0 150
FEET

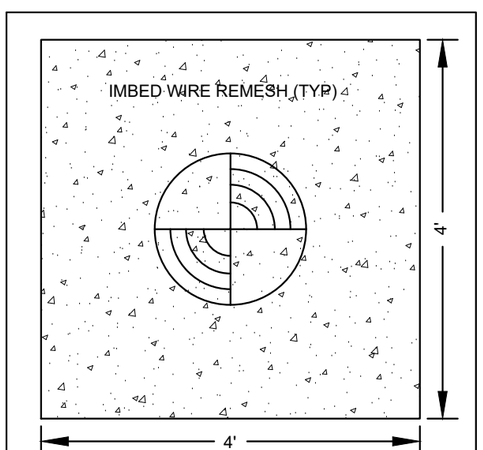
# LEGEND

EXISTING/PROPOSED

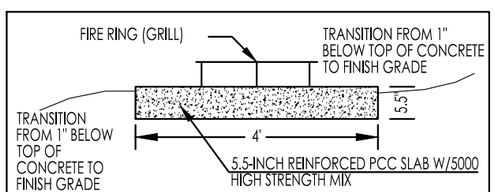
- SAN 6" — SANITARY SEWER
- ST 12" — STORM SEWER
- E — ELECTRIC LINE
- W 2" — WATER MAIN
- MANHOLE/CLEANOUT
- HYDRANT
- VALVE
- 990 — ELEVATION
- 1144x50 — SPOT ELEVATION
- FILTER SOCK
- DRAINAGE SWALE

## 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: JASON KRUSE 515-250-3707
2. 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.
3. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ABOVE MENTIONED CONTACTS OF ANY DISCREPANCIES.
4. 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.
5. 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.
6. CONTRACTOR TO PROTECT ALL UTILITY, PAVING, BUILDINGS, ETC. OUTSIDE OF LIMITS OF PROPOSED CONSTRUCTION.
7. IN THE EVENT THAT THERE IS A DISCREPANCY BETWEEN THE QUANTITIES AND THE PLANS, THE DETAILED PLANS SHALL GOVERN.
8. CONTRACTOR SHALL SEED/MULCH ALL DISTURBED AREAS. USE TYPE 1 (PERMANENT LAWN MIXTURE) SEED MIX.
9. MAINTAIN ALL CUT AND FILL AREAS TO ACCOMMODATE SURFACE DRAINAGE.
10. FINISHED GRADE ON ALL NON-PAVED AREAS SHALL BE WITHIN 0.20 FOOT OF PLAN GRADE. PAVED AREAS SHALL BE WITHIN 0.10 FOOT.
11. TOPSOIL SHALL BE SPREAD TO A MINIMUM THICKNESS OF 4-INCHES ON ALL DISTURBED UNPAVED AREAS.
12. BACKFILL TO THE TOP OF ALL ROCK OR PAVED SURFACES.
13. ALL ELEVATIONS ARE TO THE GUTTER GRADE UNLESS NOTED OTHERWISE.
14. PROTECT ALL EXISTING TREES AND VEGETATION UNLESS OTHERWISE NOTED.
15. ANY SPOIL MATERIAL THAT MAY BE GENERATED DURING THE CONSTRUCTION, COORDINATE LOCATION FOR DISPOSITION WITH THE DNR INSPECTOR AND IS CONSIDERED INCIDENTAL TO THE PROJECT. THE AREA IN THE SOUTHEAST (SOUTH ROADS #5 & 6) HAVE THE MOST FILL AND CAN BE USED FOR THE EXCAVATED EXISTING GRAVEL PADS IF NEEDED. COMPACT TO 95% STANDARD DENSITY IN 6-INCH LIFTS.
16. GRADING CUT/FILL QUANTITY IS APPROXIMATELY 18,000 CUBIC YARDS AND IS A LUMP SUM BID ITEM.

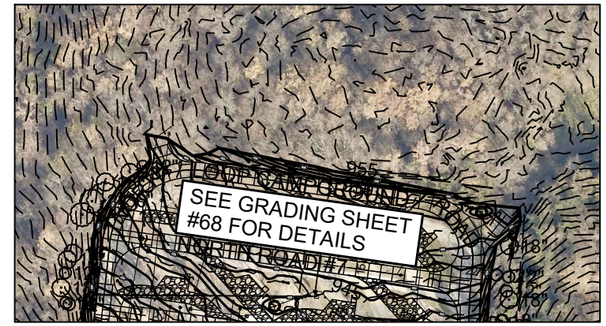



4'x4' FIRE RING DETAIL (PLAN)
NO SCALE



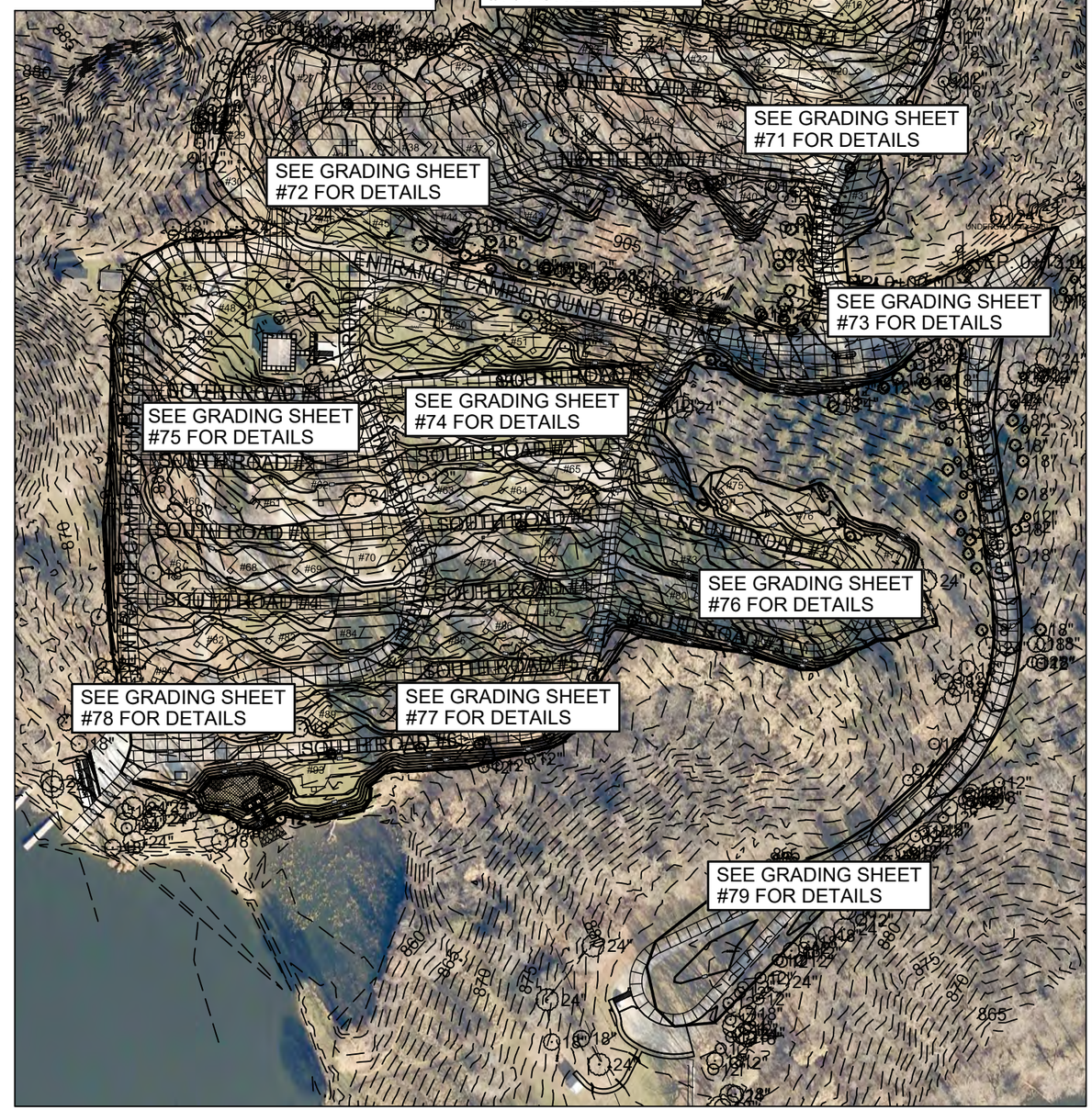

4'x4' FIRE RING DETAIL (PROFILE)
NO SCALE

FIRE RING NOTES:
1. FIRE RINGS SHALL BE 4'x4'x5.5" DEPTH (USE 2"x6" BOARDS FOR FORMS).
2. THEY SHALL HAVE WIRE REMESH PLACED AT MID-DEPTH (2.75").
3. CONTRACTOR TO SET THE CAMPFIRE RING ANCHORS INTO THE WET CEMENT. CONTRACTOR TO VERIFY ANCHOR DEPTH SUCH THAT GRILL WILL BE LEVEL AND FLUSH ON NEW CONCRETE SLAB.
4. CONTRACTOR TO USE 5,000 PSI HIGH STRENGTH CONCRETE THAT SETS IN 10-12 HOURS FOR THE FIRE RINGS (1.8 SY EACH). FIRE RINGS NEED TO CURE FOR 180 DAYS (6 MONTHS) PRIOR TO FIRE USAGE, CONTRACTOR TO POUR THE FIRE RINGS TO ACCOMMODATE THIS SCHEDULE.
5. TOP OF FIRE RINGS SHALL BE 1-INCH ABOVE FINISH GRADE FOR DRAINAGE.
6. ALL ITEMS DESCRIBED TO BE INCLUDED IN BID ITEM.
7. THERE ARE 93 FIRE RINGS IN TOTAL 5 OF WHICH WILL BE ADA APPROVED (18-INCH HEIGHT), THE OTHER 88 GRILLS WILL BE 12-INCH HEIGHTS. THE ADA SITES ARE CAMPPADS #3, 27, 34, 54 AND 60.
8. GRILLS SHALL BE IOWA PRISON INDUSTRIES MODEL SPE2389A1 (SURFACE MOUNT W/WARMING & CONDIMENTS TRAY, 12" HEIGHT, 88 UNITS) AND ADA MODEL SPE2389B1 (SURFACE MOUNT W/WARMING & CONDIMENTS TRAY, 18" HEIGHT, 5 UNITS) OR EQUIVALENTS (IF APPROVED BY THE DNR).




SEE ADJACENT FOR CONTINUATION

SEE ADJACENT FOR CONTINUATION




CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

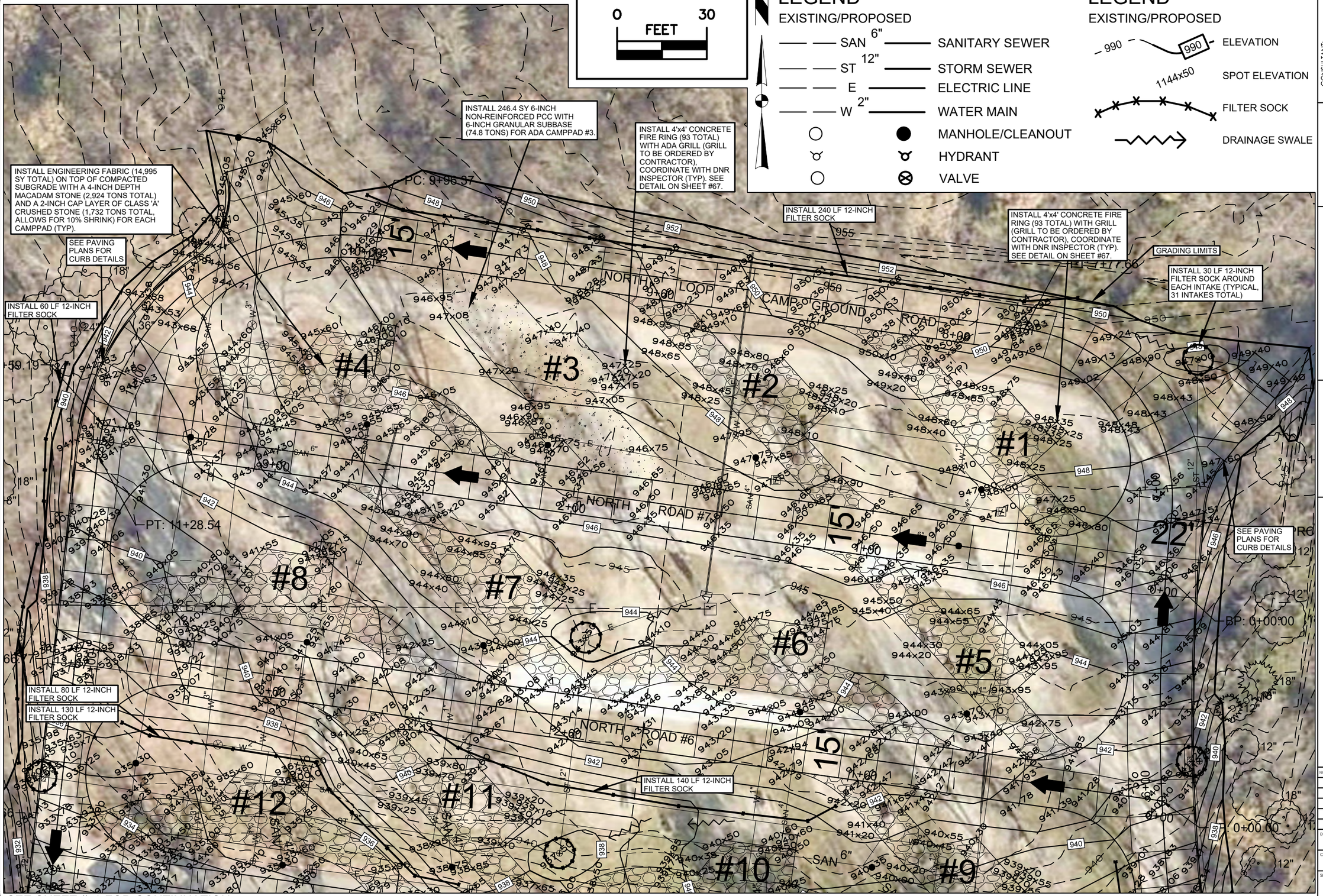
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

OVERALL GRADING PLAN

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 67




# LEGEND

EXISTING/PROPOSED

- SAN 6" — SANITARY SEWER
- ST 12" — STORM SEWER
- E — ELECTRIC LINE
- W 2" — WATER MAIN
- MANHOLE/CLEANOUT
- HYDRANT
- VALVE

# LEGEND

EXISTING/PROPOSED

- 990 / 990 — ELEVATION
- 1144x50 — SPOT ELEVATION
- FILTER SOCK
- DRAINAGE SWALE

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

GRADING PLAN

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

DATE: 12/29/2021

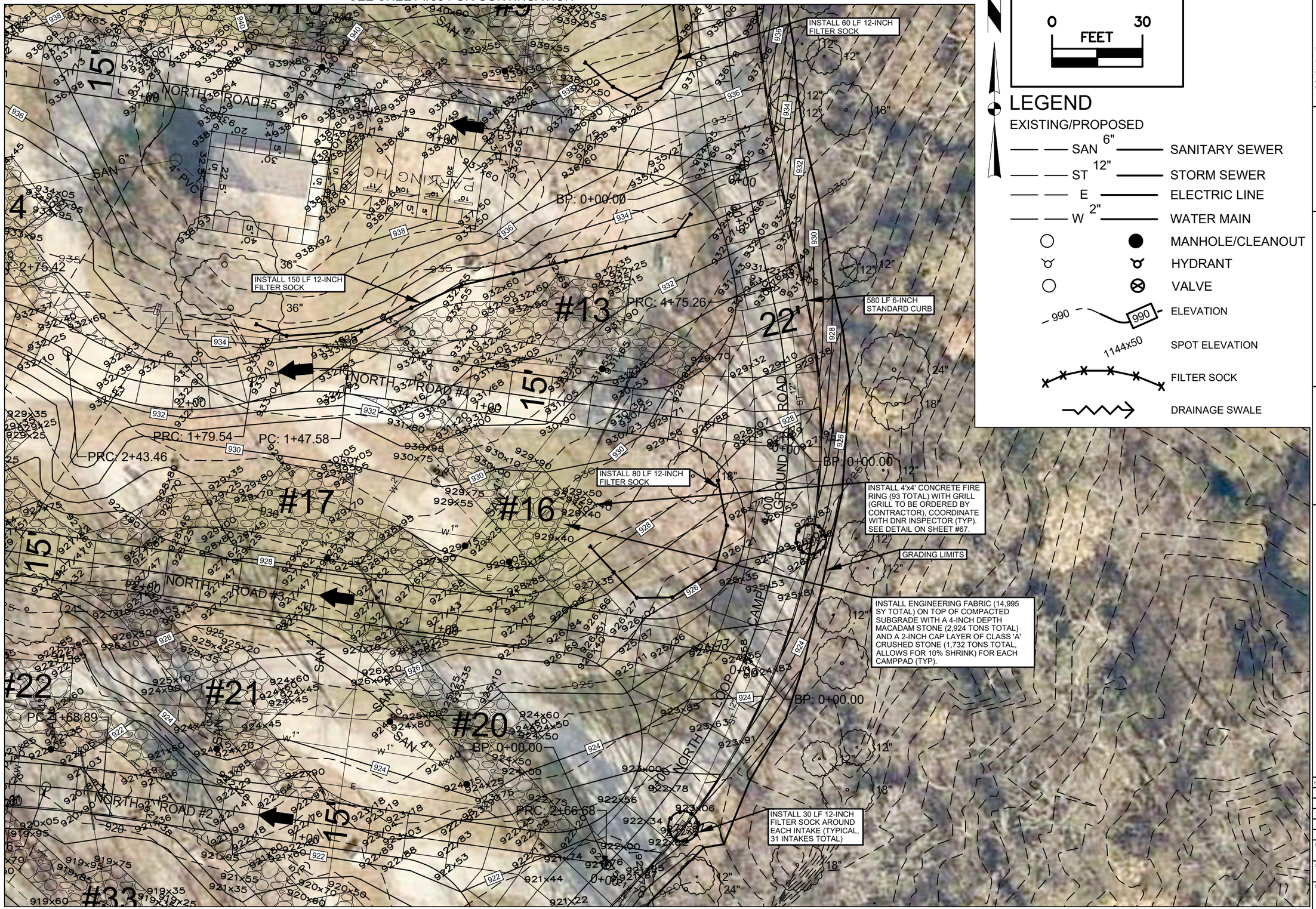
SHEET No: 68

SEE SHEET #70 FOR CONTINUATION

SEE SHEET #69 FOR CONTINUATION

SEE SHEET #68 FOR CONTINUATION

SEE SHEET #70 FOR CONTINUATION




SEE SHEET #71 FOR CONTINUATION

0 30
FEET

## LEGEND

EXISTING/PROPOSED

- SAN 6" — SANITARY SEWER
- ST 12" — STORM SEWER
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- DRAINAGE SWALE

CONSULTANT:

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

# GRADING PLAN

CONSTRUCTION PROJECT FOR:

## LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 69

SEE SHEET #68 FOR CONTINUATION

0 30
FEET

## LEGEND

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- SAN 6" — SANITARY SEWER
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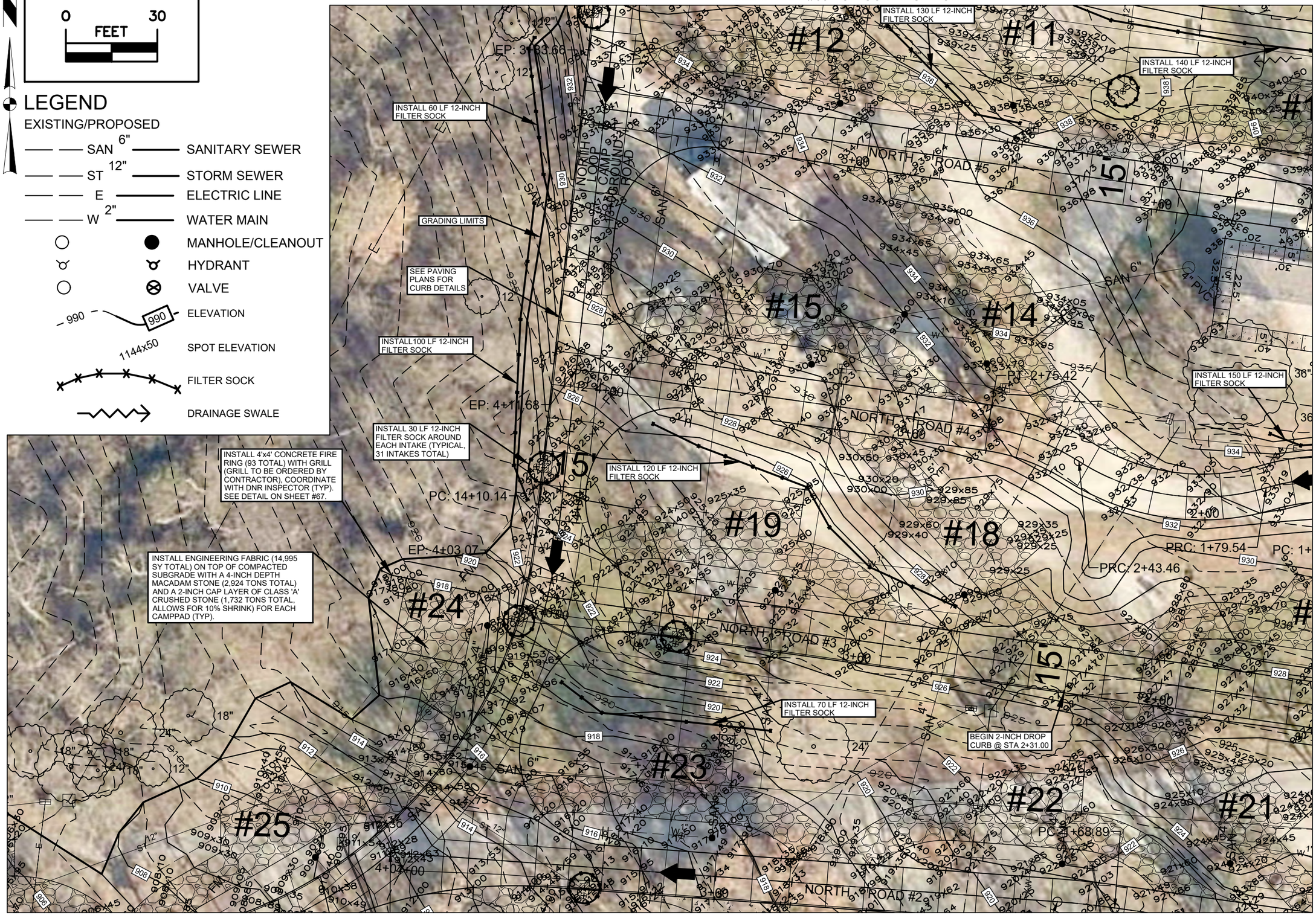


SEE SHEET #69 FOR CONTINUATION

SEE SHEET #72 FOR CONTINUATION

SEE SHEET #71 FOR CONTINUATION

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

GRADING PLAN

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

DATE: 12/29/2021

SHEET No: 70

SEE SHEET #70 FOR CONTINUATION

SEE SHEET #72 FOR CONTINUATION

0 30
FEET

## LEGEND
EXISTING/PROPOSED

- SAN 6" — SANITARY SEWER
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- MANHOLE/CLEANOUT
- HYDRANT
- VALVE

## LEGEND
EXISTING/PROPOSED

- 990 — ELEVATION
- 1144x50 — SPOT ELEVATION
- FILTER SOCK
- DRAINAGE SWALE

SEE SHEET #69 FOR CONTINUATION

TRANSITION TO 6-INCH STANDARD CURB

INSTALL 120 LF 12-INCH FILTER SOCK

INSTALL 70 LF 12-INCH FILTER SOCK

BEGIN 2-INCH DROP CURB @ STA 2+31.00

TRANSITION TO 6-INCH STANDARD CURB

BEGIN 2-INCH DROP CURB @ STA 1+50.00

INSTALL 269.3 SY 6-INCH NON-REINFORCED PCC WITH 6-INCH GRANULAR SUBBASE (81.8 TONS) FOR ADA CAMPPAD #34.

