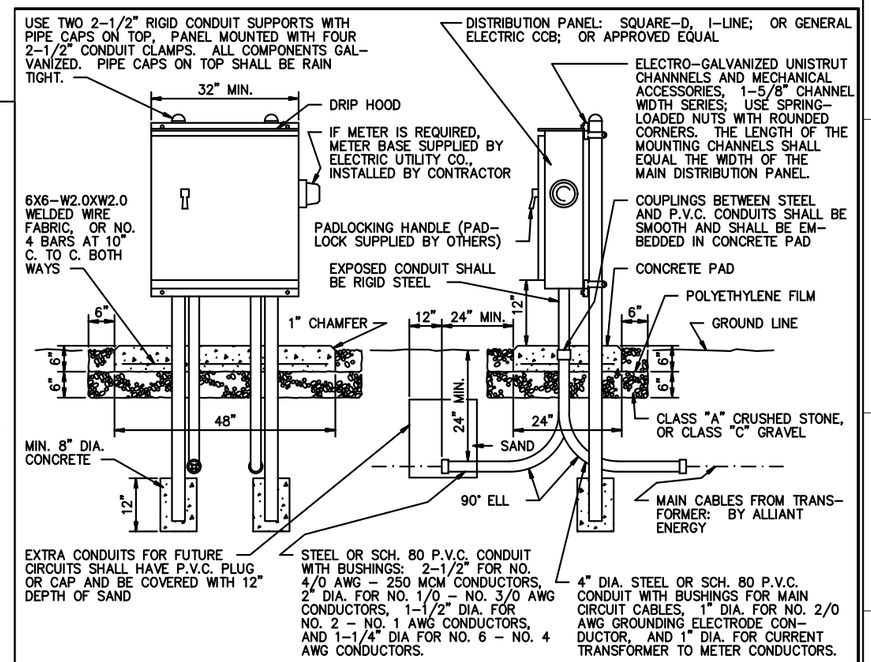
1. A "SINGLE CAMPSITE OUTLET POST-50 AMP" SHALL HAVE THE FOLLOWING CONFIGURATION: AN UNMETERED, POST MOUNTED CABINET WITH A 5-20R2GFI 20 AMP DUPLEX RECEPTACLE, A R32U 30 AMP RECEPTACLE, A 14-50R 50 AMP RECEPTACLE, A SINGLE POLE 20 AMP CIRCUIT BREAKER, A SINGLE POLE 30 AMP CIRCUIT BREAKER, AND A DOUBLE 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.



SCHEMATIC OF CAMPSITE 50 AMP POWER SERVICE

CAMPGROUND ELECTRICAL SYSTEM STANDARD DRAWING NO. SC-1

DETAILS OF CAMPSITE OUTLET POST



PAD-MOUNTED DISTRIBUTION PANEL DETAIL

NOTES:

1. 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.
2. 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.
3. 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.

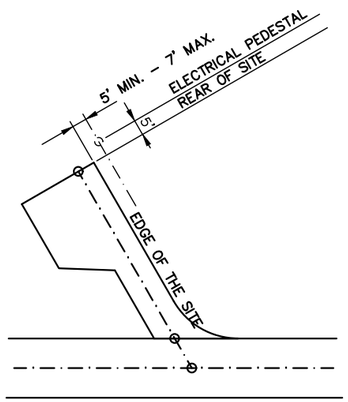
600 AMP/240 VOLT MAIN DISTRIBUTION PANEL FEATURES:

1. SYSTEM: 120/240 V., 3-WIRE CONTINUOUS GROUND, SINGLE PHASE.
2. SQUARE-D TYPE HCM I-LINE, OR GENERAL ELECTRIC TYPE CCB, PANELBOARD.
3. 600 AMP MA (SQUARE-D) OR TJK6 (G.E.) 2-POLE MAIN CIRCUIT BREAKER, EXCEPT WHEN PLAN DRAWINGS REQUIRE MAIN LUGS ONLY.
4. SOLID NEUTRAL.
5. EQUIPMENT GROUND BAR MOUNTED IN PANEL.
6. DEADFRONT, NEMA TYPE 3R ENCLOSURE.
7. GASKET SEALING AROUND DOOR OPENING.
8. CONCEALED DOOR HINGE.
9. THREE-POINT VAULT TYPE LOCKING MECHANISM WITH CHROME FINISH PAD-LOCKING HANDLE.
10. CABINET FINISH: RUST INHIBITING PRIMER AND FINISH COAT OF STANDARD GRAY BAKED ENAMEL.
11. BRANCH BREAKERS: TYPES FA & Q2 (SQUARE-D) OR TYPES TEB & TQD (G.E.) THERMAL MAGNETIC CIRCUIT BREAKERS.