GRADING LIMITS

TRANSITION TO 6-INCH STANDARD CURB

INSTALL 4'x4' CONCRETE FIRE RING (93 TOTAL) WITH ADA GRILL (GRILL TO BE ORDERED BY CONTRACTOR), COORDINATE WITH DNR INSPECTOR (TYP). SEE DETAIL ON SHEET #67.

INSTALL 8' PRECAST CONCRETE PARKING WHEEL STOP LOCATED 2' OFF END OF STALL & CENTERED WITHIN 12' STALL ON CAMPPADS #40-45. CONTRACTOR TO ANCHOR WHEEL STOPS INTO AGGREGATE WITH #4 REBAR OR 1/2-INCH DOWELS, 18-INCH LENGTH. SEE DETAIL ON SHEET #80.

INSTALL 30 LF 12-INCH FILTER SOCK AROUND EACH INTAKE (TYPICAL, 31 INTAKES TOTAL)

INSTALL ENGINEERING FABRIC (14,995 SY TOTAL) ON TOP OF COMPACTED SUBGRADE WITH A 4-INCH DEPTH MACADAM STONE (2,924 TONS TOTAL) AND A 2-INCH CAP LAYER OF CLASS 'A' CRUSHED STONE (1,732 TONS TOTAL, ALLOWS FOR 10% SHRINK) FOR EACH CAMPPAD (TYP).

INSTALL 4'x4' CONCRETE FIRE RING (93 TOTAL) WITH GRILL (GRILL TO BE ORDERED BY CONTRACTOR), COORDINATE WITH DNR INSPECTOR (TYP). SEE DETAIL ON SHEET #67.

INSTALL 70 LF 12-INCH FILTER SOCK

INSTALL 100 LF 12-INCH FILTER SOCK

INSTALL 100 LF 12-INCH FILTER SOCK

INSTALL 130 LF 12-INCH FILTER SOCK

TRANSITION TO 6-INCH STANDARD CURB

SEE SHEET #74 FOR CONTINUATION

SEE SHEET #73 FOR CONTINUATION

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

# GRADING PLAN

CONSTRUCTION PROJECT FOR:

## LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

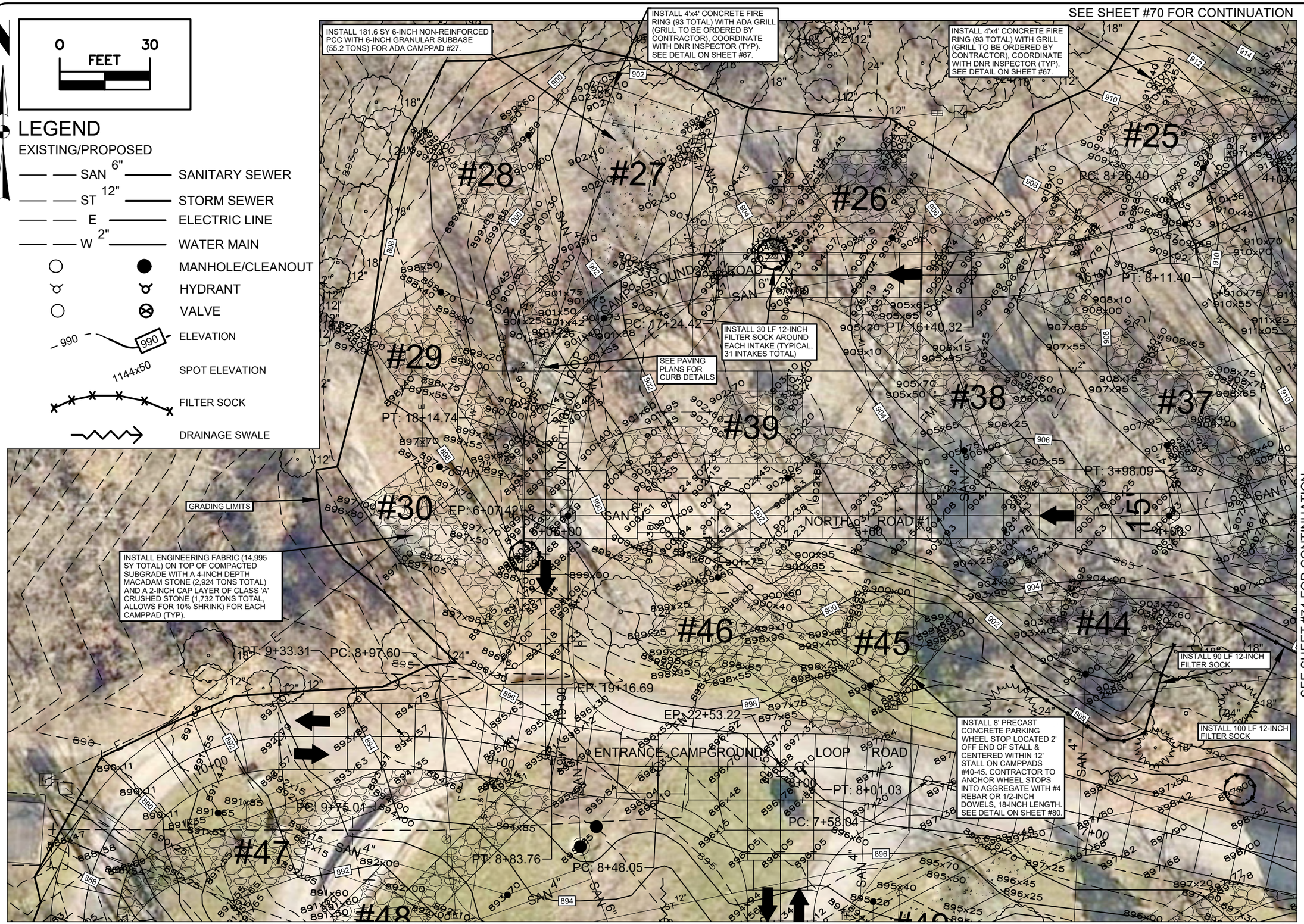
DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

DATE: 12/29/2021

SHEET No: 71




CONSULTANT:

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502 E. 9TH ST., DES MOINES, IA 50319-0034

GRADING PLAN

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

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DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

DATE: 12/29/2021

SHEET No: 72

SEE SHEET #71 FOR CONTINUATION

SEE SHEET #74 FOR CONTINUATION

INSTALL ENGINEERING FABRIC (14,995 SY TOTAL) ON TOP OF COMPACTED SUBGRADE WITH A 4-INCH DEPTH MACADAM STONE (2,924 TONS TOTAL) AND A 2-INCH CAP LAYER OF CLASS 'A' CRUSHED STONE (1,732 TONS TOTAL, ALLOWS FOR 10% SHRINK) FOR EACH CAMPPAD (TYP).

INSTALL 130 LF 12-INCH FILTER SOCK

INSTALL 15 LF 12-INCH FILTER SOCK

INSTALL 30 LF 12-INCH FILTER SOCK AROUND EACH INTAKE (TYPICAL, 31 INTAKES TOTAL)

INSTALL 110 LF 12-INCH FILTER SOCK

INSTALL 130 LF 12-INCH FILTER SOCK

SEE PAVING PLANS FOR CURB DETAILS

GRADING LIMITS

NEW ENTRY KIOSK

NEW LIGHTPOLE

UNDERGROUND CABLE

NORTH LOOP CAMPGROUND ROAD

GROUND LOOP CAMP ROAD

ENTRANCE ROAD

SHELTER ROAD

SAN 6"

ST 12"

24" CMP

IE=904.75

IE=904.10

PT: 4+00.36

PC: 1+56.02

PCC: 2+35.56

BP: 0+00.00

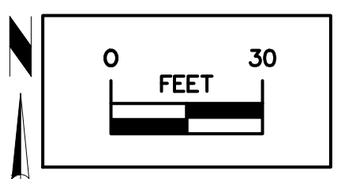
PRC: 0+31.40

PT: 0+70.39

PCC: 1+52.81

PT: 2+11.09

22'




## LEGEND

EXISTING/PROPOSED

- SAN 6" — SANITARY SEWER
- ST 12" — STORM SEWER
- E — ELECTRIC LINE
- W 2" — WATER MAIN
- MANHOLE/CLEANOUT
- HYDRANT
- VALVE

## LEGEND

EXISTING/PROPOSED

- 990 — ELEVATION
- 1144x50 — SPOT ELEVATION
- FILTER SOCK
- DRAINAGE SWALE

SEE SHEET #76 FOR CONTINUATION

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

GRADING PLAN

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:

PROJECT NUMBER: 22-05-91-01

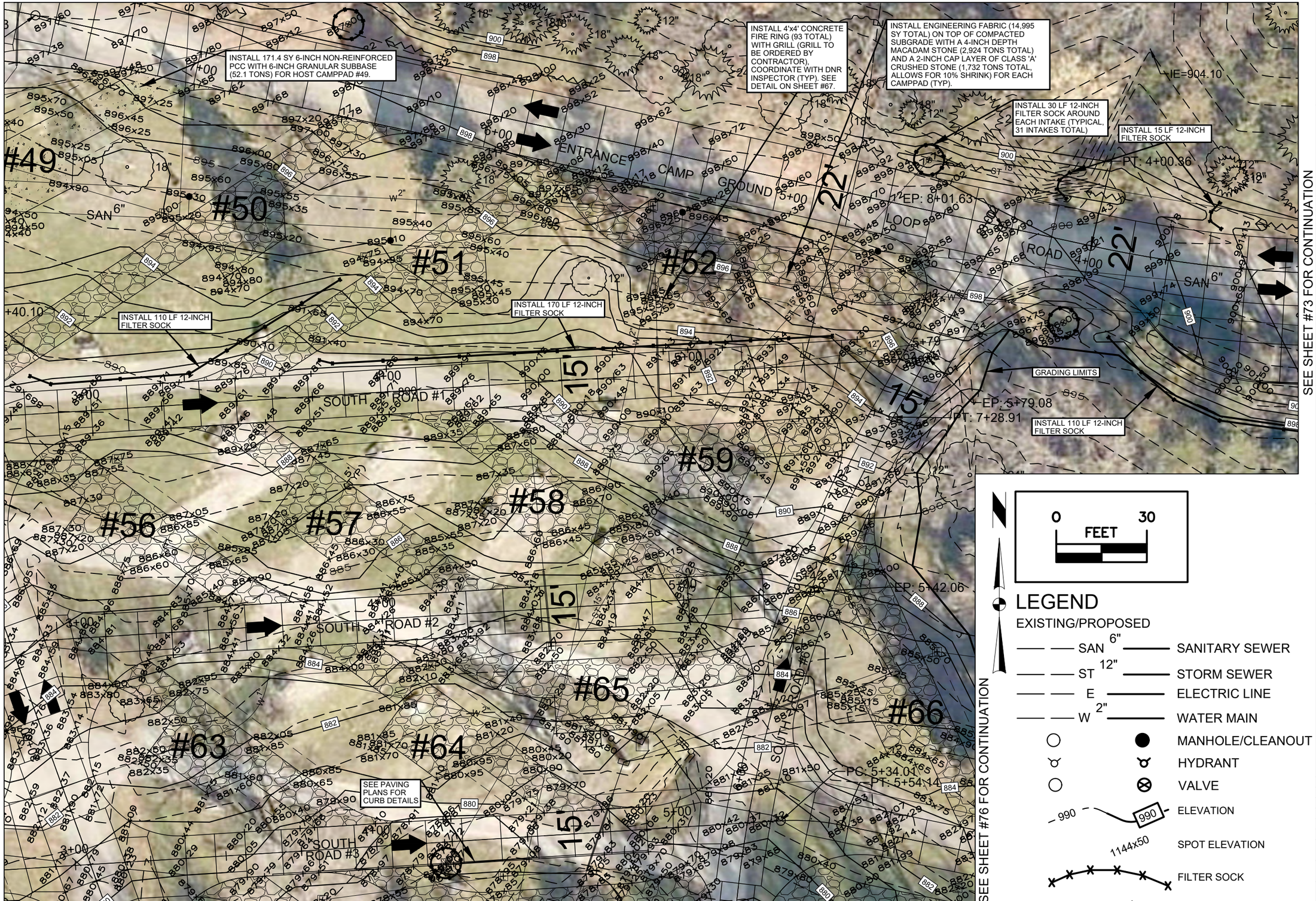
CHK'D BY:

DATE: 12/29/2021

SHEET No: 73

SEE SHEET #72 FOR CONTINUATION

SEE SHEET #71 FOR CONTINUATION




SEE SHEET #75 FOR CONTINUATION

SEE SHEET #73 FOR CONTINUATION

SEE SHEET #76 FOR CONTINUATION

SEE SHEET #77 FOR CONTINUATION

## LEGEND

EXISTING/PROPOSED

- SAN 6" — SANITARY SEWER
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CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

GRADING PLAN

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

DATE: 12/29/2021

SHEET No: 74

SEE SHEET #72 FOR CONTINUATION

0 30
FEET

## LEGEND

EXISTING/PROPOSED

- SAN 6" — SANITARY SEWER
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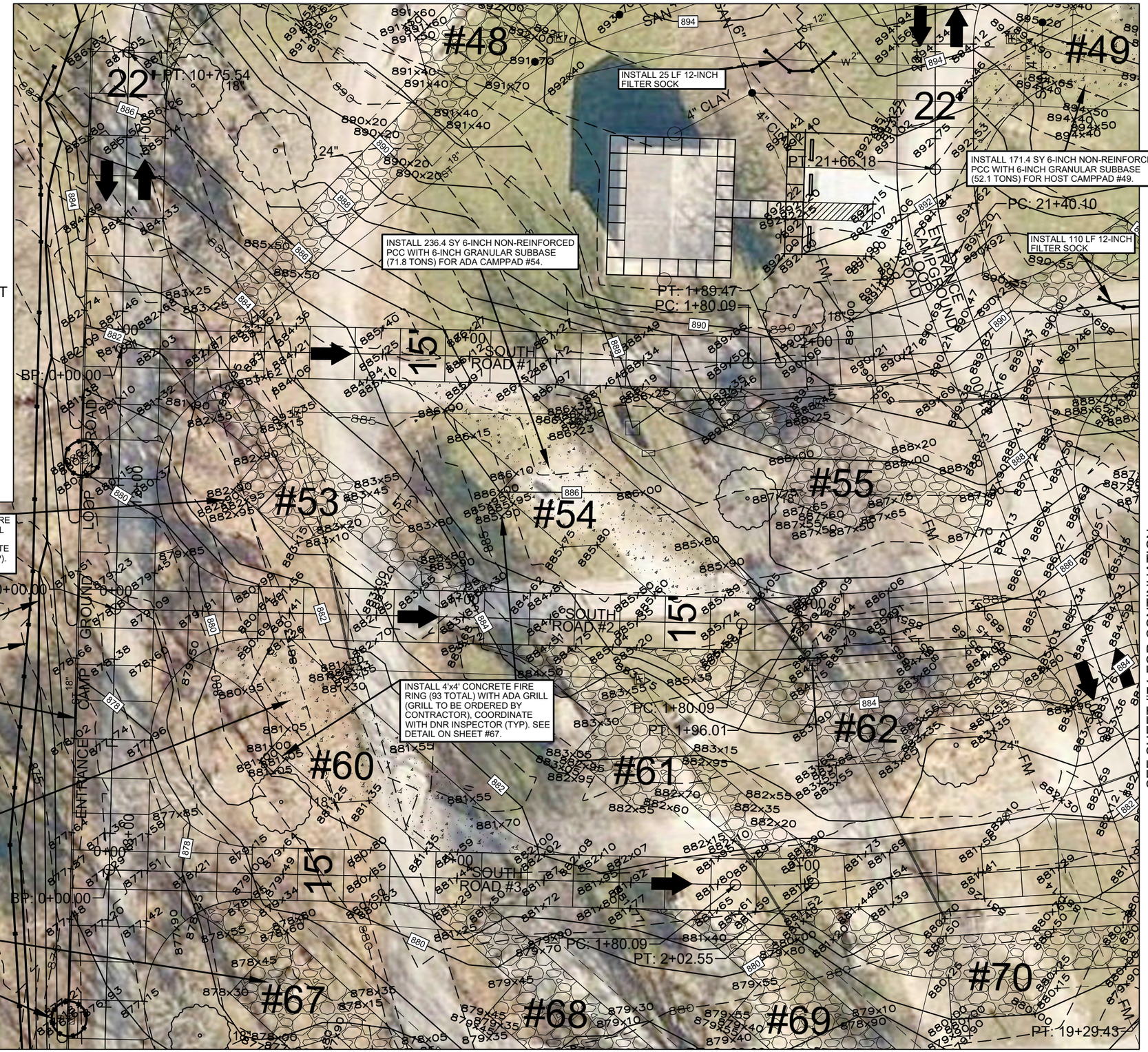


SEE SHEET #78 FOR CONTINUATION

SEE SHEET #74 FOR CONTINUATION

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

# GRADING PLAN

CONSTRUCTION PROJECT FOR:

## LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

| | |
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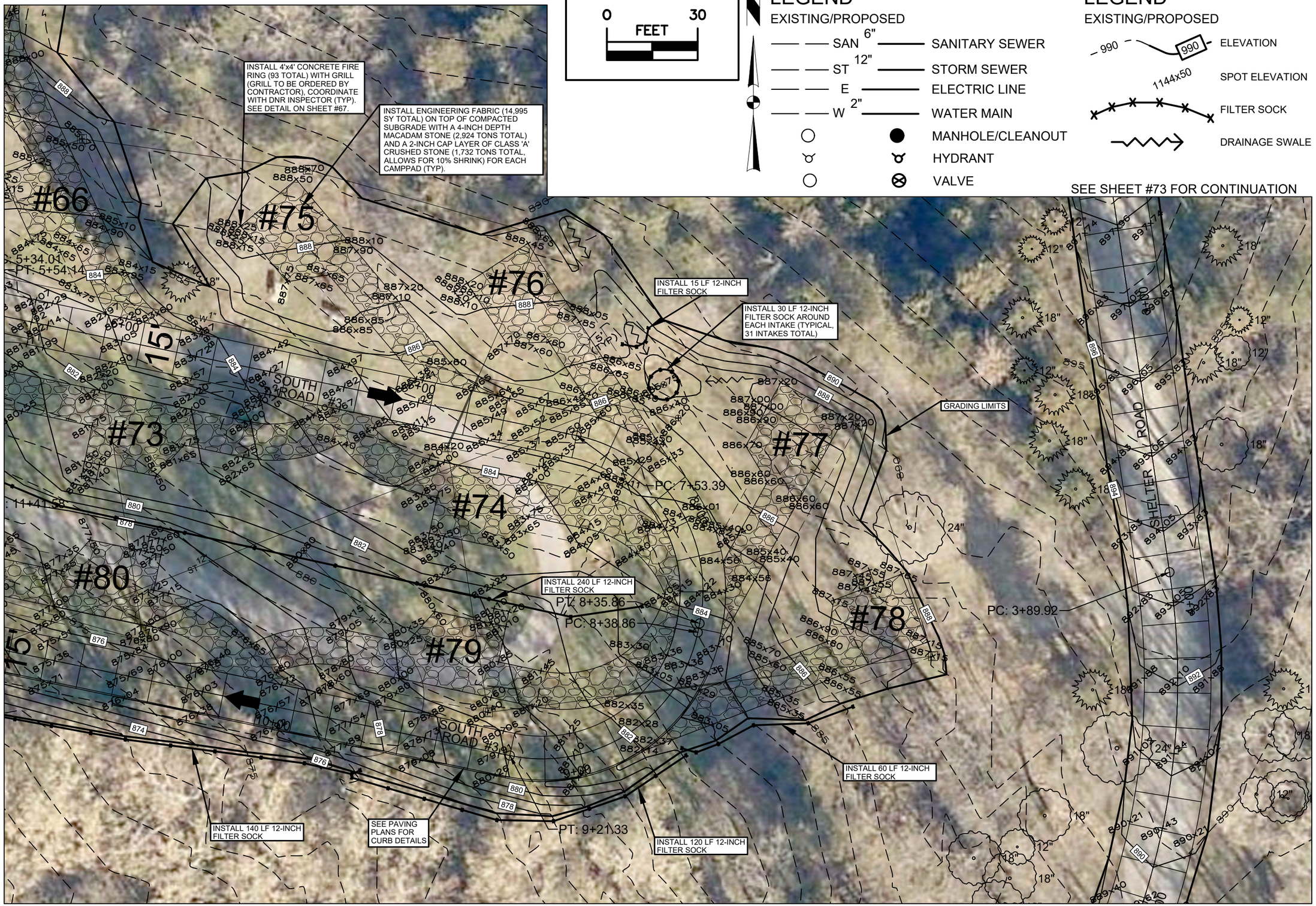
| DRAWN BY: | PROJECT NUMBER: 22-05-91-01 |
| CHK'D BY: | DATE: 12/29/2021 |
| SHEET No: | 75 |

SEE SHEET #74 FOR CONTINUATION




SEE SHEET #73 FOR CONTINUATION

SEE SHEET #77 FOR CONTINUATION

SEE SHEET #79 FOR CONTINUATION

## LEGEND
EXISTING/PROPOSED

- SAN 6" — SANITARY SEWER
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## LEGEND
EXISTING/PROPOSED

- 990 / 990 — ELEVATION
- 1144x50 — SPOT ELEVATION
- FILTER SOCK
- DRAINAGE SWALE

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

GRADING PLAN

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

DATE: 12/29/2021

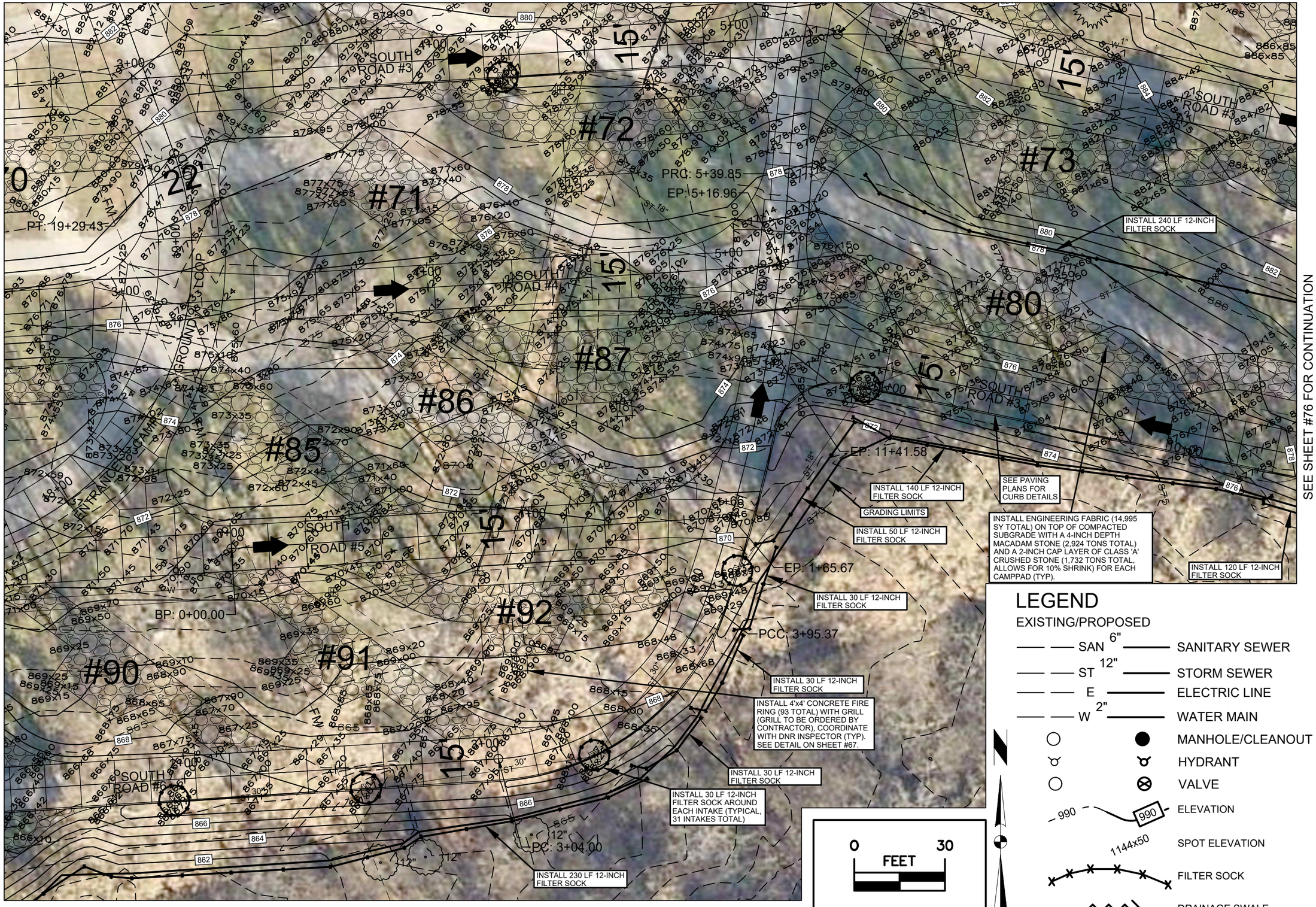
SHEET No: 76

SEE SHEET #75 FOR CONTINUATION

SEE SHEET #74 FOR CONTINUATION

SEE SHEET #78 FOR CONTINUATION

SEE SHEET #76 FOR CONTINUATION




## LEGEND

EXISTING/PROPOSED

| | |
|---|---|
| SAN 6" | SANITARY SEWER |
| ST 12" | STORM SEWER |
| E | ELECTRIC LINE |
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| | MANHOLE/CLEANOUT |
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| | VALVE |
| 990 / 990 | ELEVATION |
| 1144x50 | SPOT ELEVATION |
| | FILTER SOCK |
| | DRAINAGE SWALE |

CONSULTANT:

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

GRADING PLAN

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

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DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

DATE: 12/29/2021

SHEET No: 77

SEE SHEET #75 FOR CONTINUATION

0 30
FEET

## LEGEND

EXISTING/PROPOSED

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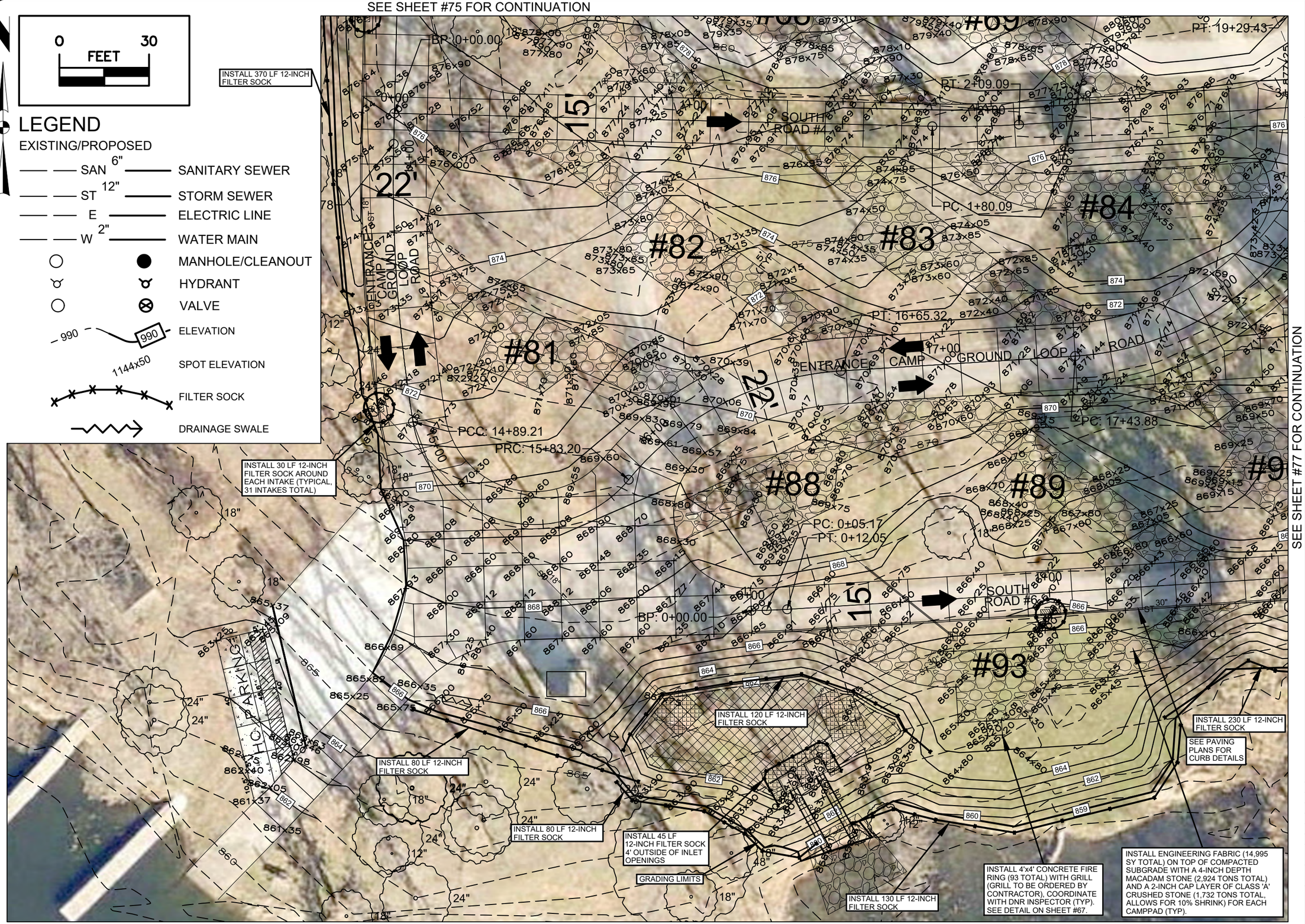



SEE SHEET #77 FOR CONTINUATION

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

# GRADING PLAN

CONSTRUCTION PROJECT FOR:

## LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

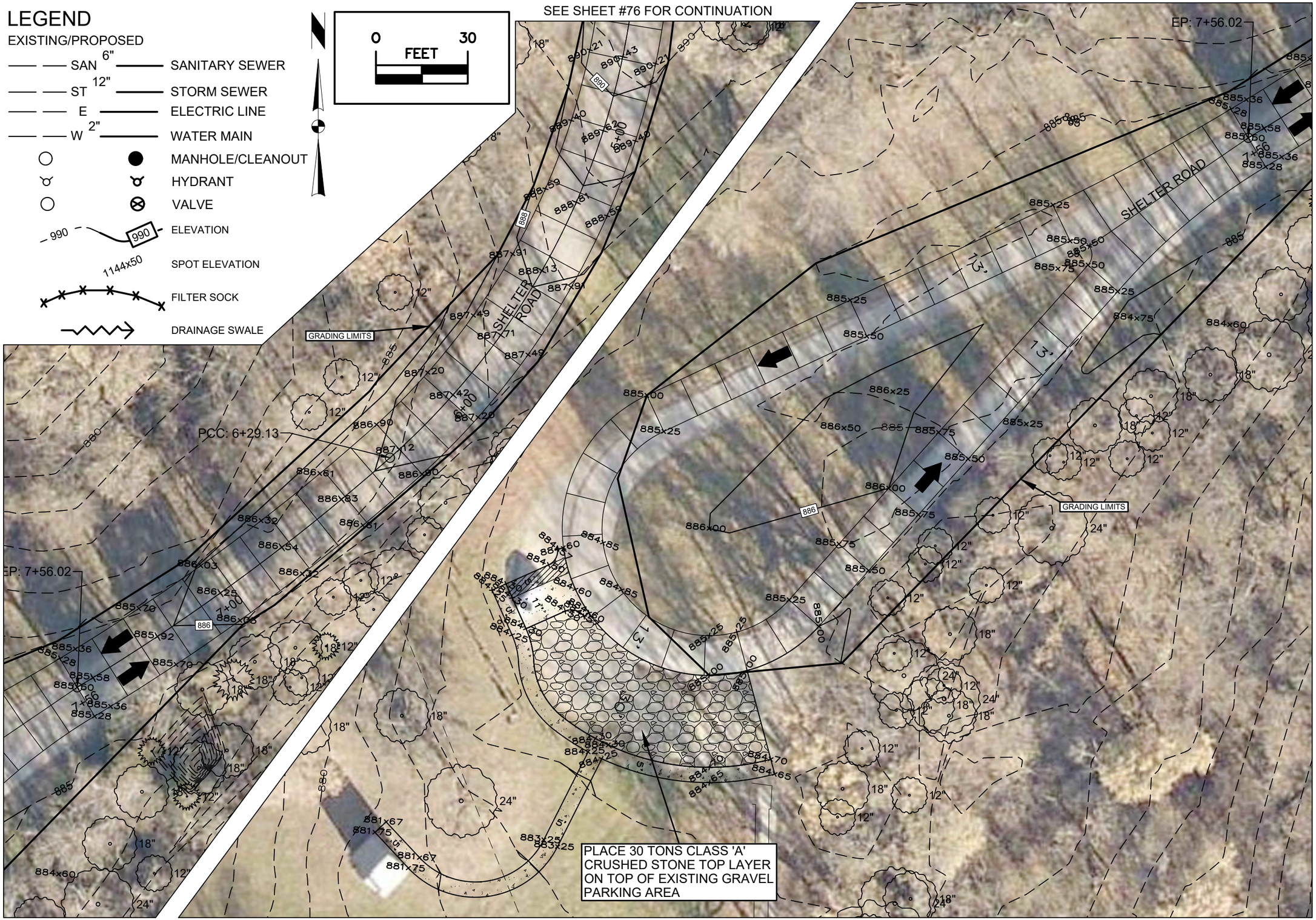
DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 78

## LEGEND

EXISTING/PROPOSED

- SAN 6" — SANITARY SEWER
- ST 12" — STORM SEWER
- E — ELECTRIC LINE
- W 2" — WATER MAIN
- MANHOLE/CLEANOUT
- HYDRANT
- VALVE
- 990 — ELEVATION
- 1144x50 — SPOT ELEVATION
- FILTER SOCK
- DRAINAGE SWALE

0 30 FEET




CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

GRADING PLAN

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY: DATE | REVISION |
|---|---|---|

DRAWN BY:

PROJECT NUMBER: 22-05-91-01

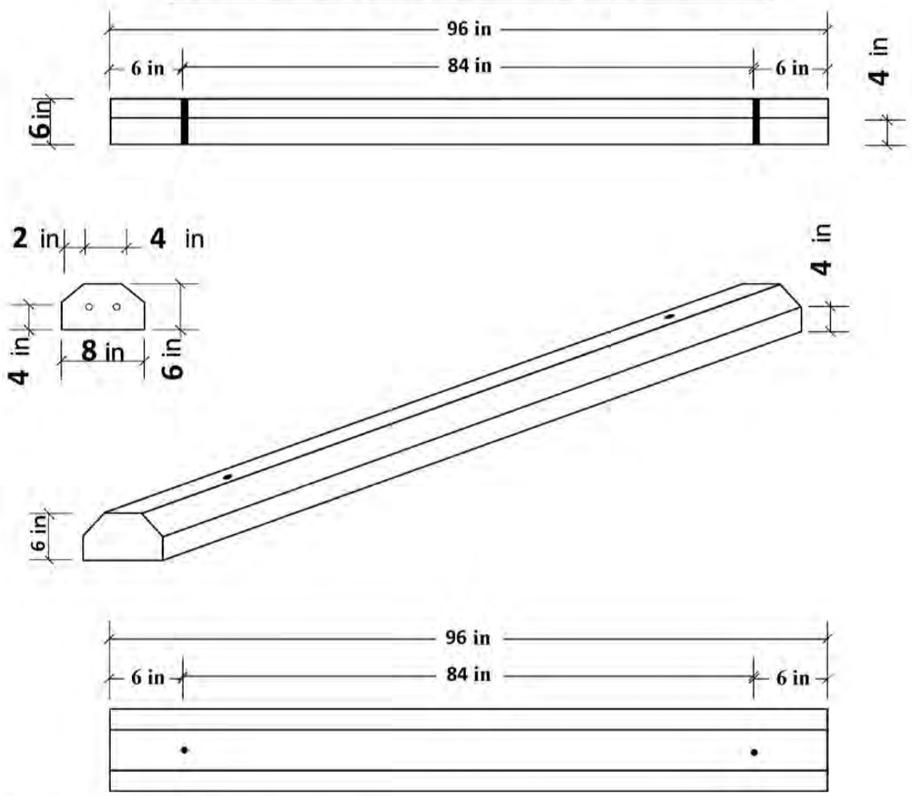
CHK'D BY:

DATE: 12/29/2021

SHEET No: 79

NOTE: INSTALL 8' PRECAST CONCRETE PARKING WHEEL STOP LOCATED 2' OFF END OF CAMPPAD STALL & CENTERED WITHIN 12' STALL ON CAMPPADS #40-45. CONTRACTOR TO ANCHOR WHEEL STOPS INTO AGGREGATE WITH #4 REBAR OR 1/2-INCH DOWELS, 18-INCH LENGTH.

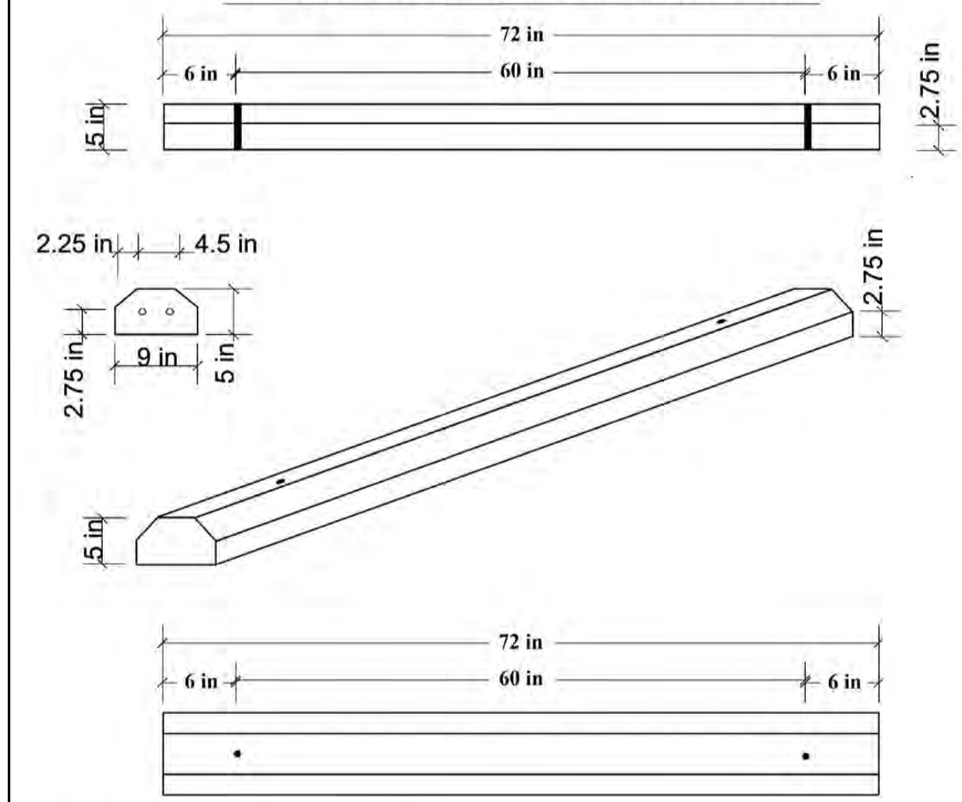
## FLAT PARKING BUMPER




Air Entrained Concrete
4000 p.s.i. @ 28 days
Length: **8'0"**
Height: **6" MIN**
Width: **8" MIN**

NOTE: INSTALL 6' PRECAST CONCRETE PARKING WHEEL STOPS LOCATED 2' OFF END OF PARKING STALLS & CENTERED WITHIN STALL LOCATED AT THE 2 SHOWER BUILDINGS. CONTRACTOR TO ANCHOR WHEEL STOPS INTO 6-INCH CONCRETE (PRE-DRILL) WITH #4 REBAR OR 1/2-INCH DOWELS, 18-INCH LENGTH.