CAMPGROUND ELECTRICAL SYSTEM STANDARD DRAWING NO. MP-3

DETAILS OF PAD-MOUNTED 600 AMP / 240 VOLT MAIN DISTRIBUTION PANEL

REVISION DATE 1/25/95



SINGLE BACK-IN SITE

OUTLET POST LOCATION

NOT TO SCALE

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

ELECTRICAL DETAILS

CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:

FAIRPORT RECREATION AREA

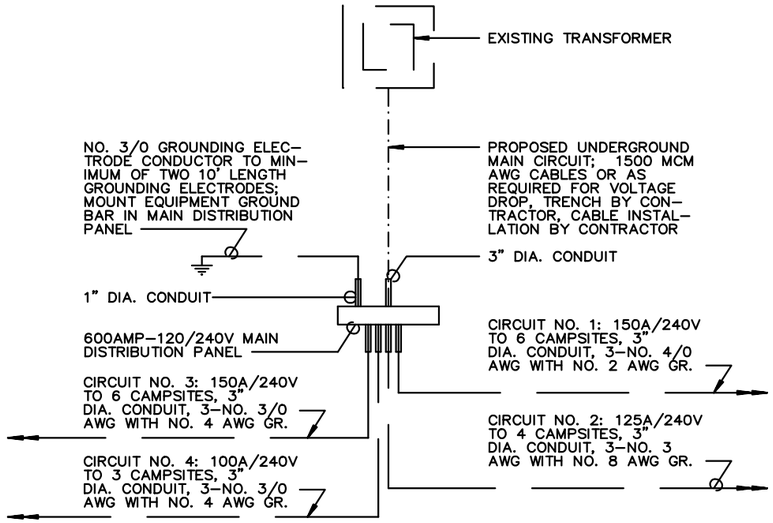
MUSCATINE COUNTY, IOWA

NO.	BY / DATE	REVISION

DRAWN BY: | PROJECT NUMBER: 15-06-70-01

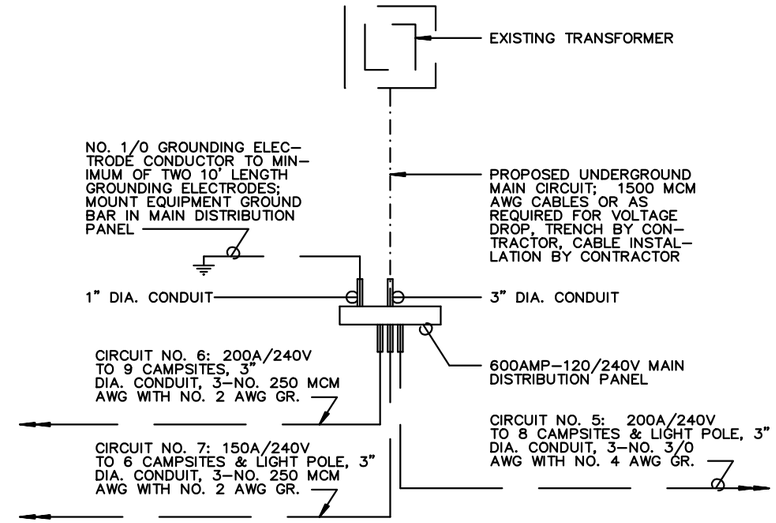
CHK'D BY: | DATE: 07/29/2015

SHEET No: 11



PLAN DETAIL
MAIN DISTRIBUTION PANEL A

NOT TO SCALE



PLAN DETAIL
MAIN DISTRIBUTION PANEL B

NOT TO SCALE

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.S.E.					TYPE U.F.	
			SGL.	DBL.	TRPL.				#8	#4	#2	#3	#2/0	#3/0	#4/0	250 MCM		
MAIN CIRCUIT		600 AMP DISTRIBUTION PANEL A																
3 PAIR																		
1500 MCM																		
1N/1GR			423			21	423	150/2–P			488				488			
1A	6	2, 4, 6, 8, 10, 12													488			
1B	(6)	(2, 4, 6, 8, 10, 12)													488			
2N/2GR			118				118	125/2–P	163			163						
2A	4	3, 22, 1, 24										163						
2B	(4)	(3, 22, 1, 24)										163						
3N/3GR				324		21	324	150/2–P		389				389				
3A	6	34, 23, 25, 32, 26, 30												389				
3B	(6)	(34, 23, 25, 32, 26, 30)												389				
4N/4GR			124				124	100/2–P		483				483				
4A	3	29, 27, 28												483				
4B	(3)	(29,27,28)												483				
MAIN CIRCUIT		600 AMP DISTRIBUTION PANEL B																
3 PAIR																		
1500 MCM																		
5N/5GR			230				230	200/2–P		315				315				
5A	8	20, 5, 18, 7, 16, 9, 14, 11 & LIGHT												315				
5B	(8)	(20, 5, 18, 7, 16, 9, 14, 11 & LIGHT)												315				
6N/6GR			416				416	200/2–P			511					511		
6A	9	21, 36, 19, 38, 17, 40, 15, 42, 13														511		
6B	(9)	(21, 36, 19, 38, 17, 40, 15, 42, 13)														511		
7N/7GR			472			21	472	150/2–P			537					537		
7A	6	31, 33, 35, 37, 39, 41 & LIGHT														537		
7B	(6)	(31, 33, 35, 37, 39, 41 & LIGHT)														537		
SUB–TOTAL	42	SECONDARY CIRCUITS	1783	324		63	2107	–	163	1187	1536	163	–	1187	488	1048	–	–
SUB–TOTAL	–	MAIN CIRCUITS	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL	42	FOR ALL CIRCUITS	1783	324		63	2107	–	163	1187	1536	163	–	1187	488	1048	–	–

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

CONSULTANT:

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

ELECTRICAL DETAILS

CAMPGROUND ELECTRIC UPGRADE PROJECT FOR:

FAIRPORT RECREATION AREA

MUSCATINE COUNTY, IOWA

NO.	BY DATE	REVISION

DRAWN BY:

PROJECT NUMBER: 15-06-70-01

CHK'D BY:

DATE: 07/02/2014

SHEET No: 12