## FLAT PARKING BUMPER




Air Entrained Concrete
4000 p.s.i. @ 28 days
Length: **6'0"**
Height: 5"
Width: 9"

CONSULTANT:

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

WHEEL STOP DETAILS

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

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|---|---|---|

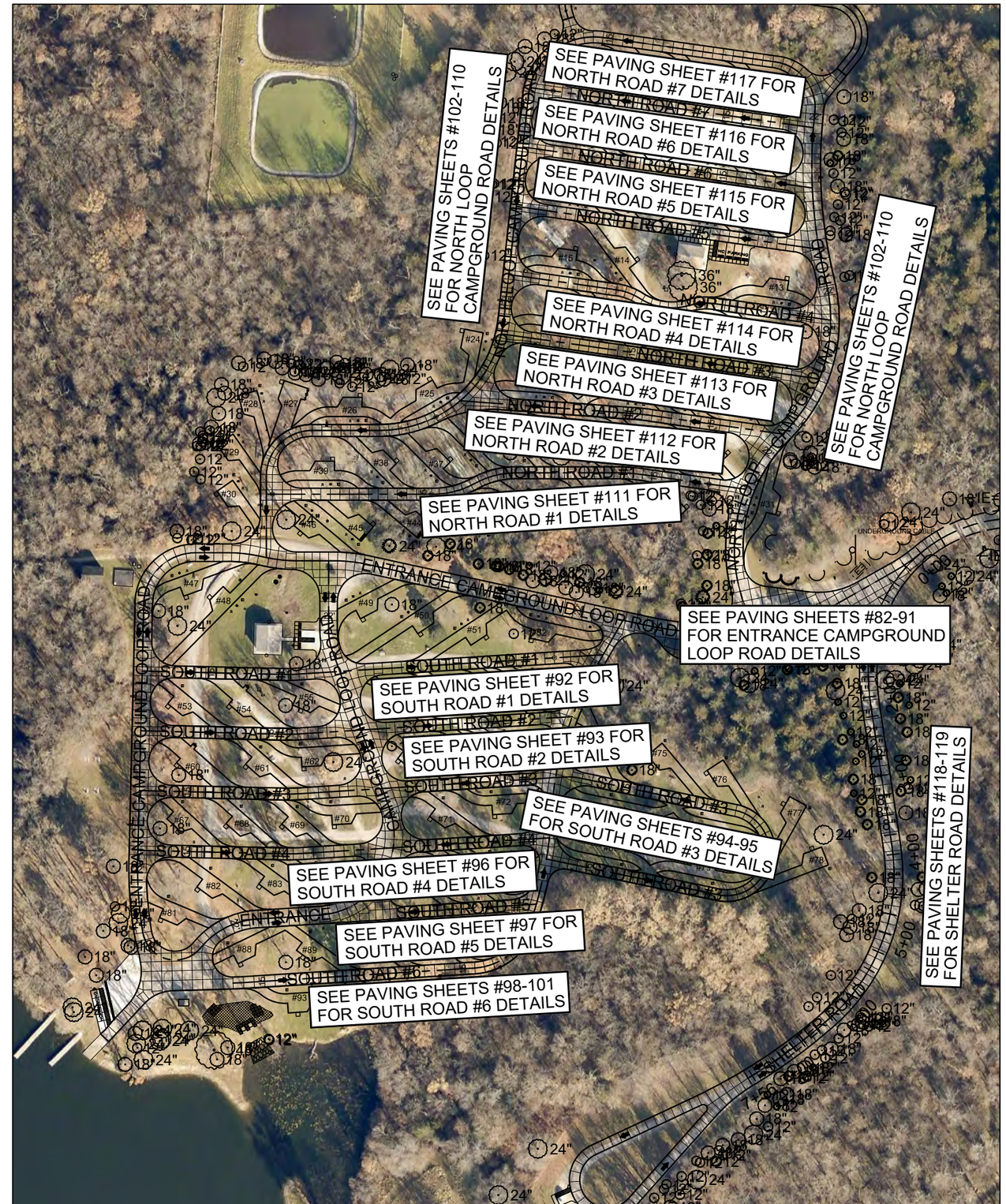
DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 80

0 150
FEET

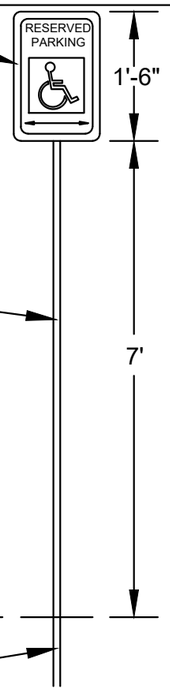
## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE




MUTCD R7-8
SOLID GREEN LEGEND AND BORDER
REFLECTIVE WHITE BACKGROUND
WHITE ACCESSIBILITY SYMBOL ON BLUE BACKGROUND




NOTES
1. 12"x18" ACCESSIBILITY SIGN (R7-8) SHALL BE MOUNTED 7' FROM FINISH GRADE TO BOTTOM EDGE OF SIGN FACE.
2. SIGNAGE FOR TO BE LOCATED ON END OF PARKING STALL, 2' BACK FROM EDGE OF PAVEMENT, CENTERED ON STALL IF POSSIBLE. "U" CHANNEL CAN BE DRIVEN INTO GROUND AT SAID LOCATION TO A DEPTH OF 3.5 FEET.
3. ALL SIGNAGE SHALL BE ENGINEER GRADE .080 ALUMINUM REFLECTIVE SIGN MEETING THE REQUIREMENTS OF THE MUTCD AND ADAAG.
4. SURFACE MOUNTING BASE TO BE 15-INCH DIAMETER ALUMINUM BASE (OR EQUIVALENT) THAT IS COMPATIBLE WITH 2 LBS./FT. "U" CHANNEL.

## HANDICAP SIGN DETAIL

NOT TO SCALE

CONSULTANT: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ENGINEERING SERVICES - WALLACE BUILDING
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OVERALL PAVING PLAN

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

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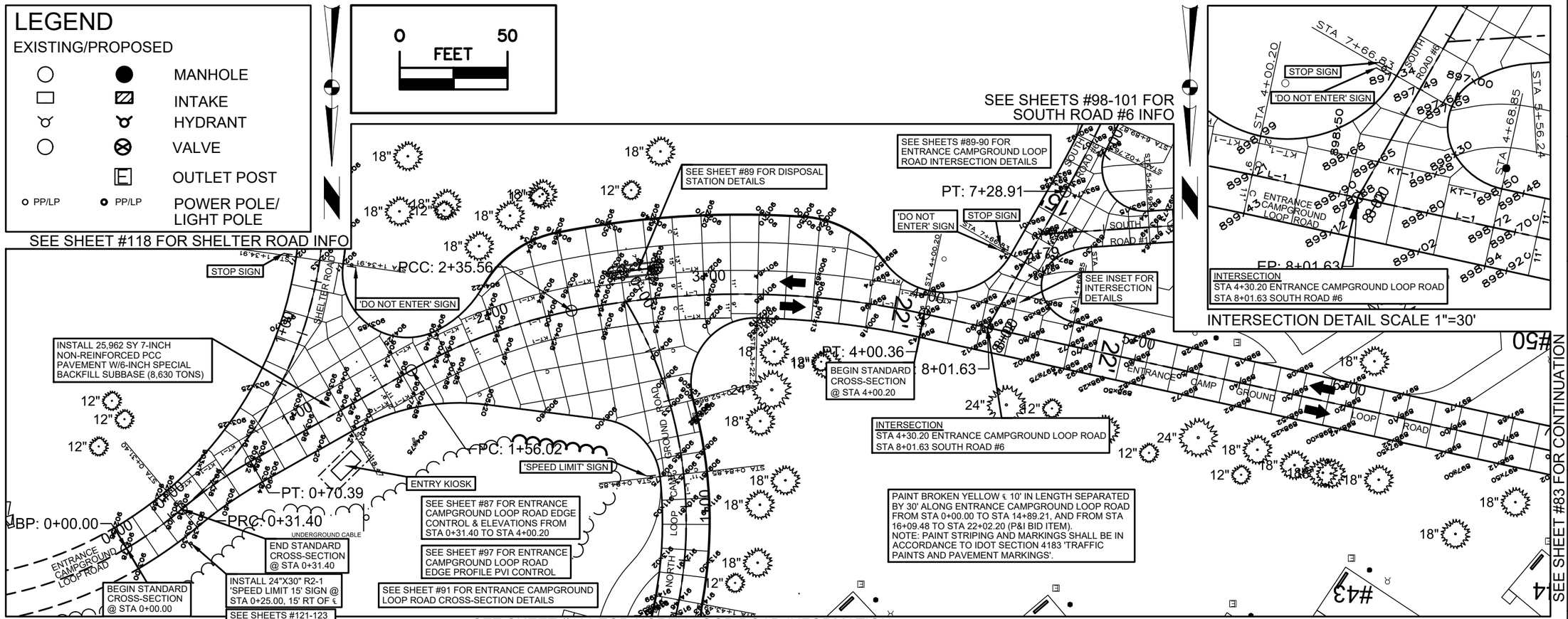
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 81




CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

PAVING PLAN ENTRANCE ROAD

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
CHK'D BY:
PROJECT NUMBER: 22-05-91-01
DATE: 12/29/2021
SHEET No: 82

## LEGEND

EXISTING/PROPOSED

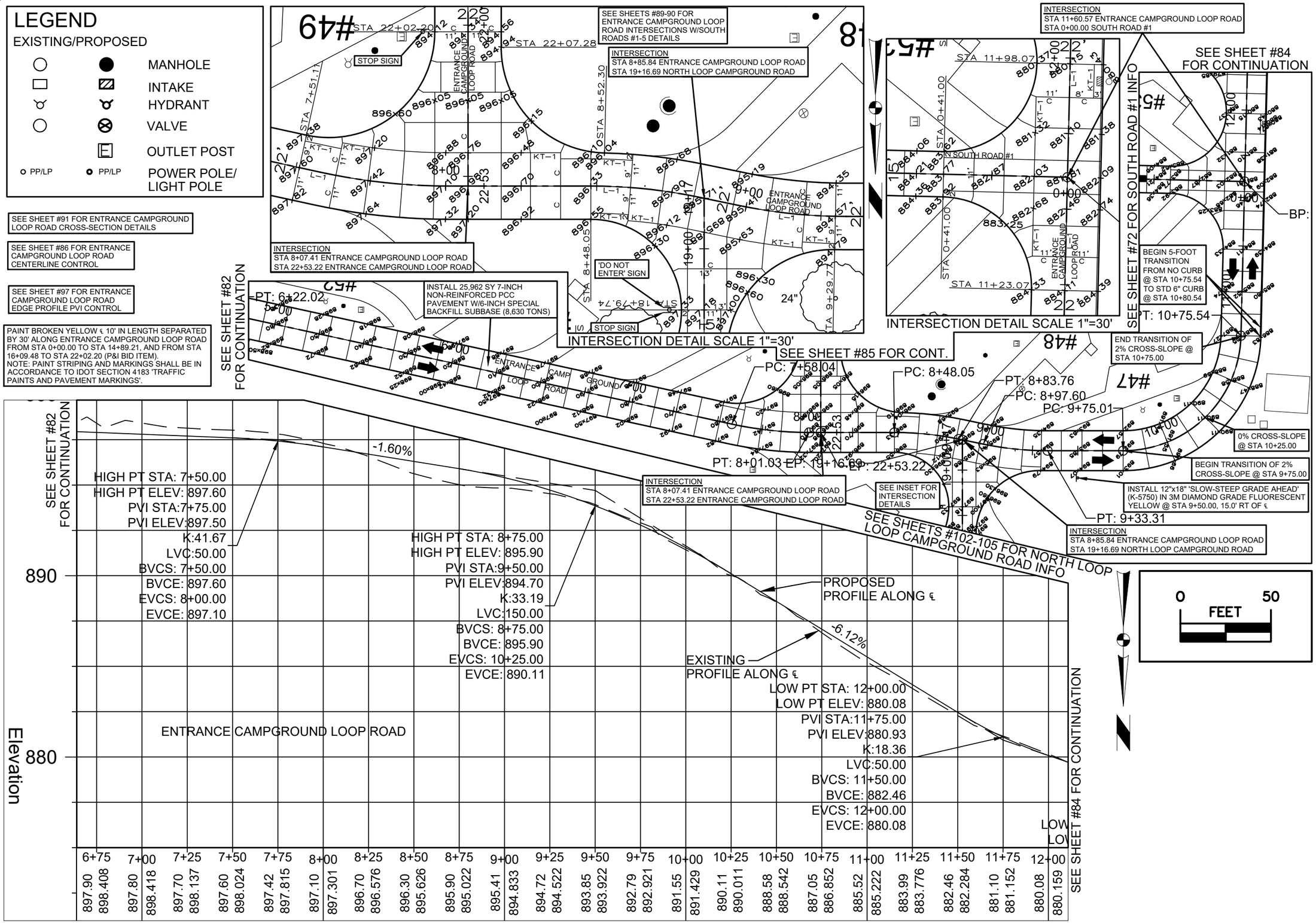
- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE

SEE SHEET #91 FOR ENTRANCE CAMPGROUND LOOP ROAD CROSS-SECTION DETAILS

SEE SHEET #86 FOR ENTRANCE CAMPGROUND LOOP ROAD CENTERLINE CONTROL

SEE SHEET #97 FOR ENTRANCE CAMPGROUND LOOP ROAD EDGE PROFILE PVI CONTROL

PAINT BROKEN YELLOW ℄ 10' IN LENGTH SEPARATED BY 30' ALONG ENTRANCE CAMPGROUND LOOP ROAD FROM STA 0+00.00 TO STA 14+89.21, AND FROM STA 16+09.48 TO STA 22+02.20 (P&I BID ITEM).
NOTE: PAINT STRIPING AND MARKINGS SHALL BE IN ACCORDANCE TO IDOT SECTION 4183 'TRAFFIC PAINTS AND PAVEMENT MARKINGS'.




CONSULTANT:

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

PAVING PLAN ENTRANCE ROAD

CONSTRUCTION PROJECT FOR:

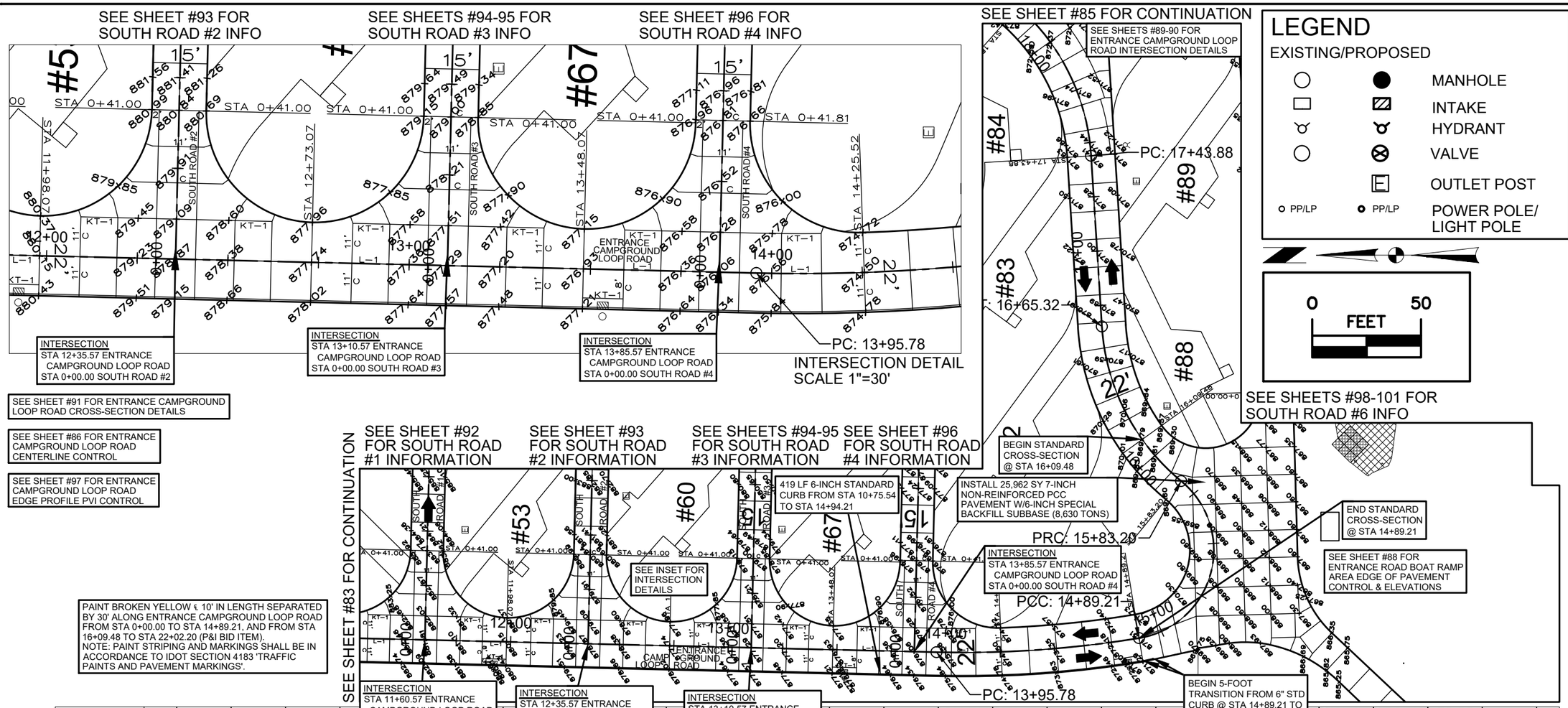
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
CHK'D BY:
PROJECT NUMBER: 22-05-91-01
DATE: 12/29/2021

SHEET No: 83




CONSULTANT:

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502 E. 9TH ST., DES MOINES, IA 50319-0034

PAVING PLAN ENTRANCE ROAD

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

SEE SHEET #85 FOR CONTINUATION

| NO. | BY DATE | REVISION |
|---|---|---|
| | | |

DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

DATE: 12/29/2021

SHEET No: **84**

## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE

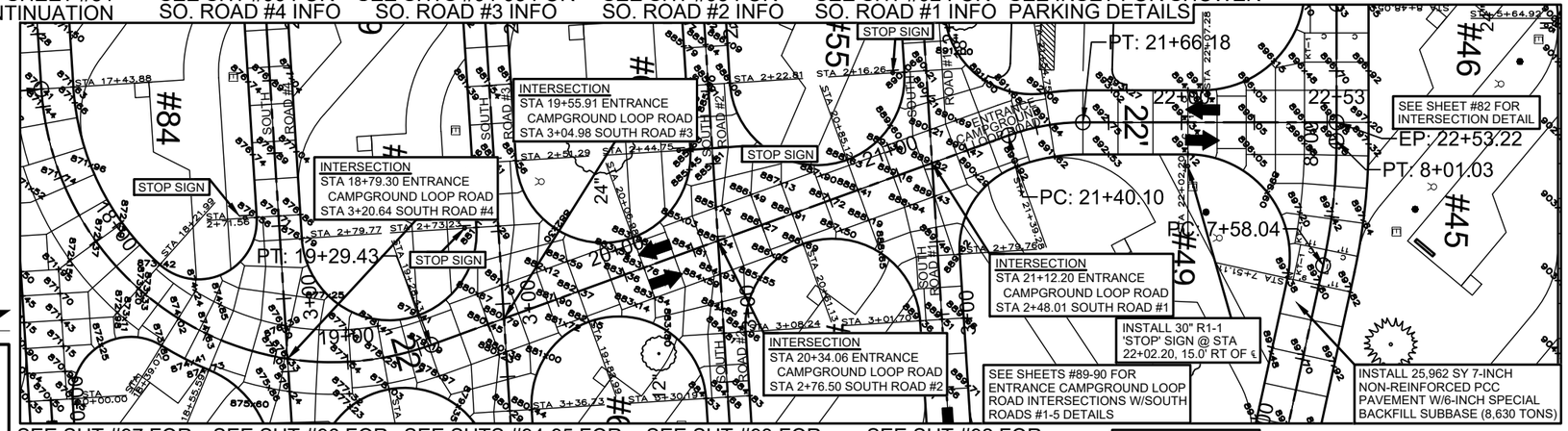
SEE SHEET #86 FOR ENTRANCE CAMPGROUND LOOP ROAD CENTERLINE CONTROL

SEE SHEETS #89-90 FOR ENTRANCE CAMPGROUND LOOP ROAD INTERSECTION DETAILS

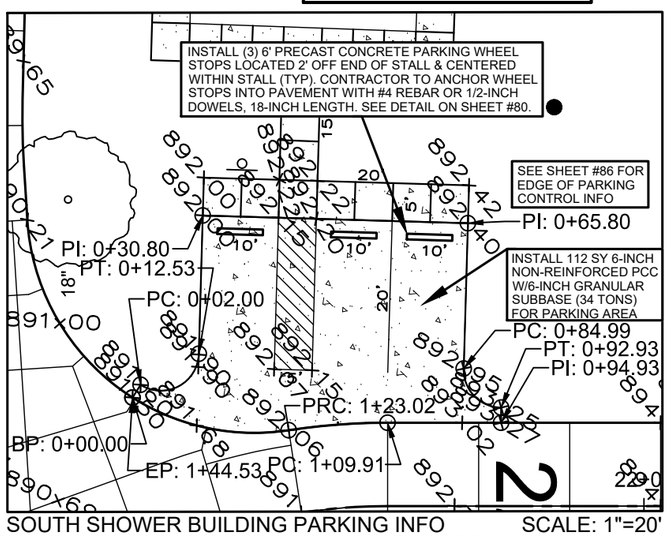
SEE SHEET #91 FOR ENTRANCE CAMPGROUND LOOP ROAD CROSS-SECTION DETAILS

0 50 FEET

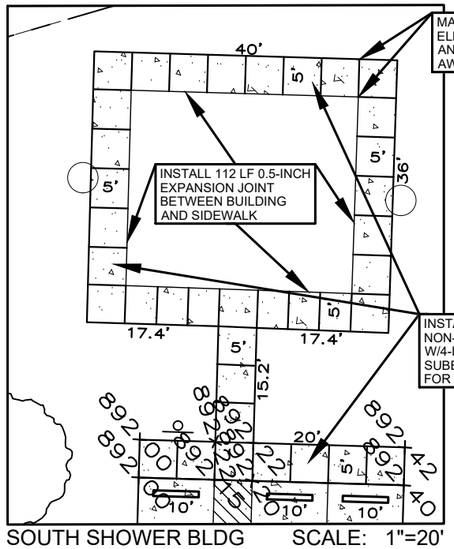
SEE SHEET #84 FOR CONTINUATION | SEE SHT #96 FOR SO. ROAD #4 INFO | SEE SHTS #94-95 FOR SO. ROAD #3 INFO | SEE SHT #93 FOR SO. ROAD #2 INFO | SEE SHT #92 FOR SO. ROAD #1 INFO | SEE INSET FOR SHOWER PARKING DETAILS



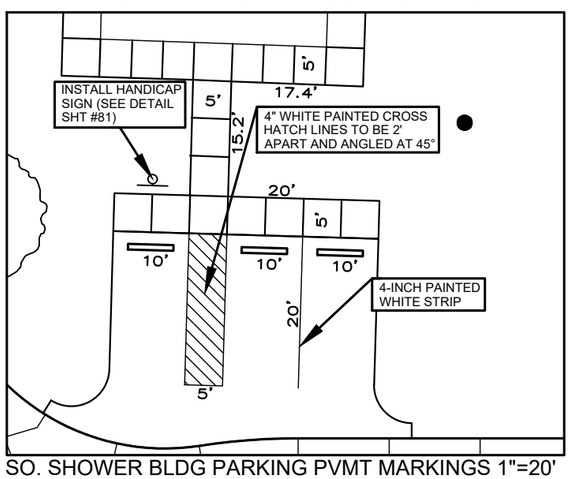

SEE SHT #97 FOR SO. ROAD #5 INFO | SEE SHT #96 FOR SO. ROAD #4 INFO | SEE SHTS #94-95 FOR SO. ROAD #3 INFO | SEE SHT #93 FOR SO. ROAD #2 INFO | SEE SHT #92 FOR SO. ROAD #1 INFO | SEE SHEETS #121-123 FOR SIGNAGE DETAILS



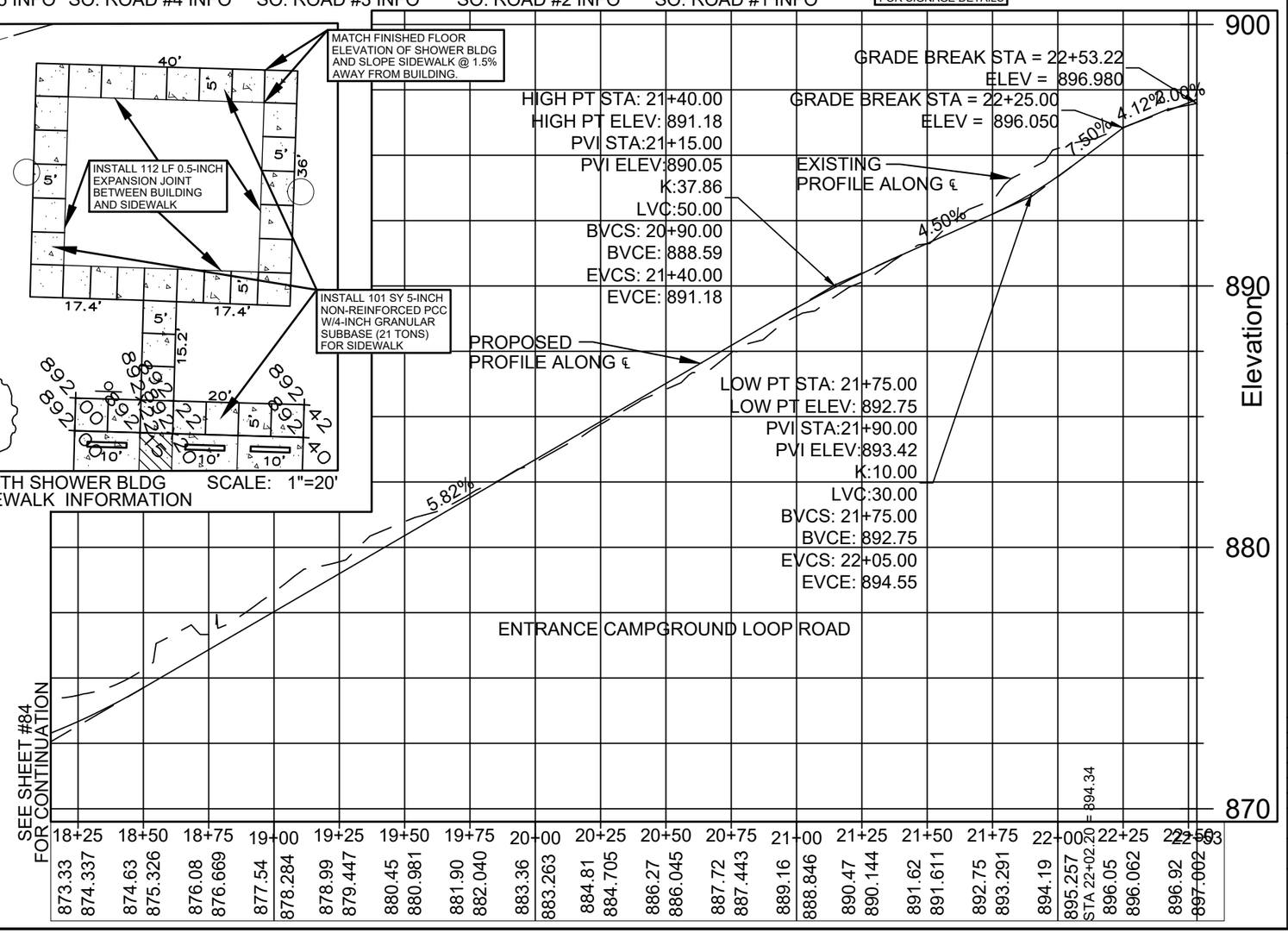

SOUTH SHOWER BUILDING PARKING INFO SCALE: 1"=20'
SEE SHEET #86 FOR PARKING EDGE CONTROL INFO




SOUTH SHOWER BLDG SIDEWALK INFORMATION SCALE: 1"=20'




SO. SHOWER BLDG PARKING PVMT MARKINGS 1"=20'

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502 E. 9TH ST., DES MOINES, IA 50319-0034

PAVING PLAN ENTRANCE ROAD

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY: | PROJECT NUMBER: 22-05-91-01

CHK'D BY: | DATE: 12/29/2021

SHEET No: 85

| ENTRANCE CAMPGROUND LOOP ROAD CENTERLINE CONTROL | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Curve | 31.40' | 185.00' | | 0+00.00' | 0+31.40' | 9.7249 (d) | 31.36' | S54° 45' 26"W | (1615443.2012',472205.7418',902.78') | (1615417.5870',472187.6444',903.16') | (1615536.7625',472046.1445') |
| 2 | Curve | 38.99' | 211.00' | | 0+31.40' | 0+70.39' | 10.5886 (d) | 38.94' | S55° 11' 21"W | (1615417.5870',472187.6444',903.16') | (1615385.6168',472165.4156',903.62') | (1615281.6625',472349.0307') |
| 3 | Line | 85.63' | | S60° 29' 01"W | 0+70.39' | 1+56.02' | | | | (1615385.6168',472165.4156',903.62') | (1615311.1026',472123.2291',904.60') | |
| 4 | Curve | 79.54' | 250.00' | | 1+56.02' | 2+35.56' | 18.2290 (d) | 79.20' | S69° 35' 53"W | (1615311.1026',472123.2291',904.60') | (1615236.8669',472095.6181',903.88') | (1615187.9339',472340.7825') |
| 5 | Curve | 164.80' | 400.00' | | 2+35.56' | 4+00.36' | 23.6052 (d) | 163.63' | N89° 29' 06"W | (1615236.8669',472095.6181',903.88') | (1615073.2412',472097.0892',899.21') | (1615158.5741',472487.8811') |
| 6 | Line | 357.68' | | N77° 40' 56"W | 4+00.36' | 7+58.04' | | | | (1615073.2412',472097.0892',899.21') | (1614723.7936',472173.3942',897.56') | |
| 7 | Curve | 43.00' | 200.00' | | 7+58.04' | 8+01.03' | 12.3177 (d) | 42.91' | N83° 50' 28"W | (1614723.7936',472173.3942',897.56') | (1614681.1271',472177.9983',897.08') | (1614681.1271',471977.9983') |
| 8 | Line | 47.02' | | N90° 00' 00"W | 8+01.03' | 8+48.05' | | | | (1614681.1271',472177.9983',897.08') | (1614634.1084',472177.9983',896.33') | |
| 9 | Curve | 35.71' | 175.00' | | 8+48.05' | 8+83.76' | 11.6919 (d) | 35.65' | N84° 09' 15"W | (1614634.1084',472177.9983',896.33') | (1614598.6449',472181.6292',895.75') | (1614634.1084',472352.9983') |
| 10 | Line | 13.84' | | N78° 18' 29"W | 8+83.76' | 8+97.60' | | | | (1614598.6449',472181.6292',895.75') | (1614585.0955',472184.4332',895.46') | |
| 11 | Curve | 35.71' | 175.00' | | 8+97.60' | 9+33.31' | 11.6919 (d) | 35.65' | N84° 09' 15"W | (1614585.0955',472184.4332',895.46') | (1614549.6320',472188.0642',894.45') | (1614549.6320',472013.0642') |
| 12 | Line | 41.70' | | N90° 00' 00"W | 9+33.31' | 9+75.01' | | | | (1614549.6320',472188.0642',894.45') | (1614507.9358',472188.0642',892.79') | |
| 13 | Curve | 100.54' | 65.00' | | 9+75.01' | 10+75.54' | 88.6203 (d) | 90.81' | S45° 41' 23"W | (1614507.9358',472188.0642',892.79') | (1614442.9546',472124.6292',887.02') | (1614507.9358',472123.0642') |
| 14 | Line | 320.23' | | S1° 22' 47"W | 10+75.54' | 13+95.78' | | | | (1614442.9546',472124.6292',887.02') | (1614435.2441',471804.4891',875.72') | |
| 15 | Curve | 93.43' | 500.00' | | 13+95.78' | 14+89.21' | 10.7065 (d) | 93.30' | S3° 58' 25"E | (1614435.2441',471804.4891',875.72') | (1614441.7092',471711.4172',871.51') | (1614935.0992',471792.4502') |
| 16 | Curve | 93.99' | 41.00' | | 14+89.21' | 15+83.20' | 131.3441 (d) | 74.72' | S74° 59' 56"E | (1614441.7092',471711.4172',871.51') | (1614513.8815',471692.0772',869.39') | (1614482.1672',471718.0619') |
| 17 | Curve | 82.12' | 100.00' | | 15+83.20' | 16+65.32' | 47.0529 (d) | 79.83' | N62° 51' 20"E | (1614513.8815',471692.0772',869.39') | (1614584.9230',471728.5007',870.57') | (1614591.2335',471628.7000') |
| 18 | Line | 78.56' | | N86° 22' 55"E | 16+65.32' | 17+43.88' | | | | (1614584.9230',471728.5007',870.57') | (1614663.3311',471733.4585',871.41') | |
| 19 | Curve | 185.54' | 100.00' | | 17+43.88' | 19+29.43' | 106.3075 (d) | 160.05' | N33° 13' 42"E | (1614663.3311',471733.4585',871.41') | (1614751.0342',471867.3391',879.25') | (1614657.0206',471833.2592') |
| 20 | Line | 210.67' | | N19° 55' 32"W | 19+29.43' | 21+40.10' | | | | (1614751.0342',471867.3391',879.25') | (1614679.2373',472065.3998',891.18') | |
| 21 | Curve | 26.08' | 75.00' | | 21+40.10' | 21+66.18' | 19.9256 (d) | 25.95' | N9° 57' 46"W | (1614679.2373',472065.3998',891.18') | (1614674.7475',472090.9597',892.35') | (1614749.7475',472090.9597') |
| 22 | Line | 87.04' | | N0° 00' 00"W | 21+66.18' | 22+53.22' | | | | (1614674.7475',472090.9597',892.35') | (1614674.7475',472177.9983',896.98') | |

| OUTSIDE EDGE OF SOUTH SHOWER PARKING AREA | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 2.00' | | N57° 38' 11"W | 0+00.00' | 0+02.00' | | | | (1614660.4314',472057.2952',891.50') | (1614658.7420',472058.3658',891.60') | |
| 2 | Curve | 10.53' | 5.00' | | 0+02.00' | 0+12.53' | 120.7064 (d) | 8.69' | N27° 59' 23"W | (1614658.7420',472058.3658',891.60') | (1614654.6633',472066.0401',891.90') | (1614654.5187',472061.0422') |
| 3 | Line | 18.27' | | N88° 20' 35"W | 0+12.53' | 0+30.80' | | | | (1614654.6633',472066.0401',891.90') | (1614636.4053',472066.5683',892.00') | |
| 4 | Line | 35.00' | | N1° 39' 25"E | 0+30.80' | 0+65.80' | | | | (1614636.4053',472066.5683',892.00') | (1614637.4174',472101.5537',892.40') | |
| 5 | Line | 19.19' | | S88° 20' 35"E | 0+65.80' | 0+84.99' | | | | (1614637.4174',472101.5537',892.40') | (1614656.6037',472100.9986',892.95') | |
| 6 | Curve | 7.94' | 5.00' | | 0+84.99' | 0+92.93' | 90.9943 (d) | 7.13' | N46° 09' 36"E | (1614656.6037',472100.9986',892.95') | (1614661.7480',472105.9387',893.25') | (1614656.7483',472105.9965') |
| 7 | Line | 2.00' | | N90° 00' 00"E | 0+92.93' | 0+94.93' | | | | (1614661.7480',472105.9387',893.25') | (1614663.7475',472105.9387',893.27') | |
| 8 | Line | 14.98' | | S0° 00' 00"E | 0+94.93' | 1+09.91' | | | | (1614663.7475',472105.9387',893.27') | (1614663.7475',472090.9597',892.06') | |
| 9 | Curve | 13.10' | 86.00' | | 1+09.91' | 1+23.02' | 8.7298 (d) | 13.09' | S4° 21' 54"E | (1614663.7475',472090.9597',892.06') | (1614664.7438',472077.9071',891.68') | (1614749.7475',472090.9597') |
| 10 | Curve | 21.52' | 30.00' | | 1+23.02' | 1+44.53' | 41.0933 (d) | 21.06' | S11° 49' 01"W | (1614664.7438',472077.9071',891.68') | (1614660.4314',472057.2952',891.50') | (1614635.0913',472073.3538') |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PAVING PLAN ENTRANCE ROAD

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

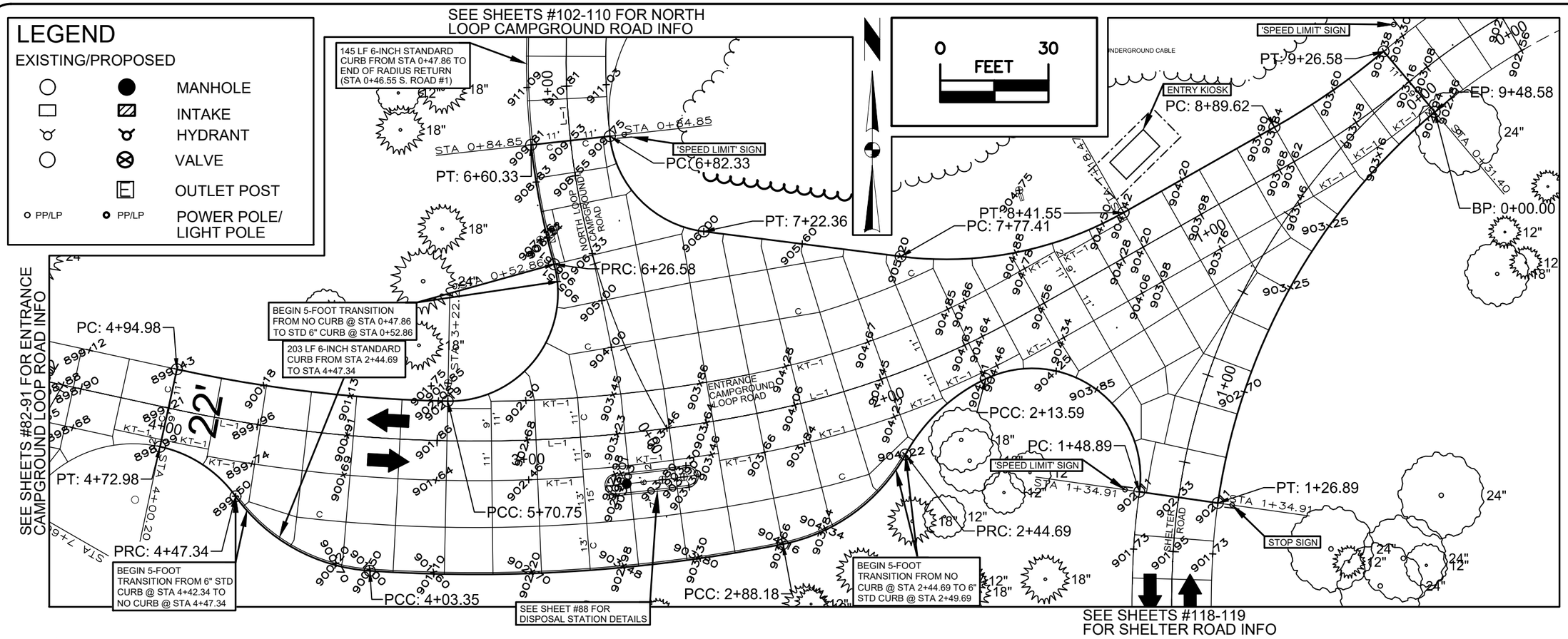
DRAWN BY:

CHK'D BY:

PROJECT NUMBER: 22-05-91-01

DATE: 12/29/2021

SHEET No: 86




| ENTRANCE ROAD EDGE OF PAVEMENT ALIGNMENT | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Curve | 126.89' | 174.00' | | 0+00.00' | 1+26.89' | 41.7815 (d) | 124.09' | S29° 00' 15"W | (1615424.6731',472179.2309',902.94') | (1615364.5041',472070.7016',902.11') | (1615536.7625',472046.1445') |
| 2 | Line | 22.00' | | N81° 53' 12"W | 1+26.89' | 1+48.89' | | | | (1615364.5041',472070.7016',902.11') | (1615342.7243',472073.8065',902.11') | |
| 3 | Curve | 64.70' | 30.00' | | 1+48.89' | 2+13.59' | 123.5724 (d) | 52.87' | N53° 40' 22"W | (1615342.7243',472073.8065',902.11') | (1615300.1286',472105.1273',904.41') | (1615313.0246',472078.0405') |
| 4 | Curve | 31.10' | 50.00' | | 2+13.59' | 2+44.69' | 35.6362 (d) | 30.60' | S46° 43' 23"W | (1615300.1286',472105.1273',904.41') | (1615277.8507',472084.1505',904.22') | (1615321.6219',472059.9827') |
| 5 | Curve | 43.50' | 50.00' | | 2+44.69' | 2+88.18' | 49.8444 (d) | 42.14' | S53° 49' 37"W | (1615277.8507',472084.1505',904.22') | (1615243.8347',472059.2791',904.16') | (1615234.0795',472108.3182') |
| 6 | Curve | 115.17' | 437.00' | | 2+88.18' | 4+03.35' | 15.0995 (d) | 114.83' | S86° 17' 56"W | (1615243.8347',472059.2791',904.16') | (1615129.2418',472051.8666',901.00') | (1615158.5741',472487.8811') |
| 7 | Curve | 44.00' | 50.00' | | 4+03.35' | 4+47.34' | 50.4159 (d) | 42.59' | N60° 56' 36"W | (1615129.2418',472051.8666',901.00') | (1615092.0118',472072.5517',899.50') | (1615132.5979',472101.7538') |
| 8 | Curve | 25.64' | 35.00' | | 4+47.34' | 4+72.98' | 41.9697 (d) | 25.07' | N56° 43' 13"W | (1615092.0118',472072.5517',899.50') | (1615071.0545',472086.3075',898.99') | (1615063.6015',472052.1102') |
| 9 | Line | 22.00' | | N12° 17' 42"E | 4+72.98' | 4+94.98' | | | | (1615071.0545',472086.3075',898.99') | (1615075.7392',472107.8029',899.43') | |
| 10 | Curve | 75.76' | 389.00' | | 4+94.98' | 5+70.75' | 11.1593 (d) | 75.64' | S83° 17' 05"E | (1615075.7392',472107.8029',899.43') | (1615150.8649',472098.9575',902.19') | (1615158.5741',472487.8811') |
| 11 | Curve | 55.83' | 30.00' | | 5+70.75' | 6+26.58' | 106.6289 (d) | 48.12' | N37° 49' 16"E | (1615150.8649',472098.9575',902.19') | (1615180.3693',472136.9654',906.61') | (1615151.4594',472128.9516') |
| 12 | Curve | 33.76' | 211.00' | | 6+26.58' | 6+60.33' | 9.1665 (d) | 33.72' | N10° 54' 36"W | (1615180.3693',472136.9654',906.61') | (1615173.9869',472170.0768',909.81') | (1615383.7018',472193.3292') |
| 13 | Line | 22.00' | | N83° 40' 23"E | 6+60.33' | 6+82.33' | | | | (1615173.9869',472170.0768',909.81') | (1615195.8529',472172.5012',909.75') | |
| 14 | Curve | 40.03' | 30.00' | | 6+82.33' | 7+22.36' | 76.4440 (d) | 37.12' | S44° 32' 56"E | (1615195.8529',472172.5012',909.75') | (1615221.8951',472146.0457',906.00') | (1615225.6702',472175.8072') |
| 15 | Line | 55.05' | | S82° 46' 15"E | 7+22.36' | 7+77.41' | | | | (1615221.8951',472146.0457',906.00') | (1615276.5093',472139.1181',905.20') | |
| 16 | Curve | 64.13' | 100.00' | | 7+77.41' | 8+41.55' | 36.7457 (d) | 63.04' | N78° 51' 23"E | (1615276.5093',472139.1181',905.20') | (1615338.3605',472151.3018',904.42') | (1615289.0931',472238.3232') |
| 17 | Line | 48.08' | | N60° 29' 01"E | 8+41.55' | 8+89.62' | | | | (1615338.3605',472151.3018',904.42') | (1615380.1974',472174.9879',903.84') | |
| 18 | Curve | 36.96' | 200.00' | | 8+89.62' | 9+26.58' | 10.5886 (d) | 36.91' | N55° 11' 21"E | (1615380.1974',472174.9879',903.84') | (1615410.5009',472196.0579',903.38') | (1615281.6625',472349.0307') |
| 19 | Line | 22.00' | | S40° 06' 18"E | 9+26.58' | 9+48.58' | | | | (1615410.5009',472196.0579',903.38') | (1615424.6731',472179.2309',902.94') | |

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

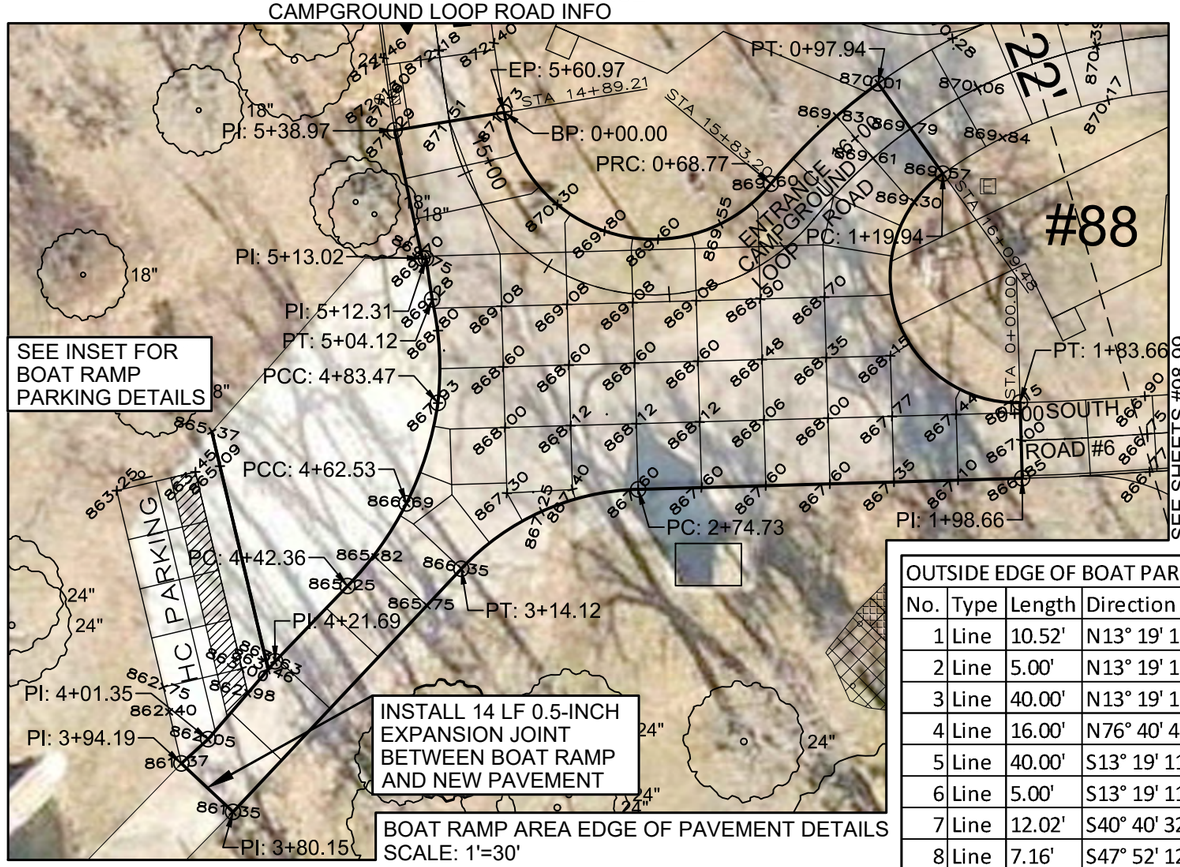
PAVING PLAN ENTRANCE ROAD EDGE

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY | DATE | REVISION |
|---|---|---|---|

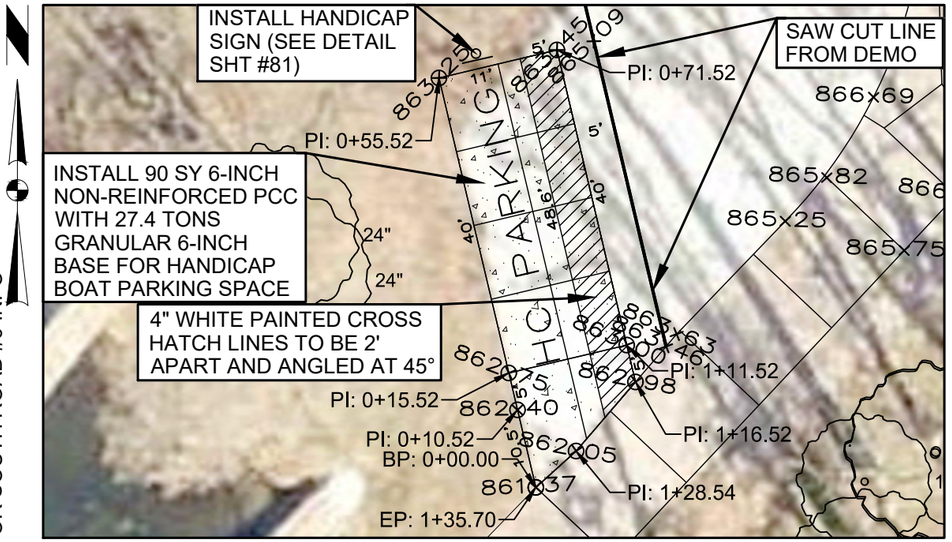
DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 87

SEE SHEETS #82-91 FOR ENTRANCE CAMPGROUND LOOP ROAD INFO




BOAT RAMP AREA EDGE OF PAVEMENT DETAILS SCALE: 1'=30'

SEE SHEETS #98-99 FOR SOUTH ROAD #6 INFO




BOAT PARKING AREA EDGE OF PAVEMENT DETAILS SCALE: 1"=20'

| OUTSIDE EDGE OF BOAT PARKING PAVEMENT ALIGNMENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Type | Length | Direction | Start Station | End Station | Start Point | End Point |
| 1 | Line | 10.52' | N13° 19' 11"W | 0+00.00' | 0+10.52' | (1614388.6340',471584.2920',861.37') | (1614386.2108',471594.5273',862.40') |
| 2 | Line | 5.00' | N13° 19' 11"W | 0+10.52' | 0+15.52' | (1614386.2108',471594.5273',862.40') | (1614385.0588',471599.3928',862.75') |
| 3 | Line | 40.00' | N13° 19' 11"W | 0+15.52' | 0+55.52' | (1614385.0588',471599.3928',862.75') | (1614375.8434',471638.3168',863.25') |
| 4 | Line | 16.00' | N76° 40' 49"E | 0+55.52' | 0+71.52' | (1614375.8434',471638.3168',863.25') | (1614391.4130',471642.0030',863.45') |
| 5 | Line | 40.00' | S13° 19' 11"E | 0+71.52' | 1+11.52' | (1614391.4130',471642.0030',863.45') | (1614400.6284',471603.0790',863.00') |
| 6 | Line | 5.00' | S13° 19' 11"E | 1+11.52' | 1+16.52' | (1614400.6284',471603.0790',863.00') | (1614401.7803',471598.2135',862.98') |
| 7 | Line | 12.02' | S40° 40' 32"W | 1+16.52' | 1+28.54' | (1614401.7803',471598.2135',862.98') | (1614393.9440',471589.0950',862.05') |
| 8 | Line | 7.16' | S47° 52' 12"W | 1+28.54' | 1+35.70' | (1614393.9440',471589.0950',862.05') | (1614388.6340',471584.2920',861.37') |

| ENTRANCE ROAD BOAT RAMP AREA EDGE OF PAVEMENT ALIGNMENT | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Curve | 68.77' | 30.00' | | 0+00.00' | 0+68.77' | 131.3441 (d) | 54.67' | S74° 59' 56"E | (1614452.5638',471713.1999',871.73') | (1614505.3728',471699.0487',869.60') | (1614482.1672',471718.0619') |
| 2 | Curve | 29.17' | 111.00' | | 0+68.77' | 0+97.94' | 15.0563 (d) | 29.08' | N46° 51' 26"E | (1614505.3728',471699.0487',869.60') | (1614526.5947',471718.9376',870.01') | (1614591.2335',471628.7000') |
| 3 | Line | 22.00' | | S35° 36' 53"E | 0+97.94' | 1+19.94' | | | | (1614526.5947',471718.9376',870.01') | (1614539.4059',471701.0526',869.57') | |
| 4 | Curve | 63.72' | 25.00' | | 1+19.94' | 1+83.66' | 146.0313 (d) | 47.82' | S18° 37' 49"E | (1614539.4059',471701.0526',869.57') | (1614554.6823',471655.7392',867.15') | (1614553.9642',471680.7289') |
| 5 | Line | 15.00' | | S1° 38' 45"E | 1+83.66' | 1+98.66' | | | | (1614554.6823',471655.7392',867.15') | (1614555.1132',471640.7454',866.85') | |
| 6 | Line | 76.07' | | S88° 21' 15"W | 1+98.66' | 2+74.73' | | | | (1614555.1132',471640.7454',866.85') | (1614479.0770',471638.5604',867.60') | |
| 7 | Curve | 39.40' | 50.00' | | 2+74.73' | 3+14.12' | 45.1447 (d) | 38.38' | S65° 46' 54"W | (1614479.0770',471638.5604',867.60') | (1614444.0704',471622.8144',866.35') | (1614480.5132',471588.5811') |
| 8 | Line | 66.03' | | S43° 12' 34"W | 3+14.12' | 3+80.15' | | | | (1614444.0704',471622.8144',866.35') | (1614398.8600',471574.6860',861.35') | |
| 9 | Line | 14.03' | | N46° 47' 26"W | 3+80.15' | 3+94.19' | | | | (1614398.8600',471574.6860',861.35') | (1614388.6340',471584.2920',861.37') | |
| 10 | Line | 7.16' | | N47° 52' 12"E | 3+94.19' | 4+01.35' | | | | (1614388.6340',471584.2920',861.37') | (1614393.9440',471589.0950',862.05') | |
| 11 | Line | 20.35' | | N40° 40' 32"E | 4+01.35' | 4+21.69' | | | | (1614393.9440',471589.0950',862.05') | (1614407.2070',471604.5280',863.63') | |
| 12 | Line | 20.67' | | N43° 55' 39"E | 4+21.69' | 4+42.36' | | | | (1614407.2070',471604.5280',863.63') | (1614421.5440',471619.4120',865.25') | |
| 13 | Curve | 20.17' | 65.33' | | 4+42.36' | 4+62.53' | 17.6892 (d) | 20.09' | N35° 27' 44"E | (1614421.5440',471619.4120',865.25') | (1614433.2000',471635.7760',866.69') | (1614374.7904',471665.0476') |
| 14 | Curve | 20.94' | 65.33' | | 4+62.53' | 4+83.47' | 18.3606 (d) | 20.85' | N17° 26' 14"E | (1614433.2000',471635.7760',866.69') | (1614439.4470',471655.6650',867.93') | (1614374.7904',471665.0476') |
| 15 | Curve | 20.65' | 60.08' | | 4+83.47' | 5+04.12' | 19.6919 (d) | 20.55' | N3° 13' 41"W | (1614439.4470',471655.6650',867.93') | (1614438.2900',471676.1790',869.28') | (1614379.7695',471662.5888') |
| 16 | Line | 8.19' | | N8° 35' 16"W | 5+04.12' | 5+12.31' | | | | (1614438.2900',471676.1790',869.28') | (1614437.0671',471684.2770',869.75') | |
| 17 | Line | 0.72' | | N89° 44' 08"W | 5+12.31' | 5+13.02' | | | | (1614437.0671',471684.2770',869.75') | (1614436.3482',471684.2803',869.70') | |
| 18 | Line | 25.94' | | N12° 13' 31"W | 5+13.02' | 5+38.97' | | | | (1614436.3482',471684.2803',869.70') | (1614430.8547',471709.6345',871.29') | |
| 19 | Line | 22.00' | | N80° 40' 23"E | 5+38.97' | 5+60.97' | | | | (1614430.8547',471709.6345',871.29') | (1614452.5638',471713.1999',871.73') | |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

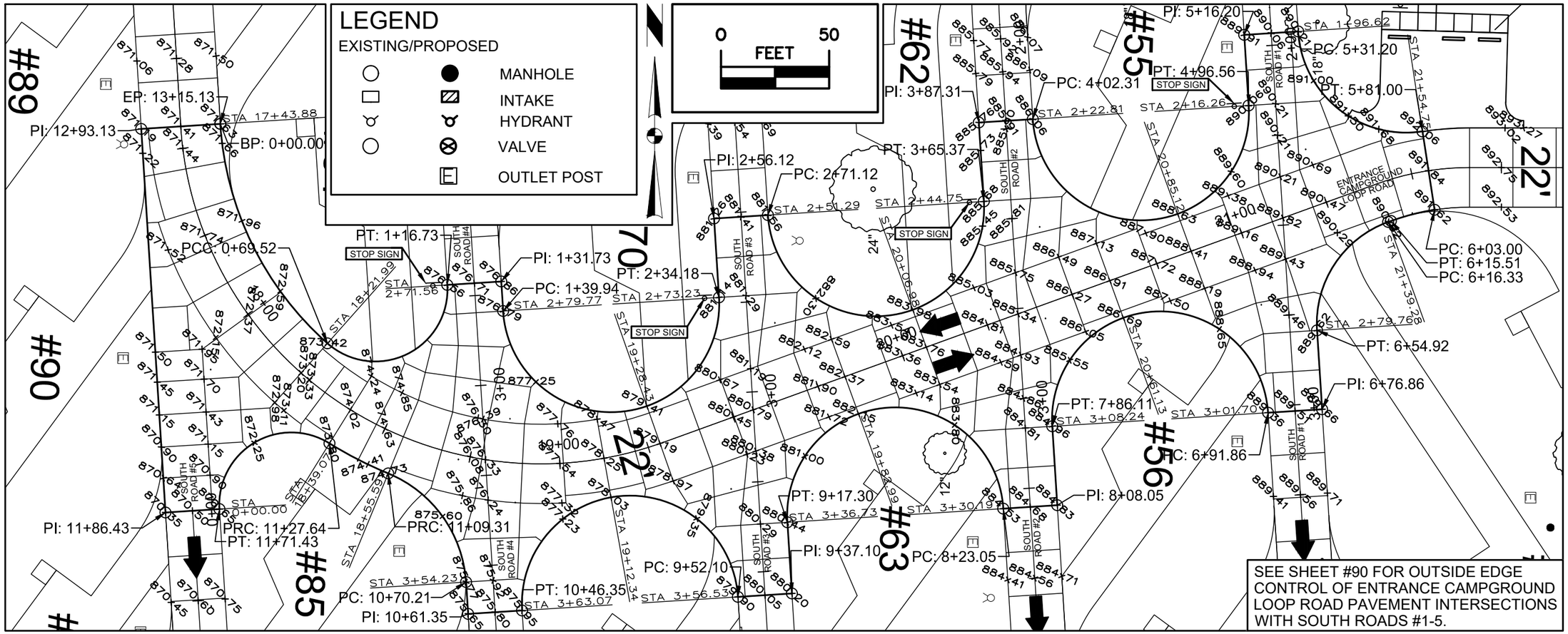
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

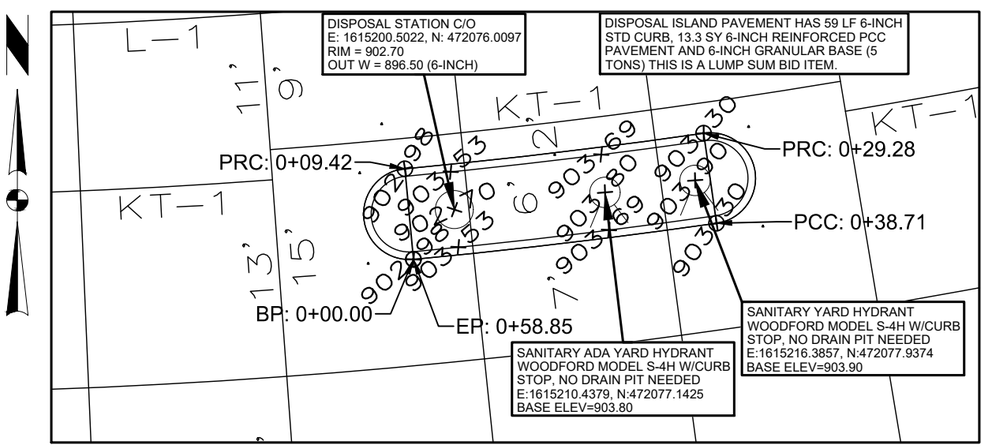
BOAT RAMP PVMT/PARKING DETAILS

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

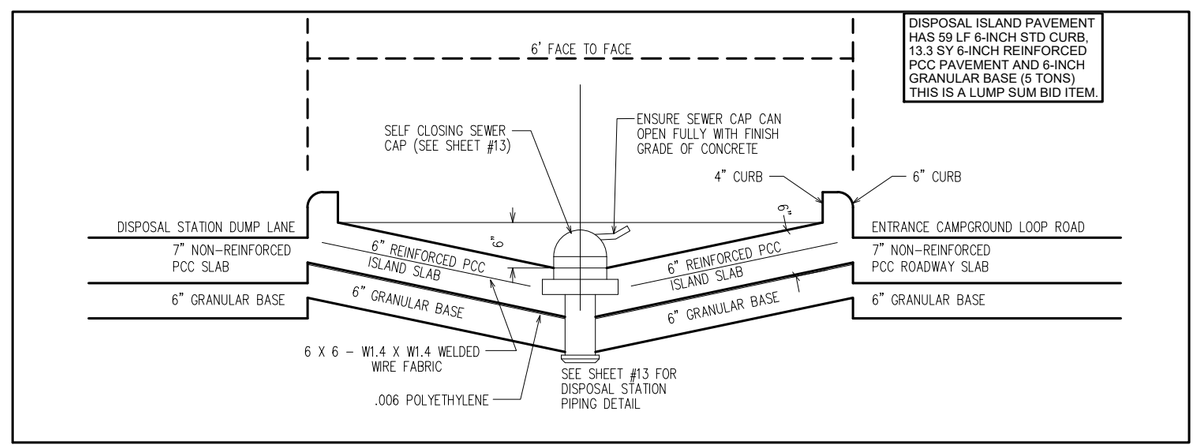
| NO. | BY | DATE | REVISION |
|---|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 88




DISPOSAL ISLAND DETAILS SCALE: 1'=10'




DISPOSAL ISLAND CROSS SECTION LOOKING WEST

| OUTSIDE EDGE OF DISOPOSAL ISLAND PAVEMENT ALIGNMENT | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Start Sta | End Sta | Delta angle | Ch length | Ch Direction | Start Point | End Point | Center Point |
| 1 | Curve | 20.15' | 417.00' | 0+00.00' | 0+20.15' | 2.7680 (d) | 20.14' | N83° 13' 07"E | (1615197.7988',472072.7300',902.98') | (1615217.8013',472075.1086',903.30') | (1615158.5741',472487.8811') |
| 2 | Curve | 9.42' | 3.00' | 0+20.15' | 0+29.57' | 180.0000 (d) | 6.00' | N8° 09' 56"W | (1615217.8013',472075.1086',903.30') | (1615216.9491',472081.0477',903.30') | (1615217.3752',472078.0782') |
| 3 | Curve | 19.86' | 411.00' | 0+29.57' | 0+49.43' | 2.7680 (d) | 19.85' | S83° 13' 07"W | (1615216.9491',472081.0477',903.30') | (1615197.2344',472078.7034',902.98') | (1615158.5741',472487.8811') |
| 4 | Curve | 9.42' | 3.00' | 0+49.43' | 0+58.85' | 180.0000 (d) | 6.00' | S5° 23' 51"E | (1615197.2344',472078.7034',902.98') | (1615197.7988',472072.7300',902.98') | (1615197.5166',472075.7167') |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

ENT ROAD PVMT EDGE & DISP ISLAND

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021

SHEET No: 89

OUTSIDE EDGE OF ENTRANCE ROAD PAVEMENT INTERSECTIONS WITH SOUTH ROADS #1-5

| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Curve | 69.52' | 89.00' | | 0+00.00' | 0+69.52' | 44.7533 (d) | 67.76' | N64° 00' 19"E | (1614662.6369',471744.4365',871.63') | (1614723.5451',471774.1364',873.42') | (1614657.0206',471833.2592') |
| 2 | Curve | 47.21' | 20.00' | | 0+69.52' | 1+16.73' | 135.2467 (d) | 36.99' | N25° 59' 41"W | (1614723.5451',471774.1364',873.42') | (1614707.3336',471807.3826',876.56') | (1614708.5957',471787.4224') |
| 3 | Line | 15.00' | | N3° 37' 05"W | 1+16.73' | 1+31.73' | | | | (1614707.3336',471807.3826',876.56') | (1614706.3871',471822.3527',876.86') | |
| 4 | Line | 8.21' | | N86° 22' 55"E | 1+31.73' | 1+39.94' | | | | (1614706.3871',471822.3527',876.86') | (1614714.5800',471822.8707',876.79') | |
| 5 | Curve | 94.25' | 30.00' | | 1+39.94' | 2+34.18' | 180.0000 (d) | 60.00' | N3° 37' 05"W | (1614714.5800',471822.8707',876.79') | (1614710.7937',471882.7511',881.14') | (1614712.6868',471852.8109') |
| 6 | Line | 21.94' | | S86° 22' 55"W | 2+34.18' | 2+56.12' | | | | (1614710.7937',471882.7511',881.14') | (1614688.8982',471881.3667',881.26') | |
| 7 | Line | 15.00' | | N3° 37' 05"W | 2+56.12' | 2+71.12' | | | | (1614688.8982',471881.3667',881.26') | (1614687.9517',471896.3368',881.56') | |
| 8 | Curve | 94.25' | 30.00' | | 2+71.12' | 3+65.37' | 180.0000 (d) | 60.00' | N3° 37' 05"W | (1614687.9517',471896.3368',881.56') | (1614684.1654',471956.2172',885.68') | (1614686.0585',471926.2770') |
| 9 | Line | 21.94' | | S86° 22' 55"W | 3+65.37' | 3+87.31' | | | | (1614684.1654',471956.2172',885.68') | (1614662.2669',471954.8325',885.76') | |
| 10 | Line | 15.00' | | N3° 37' 05"W | 3+87.31' | 4+02.31' | | | | (1614662.2669',471954.8325',885.76') | (1614661.3203',471969.8026',886.06') | |
| 11 | Curve | 94.25' | 30.00' | | 4+02.31' | 4+96.56' | 180.0000 (d) | 60.00' | N3° 37' 05"W | (1614661.3203',471969.8026',886.06') | (1614657.5340',472029.6831',890.06') | (1614659.4272',471999.7428') |
| 12 | Line | 19.64' | | S86° 22' 55"W | 4+96.56' | 5+16.20' | | | | (1614657.5340',472029.6831',890.06') | (1614637.9310',472028.4435',889.91') | |
| 13 | Line | 15.00' | | N3° 37' 05"W | 5+16.20' | 5+31.20' | | | | (1614637.9310',472028.4435',889.91') | (1614636.9845',472043.4136',890.21') | |
| 14 | Curve | 49.80' | 30.00' | | 5+31.20' | 5+81.00' | 95.1118 (d) | 44.28' | N38° 49' 34"E | (1614636.9845',472043.4136',890.21') | (1614664.7438',472077.9071',892.06') | (1614635.0913',472073.3538') |
| 15 | Line | 22.00' | | N81° 16' 13"E | 5+81.00' | 6+03.00' | | | | (1614664.7438',472077.9071',892.06') | (1614686.4889',472081.2461',891.62') | |
| 16 | Curve | 12.51' | 64.00' | | 6+03.00' | 6+15.51' | 11.1958 (d) | 12.49' | S14° 19' 40"E | (1614686.4889',472081.2461',891.62') | (1614689.5788',472069.1486',0.0000') | (1614749.7475',472090.9597') |
| 17 | Line | 0.82' | | S19° 55' 32"E | 6+15.51' | 6+16.33' | | | | (1614689.5788',472069.1486',0.0000') | (1614689.8587',472068.3762',890.92') | |
| 18 | Curve | 38.59' | 30.00' | | 6+16.33' | 6+54.92' | 73.6925 (d) | 35.98' | S56° 46' 18"E | (1614689.8587',472068.3762',890.92') | (1614719.9560',472048.6600',889.62') | (1614718.0628',472078.6002') |
| 19 | Line | 21.94' | | N86° 22' 55"E | 6+54.92' | 6+76.86' | | | | (1614719.9560',472048.6600',889.62') | (1614741.8545',472050.0447',889.66') | |
| 20 | Line | 15.00' | | S3° 37' 05"E | 6+76.86' | 6+91.86' | | | | (1614741.8545',472050.0447',889.66') | (1614742.8010',472035.0745',889.36') | |
| 21 | Curve | 94.25' | 30.00' | | 6+91.86' | 7+86.11' | 180.0000 (d) | 60.00' | S3° 37' 05"E | (1614742.8010',472035.0745',889.36') | (1614746.5873',471975.1941',884.96') | (1614744.6942',472005.1343') |
| 22 | Line | 21.94' | | N86° 22' 55"E | 7+86.11' | 8+08.05' | | | | (1614746.5873',471975.1941',884.96') | (1614768.4858',471976.5788',884.83') | |
| 23 | Line | 15.00' | | S3° 37' 05"E | 8+08.05' | 8+23.05' | | | | (1614768.4858',471976.5788',884.83') | (1614769.4324',471961.6087',884.53') | |
| 24 | Curve | 94.25' | 30.00' | | 8+23.05' | 9+17.30' | 179.9999 (d) | 60.00' | S3° 37' 05"E | (1614769.4324',471961.6087',884.53') | (1614773.2186',471901.7283',880.44') | (1614771.3255',471931.6685') |
| 25 | Line | 19.80' | | N86° 22' 55"E | 9+17.30' | 9+37.10' | | | | (1614773.2186',471901.7283',880.44') | (1614792.9813',471902.9779',880.20') | |
| 26 | Line | 15.00' | | S3° 37' 05"E | 9+37.10' | 9+52.10' | | | | (1614792.9813',471902.9779',880.20') | (1614793.9278',471888.0078',879.90') | |
| 27 | Curve | 94.25' | 30.00' | | 9+52.10' | 10+46.35' | 180.0000 (d) | 60.00' | S3° 37' 05"E | (1614793.9278',471888.0078',879.90') | (1614797.7141',471828.1274',875.95') | (1614795.8210',471858.0676') |
| 28 | Line | 15.00' | | S3° 37' 05"E | 10+46.35' | 10+61.35' | | | | (1614797.7141',471828.1274',875.95') | (1614798.6607',471813.1573',875.65') | |
| 29 | Line | 8.86' | | S86° 22' 55"W | 10+61.35' | 10+70.21' | | | | (1614798.6607',471813.1573',875.65') | (1614789.8141',471812.5979',875.77') | |
| 30 | Curve | 39.10' | 35.00' | | 10+70.21' | 11+09.31' | 64.0010 (d) | 37.09' | S54° 22' 53"W | (1614789.8141',471812.5979',875.77') | (1614759.6592',471790.9944',874.73') | (1614792.0228',471777.6676') |
| 31 | Curve | 18.33' | 111.00' | | 11+09.31' | 11+27.64' | 9.4622 (d) | 18.31' | S27° 06' 44"W | (1614759.6592',471790.9944',874.73') | (1614751.3145',471774.6959',873.80') | (1614657.0206',471833.2592') |
| 32 | Curve | 43.79' | 20.00' | | 11+27.64' | 11+71.43' | 125.4613 (d) | 35.55' | S30° 53' 15"E | (1614751.3145',471774.6959',873.80') | (1614769.5665',471744.1838',870.65') | (1614768.3044',471764.1439') |
| 33 | Line | 15.00' | | S3° 37' 05"E | 11+71.43' | 11+86.43' | | | | (1614769.5665',471744.1838',870.65') | (1614770.5131',471729.2137',870.35') | |
| 34 | Line | 106.70' | | S86° 22' 55"W | 11+86.43' | 12+93.13' | | | | (1614770.5131',471729.2137',870.35') | (1614664.0252',471722.4804',871.19') | |
| 35 | Line | 22.00' | | N3° 37' 05"W | 12+93.13' | 13+15.13' | | | | (1614664.0252',471722.4804',871.19') | (1614662.6369',471744.4365',871.63') | |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

ENT ROAD I-SECTIONS W/ROADS #1-5

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

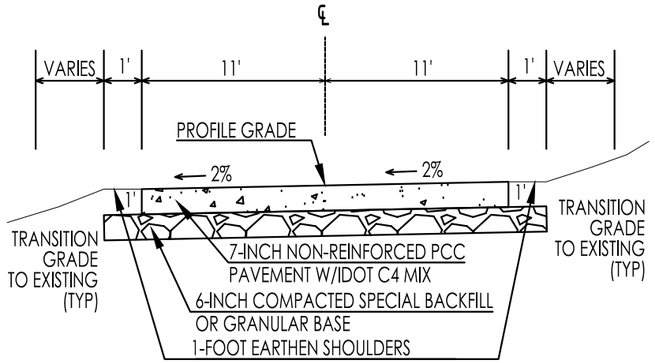
DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

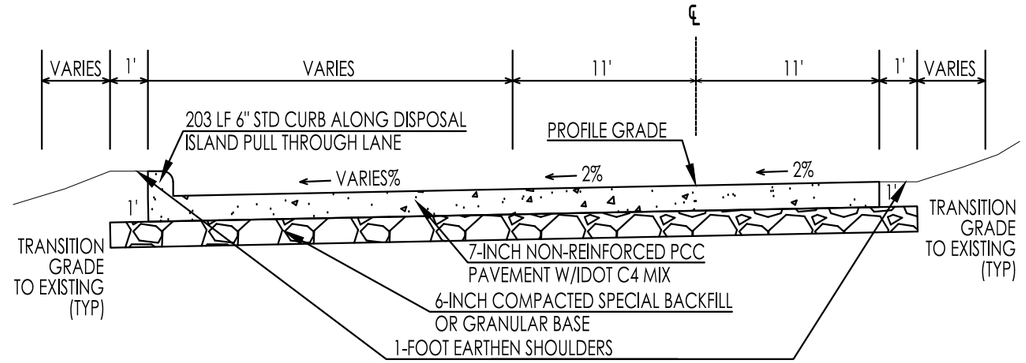
DATE: 12/29/2021

SHEET No: 90



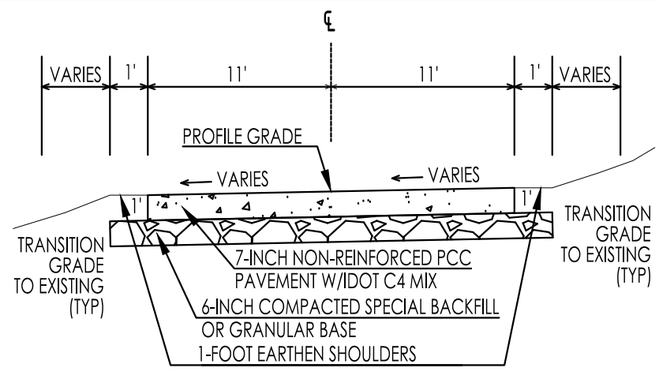

STA 0+00.00 TO STA 0+31.40 & STA 4+00.20 TO STA 9+75.00
ENTRANCE CAMPGROUND LOOP ROAD CROSS-SECTION

NO SCALE




STA 0+31.40 TO STA 4+00.20
ENTRANCE CAMPGROUND LOOP ROAD CROSS-SECTION

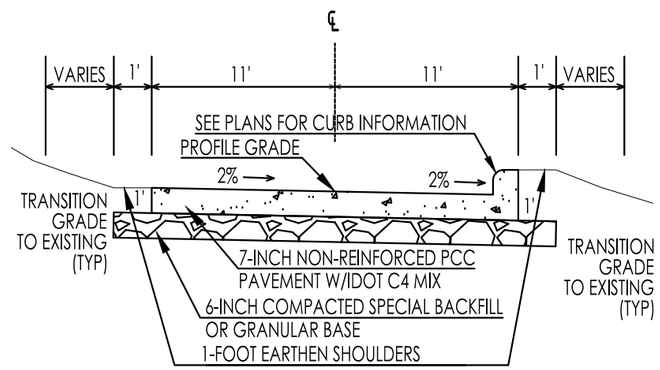
NO SCALE




NOTE: TRANSITION CROSS-SLOPE FROM +2% TO -2% BETWEEN STATIONS 9+75.00 AND 10+75.00. AT STATION 9+75.00 THE CROSS-SLOPE IS 2% RIGHT TO LEFT, AT STATION 10+25.00 THERE IS 0% CROSS-SLOPE AND AT STATION 10+75.00 THE CROSS-SLOPE IS 2% LEFT TO RIGHT.

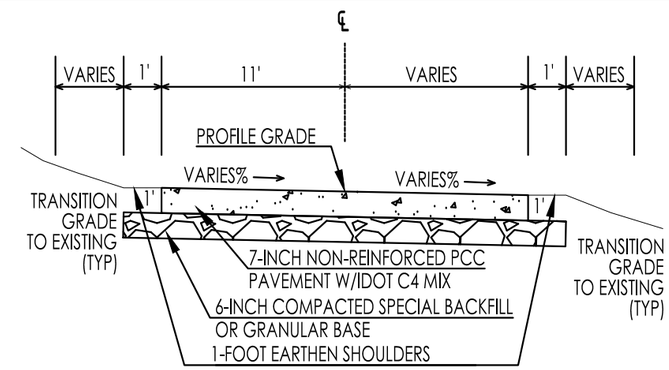
STA 9+75.00 TO STA 10+75.00
ENTRANCE CAMPGROUND LOOP ROAD CROSS-SECTION

NO SCALE



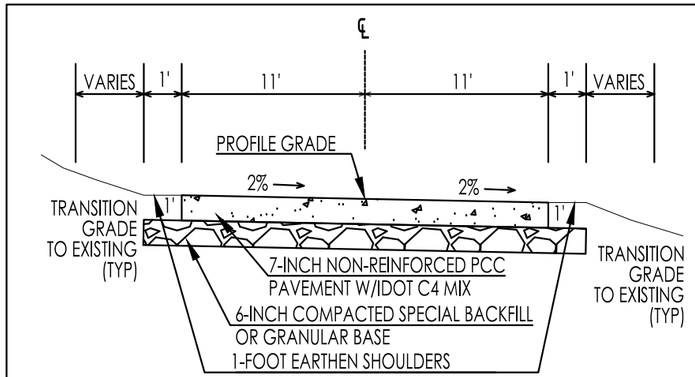

STA 10+75.00 TO STA 14+89.21
ENTRANCE CAMPGROUND LOOP ROAD CROSS-SECTION

NO SCALE




STA 14+89.21 TO STA 16+09.48
BOAT RAMP MANEUVERING AREA
ENTRANCE CAMPGROUND LOOP ROAD CROSS-SECTION

NO SCALE




STA 16+09.48 TO STA 22+02.20
ENTRANCE CAMPGROUND LOOP ROAD CROSS-SECTION

NO SCALE

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

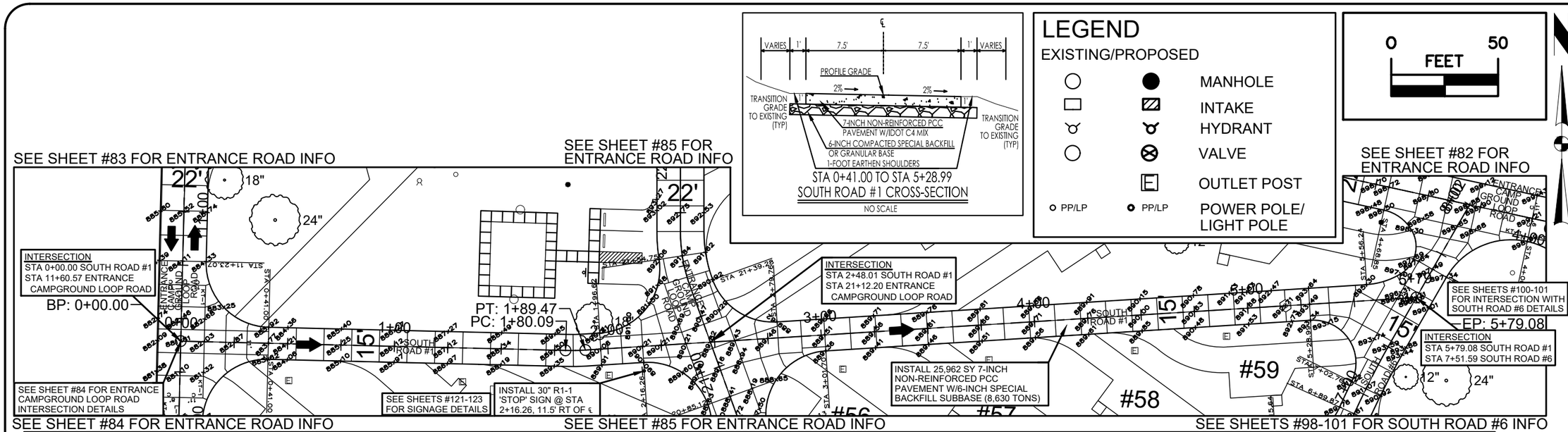
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

ENTRANCE ROAD CROSS SECTIONS

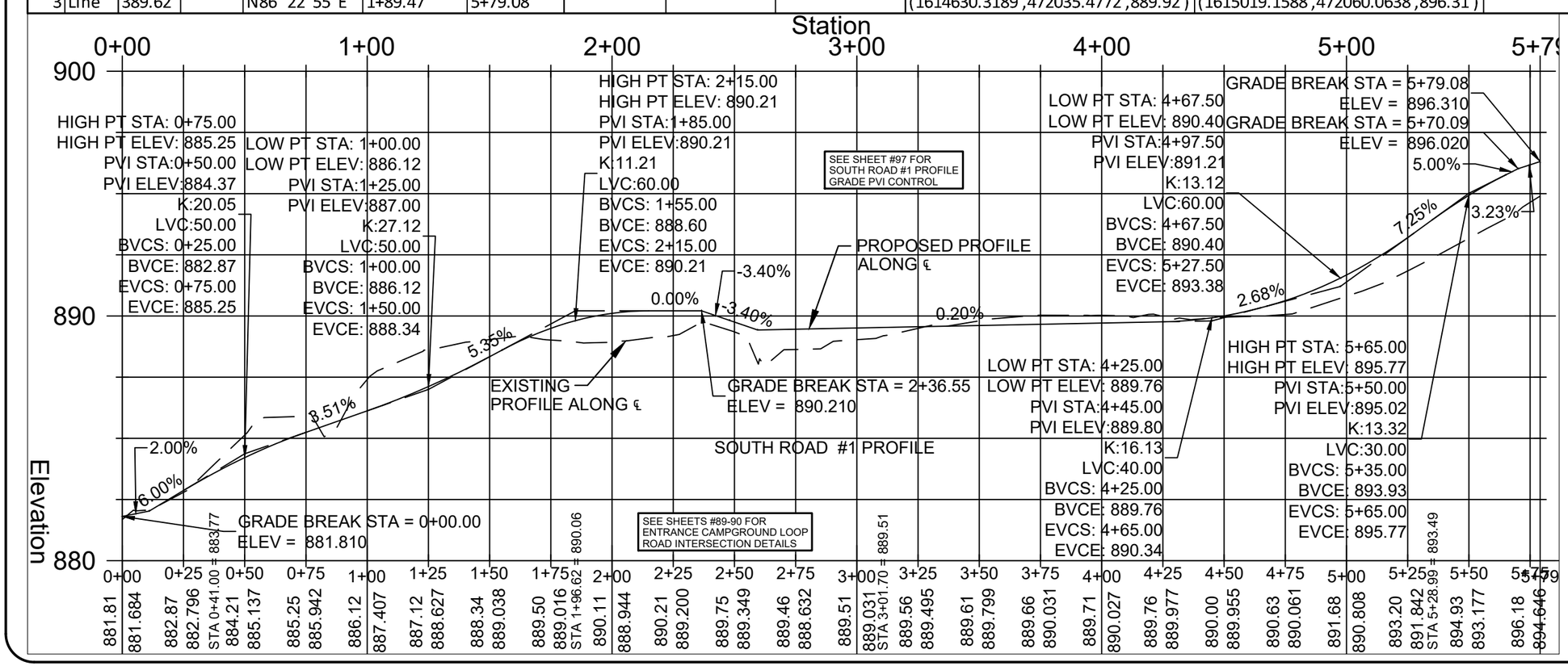
CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
CHK'D BY:
PROJECT NUMBER: 22-05-91-01
DATE: 12/29/2021
SHEET No: 91




| SOUTH CAMPGROUND ROAD #1 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 180.09' | | S88° 37' 13"E | 0+00.00' | 1+80.09' | | | | (1614440.9075',472039.6303',881.81') | (1614620.9468',472035.2941',889.67') | |
| 2 | Curve | 9.38' | 107.50' | | 1+80.09' | 1+89.47' | 4.9977 (d) | 9.37' | N88° 52' 51"E | (1614620.9468',472035.2941',889.67') | (1614630.3189',472035.4772',889.92') | (1614623.5351',472142.7629') |
| 3 | Line | 389.62' | | N86° 22' 55"E | 1+89.47' | 5+79.08' | | | | (1614630.3189',472035.4772',889.92') | (1615019.1588',472060.0638',896.31') | |




CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

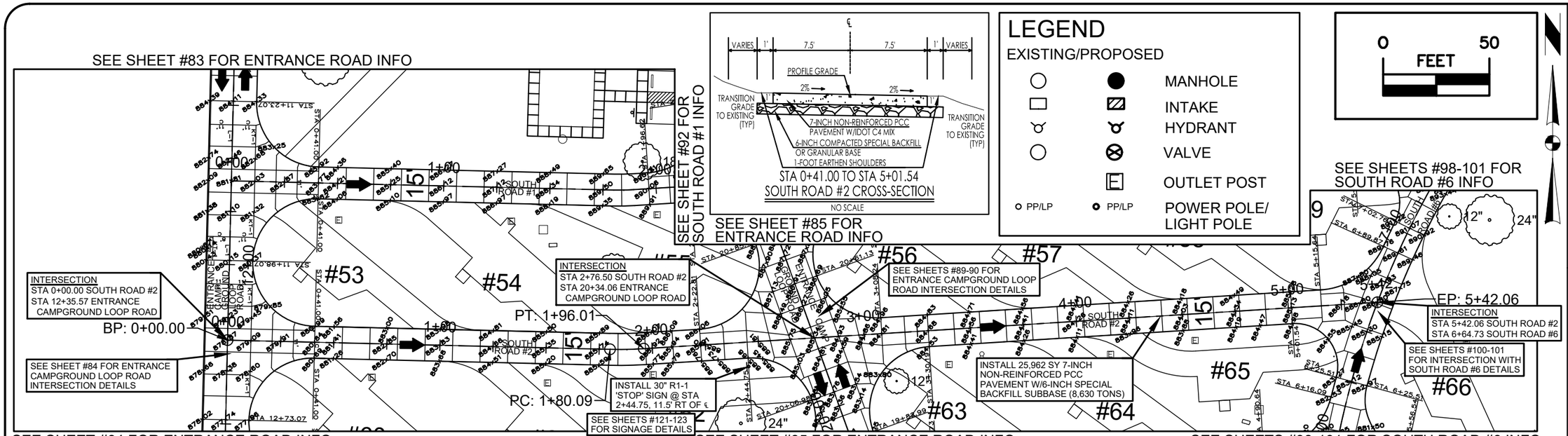
ENGINEERING SERVICES - WALLACE BUILING
502 E. 9TH ST., DES MOINES, IA 50319-0034

PAVING PLAN SOUTH ROAD #1

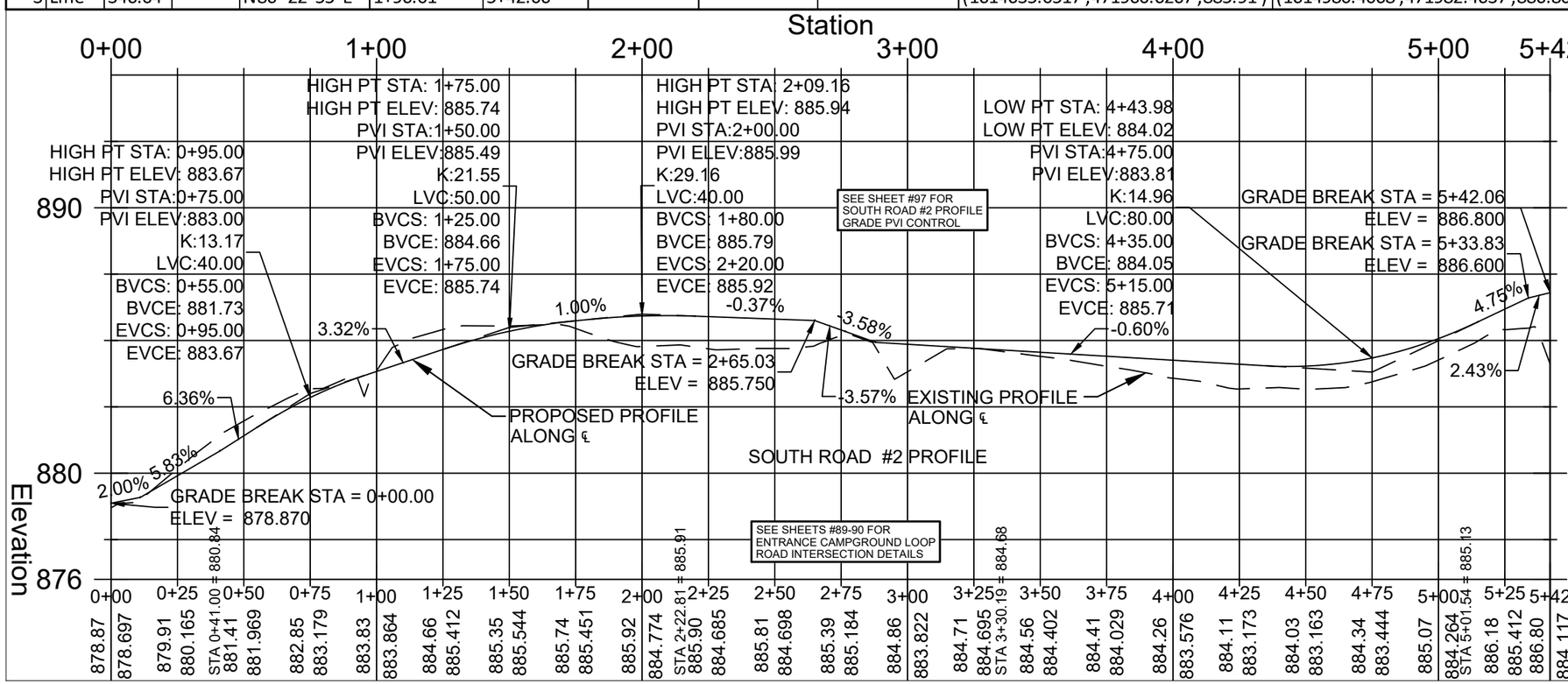
CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 8/01/2021
SHEET No: 92




| SOUTH CAMPGROUND ROAD #2 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 180.09' | | S88° 37' 13"E | 0+00.00' | 1+80.09' | | | | (1614439.1016',471964.6520',878.87') | (1614619.1409',471960.3158',885.79') | |
| 2 | Curve | 15.92' | 182.50' | | 1+80.09' | 1+96.01' | 4.9977 (d) | 15.91' | N88° 52' 51"E | (1614619.1409',471960.3158',885.79') | (1614635.0517',471960.6267',885.91') | (1614623.5351',472142.7629') |
| 3 | Line | 346.04' | | N86° 22' 55"E | 1+96.01' | 5+42.06' | | | | (1614635.0517',471960.6267',885.91') | (1614980.4068',471982.4637',886.80') | |




CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

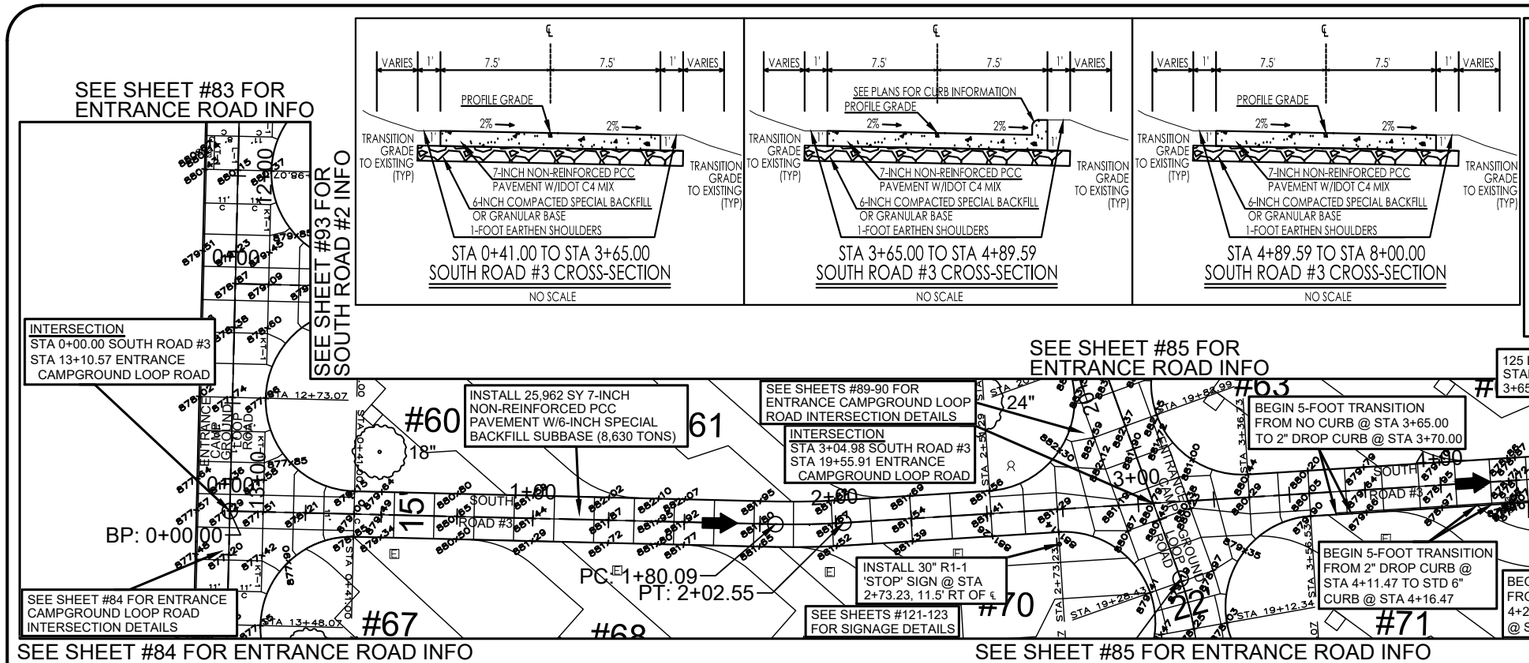
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

PAVING PLAN SOUTH ROAD #2

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 93



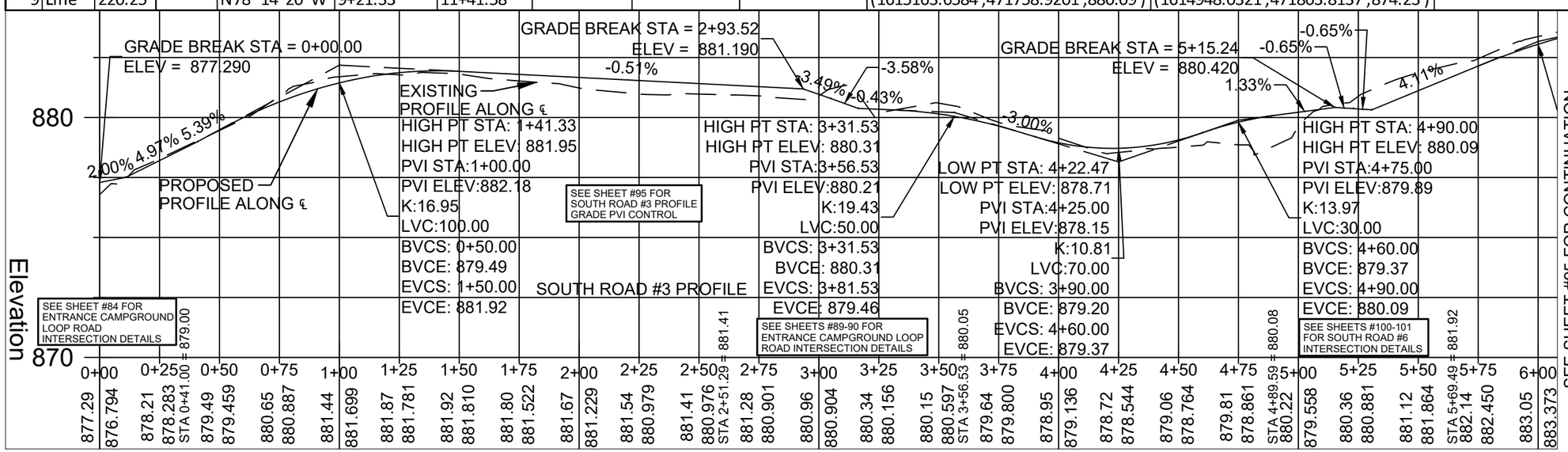

## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE

0 — 50 FEET

| SOUTH CAMPGROUND ROAD #3 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 180.09' | | S88° 37' 13"E | 0+00.00' | 1+80.09' | | | | (1614437.2958',471889.6738',887.29') | (1614617.3351',471885.3376',881.77') | |
| 2 | Curve | 22.46' | 257.50' | | 1+80.09' | 2+02.55' | 4.9977 (d) | 22.45' | N88° 52' 51"E | (1614617.3351',471885.3376',881.77') | (1614639.7846',471885.7762',881.66') | (1614623.5351',472142.7629') |
| 3 | Line | 331.45' | | N86° 22' 55"E | 2+02.55' | 5+34.01' | | | | (1614639.7846',471885.7762',881.66') | (1614970.5776',471906.6925',880.46') | |
| 4 | Curve | 20.13' | 75.00' | | 5+34.01' | 5+54.14' | 15.3790 (d) | 20.07' | S85° 55' 43"E | (1614970.5776',471906.6925',880.46') | (1614990.5977',471905.2674',881.29') | (1614975.3104',471831.8419') |
| 5 | Line | 199.26' | | S78° 14' 20"E | 5+54.14' | 7+53.39' | | | | (1614990.5977',471905.2674',881.29') | (1615185.6720',471864.6528',885.48') | |
| 6 | Curve | 82.47' | 52.50' | | 7+53.39' | 8+35.86' | 90.0000 (d) | 74.25' | S33° 14' 20"E | (1615185.6720',471864.6528',885.48') | (1615226.3688',471802.5539',883.87') | (1615174.9709',471813.2550') |
| 7 | Line | 3.00' | | S11° 45' 40"W | 8+35.86' | 8+38.86' | | | | (1615226.3688',471802.5539',883.87') | (1615225.7573',471799.6169',883.77') | |
| 8 | Curve | 82.47' | 52.50' | | 8+38.86' | 9+21.33' | 90.0000 (d) | 74.25' | S56° 45' 40"W | (1615225.7573',471799.6169',883.77') | (1615163.6584',471758.9201',880.09') | (1615174.3595',471810.3179') |
| 9 | Line | 220.25' | | N78° 14' 20"W | 9+21.33' | 11+41.58' | | | | (1615163.6584',471758.9201',880.09') | (1614948.0321',471803.8137',874.23') | |




CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

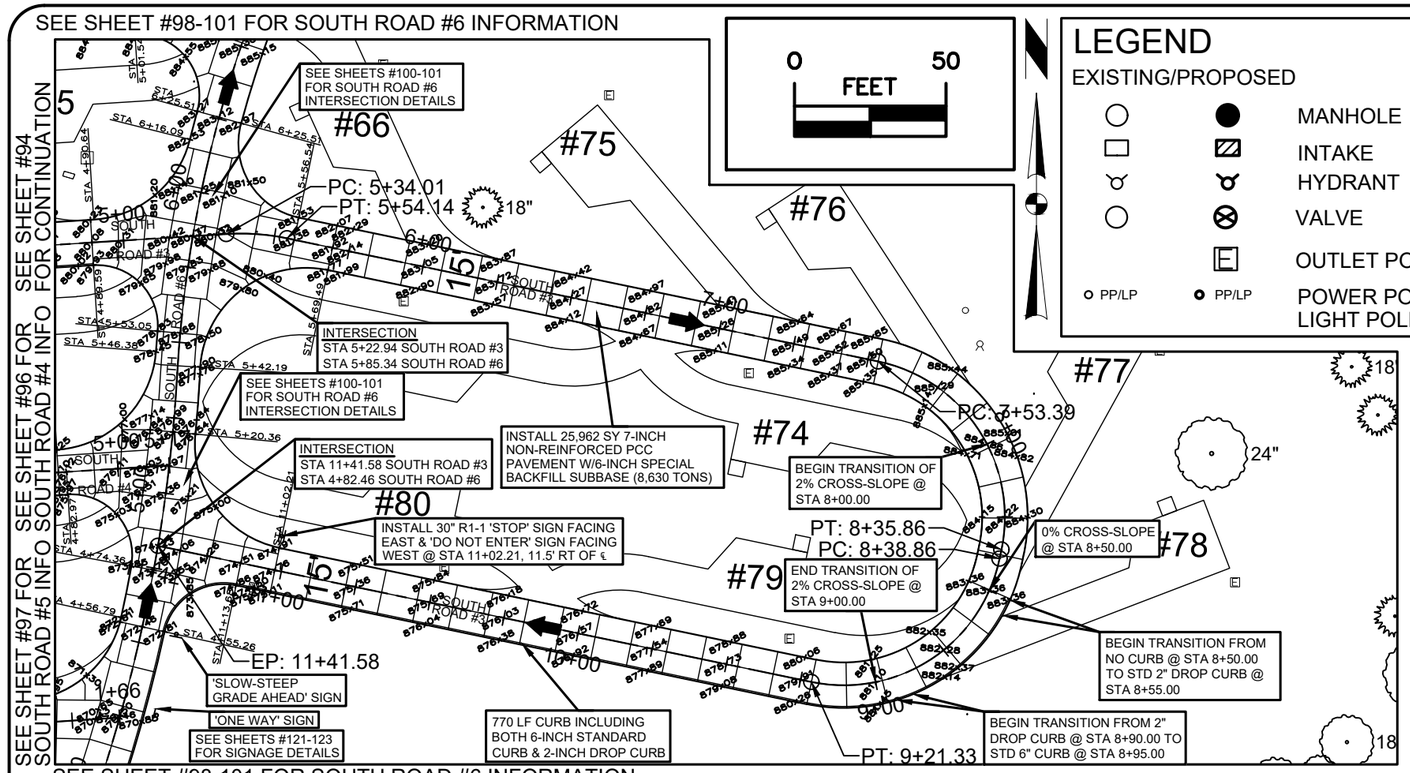
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

PAVING PLAN SOUTH ROAD #3

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY: DATE | REVISION |
|---|---|---|

DRAWN BY:
CHK'D BY:
PROJECT NUMBER: 22-05-91-01
DATE: 12/29/2021
SHEET No: 94

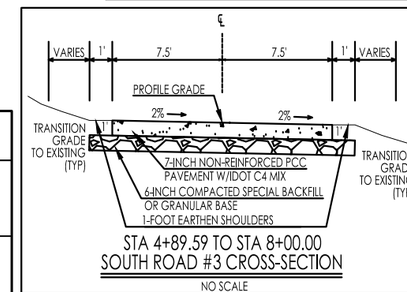



## LEGEND

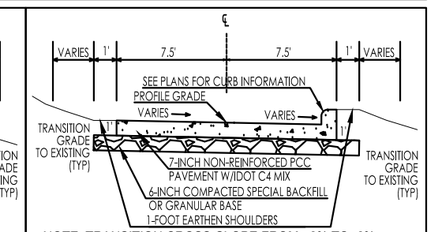
EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — POWER POLE/ LIGHT POLE

| PROPOSED PROFILE GRADE SOUTH ROAD #3 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 877.29' | | 2.00% | | | | |
| 2 | 0+11.00' | 877.51' | 2.00% | 4.97% | 2.97% | | | |
| 3 | 0+41.00' | 879.00' | 4.97% | 5.39% | 0.42% | | | |
| 4 | 1+00.00' | 882.18' | 5.39% | -0.51% | 5.90% | Crest | 100.00' | 16.945 |
| 5 | 2+93.52' | 881.19' | -0.51% | -3.49% | 2.98% | | | |
| 6 | 3+04.98' | 880.79' | -3.49% | -3.58% | 0.09% | | | |
| 7 | 3+16.44' | 880.38' | -3.58% | -0.43% | 3.15% | | | |
| 8 | 3+56.53' | 880.21' | -0.43% | -3.00% | 2.57% | Crest | 50.00' | 19.426 |
| 9 | 4+25.00' | 878.15' | -3.00% | 3.47% | 6.48% | Sag | 70.00' | 10.806 |
| 10 | 4+75.00' | 879.89' | 3.47% | 1.33% | 2.15% | Crest | 30.00' | 13.969 |
| 11 | 5+15.24' | 880.42' | 1.33% | -0.65% | 1.97% | | | |
| 12 | 5+22.94' | 880.37' | -0.65% | -0.65% | 0.00% | | | |
| 13 | 5+30.65' | 880.32' | -0.65% | 4.11% | 4.76% | | | |
| 14 | 6+00.00' | 883.17' | 4.11% | 2.20% | 1.91% | Crest | 50.00' | 26.16 |
| 15 | 7+75.00' | 887.02' | 2.20% | -4.74% | 6.94% | Crest | 200.00' | 28.822 |
| 16 | 10+00.00' | 876.36' | -4.74% | -1.33% | 3.41% | Sag | 50.00' | 14.662 |
| 17 | 10+75.00' | 875.36' | -1.33% | -2.20% | 0.87% | | | |
| 18 | 11+34.07' | 874.06' | -2.20% | 2.26% | 4.47% | | | |
| 19 | 11+41.58' | 874.23' | 2.26% | | | | | |

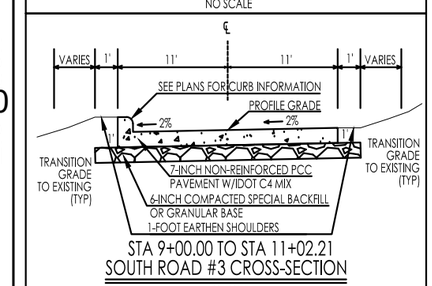



STA 4+89.59 TO STA 8+00.00
SOUTH ROAD #3 CROSS-SECTION
NO SCALE

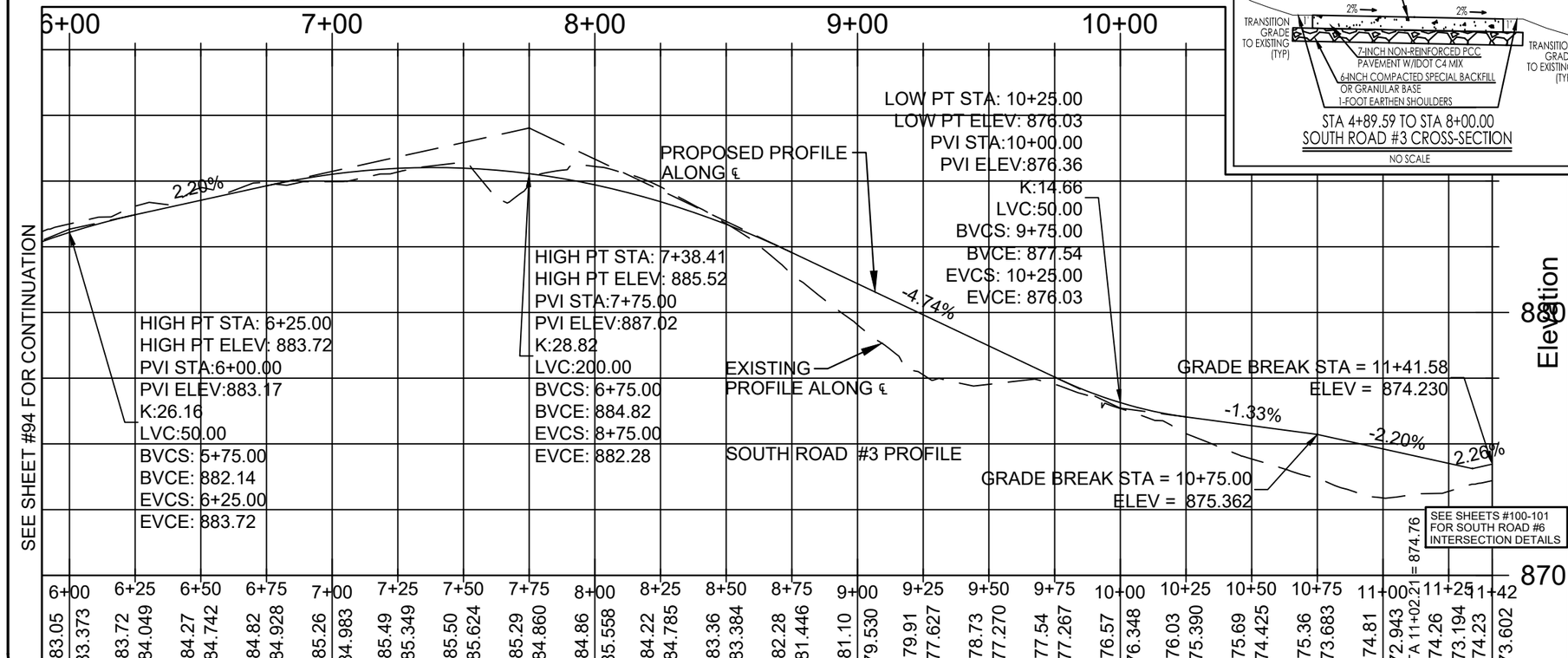



NOTE: TRANSITION CROSS-SLOPE FROM +2% TO -2% BETWEEN STATIONS 8+00.00 AND 9+00.00. AT STATION 8+00.00 THE CROSS-SLOPE IS 2% LEFT TO RIGHT, AT STATION 8+50.00 THERE IS 0% CROSS-SLOPE AND AT STATION 9+00.00 THE CROSS-SLOPE IS 2% RIGHT TO LEFT. CURBING STARTS @ STA 8+50.00.

STA 8+00.00 TO STA 9+00.00
SOUTH ROAD #3 CROSS-SECTION
NO SCALE




STA 9+00.00 TO STA 11+02.21
SOUTH ROAD #3 CROSS-SECTION
NO SCALE




CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

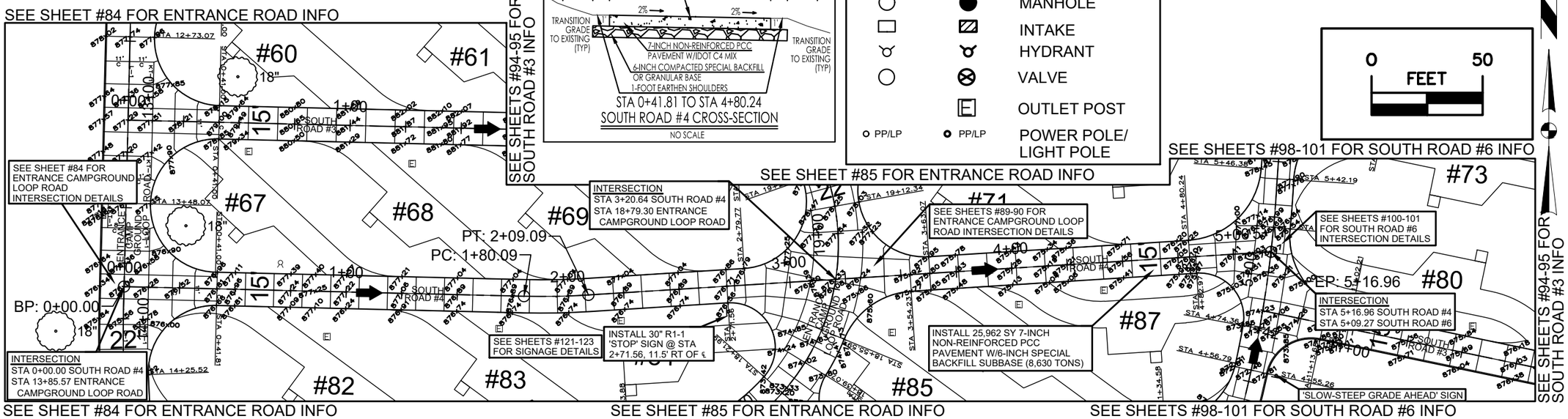
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

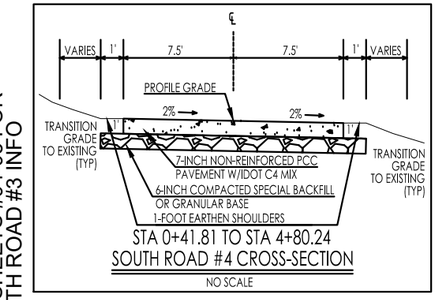
PAVING PLAN SOUTH ROAD #3

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY: DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 95



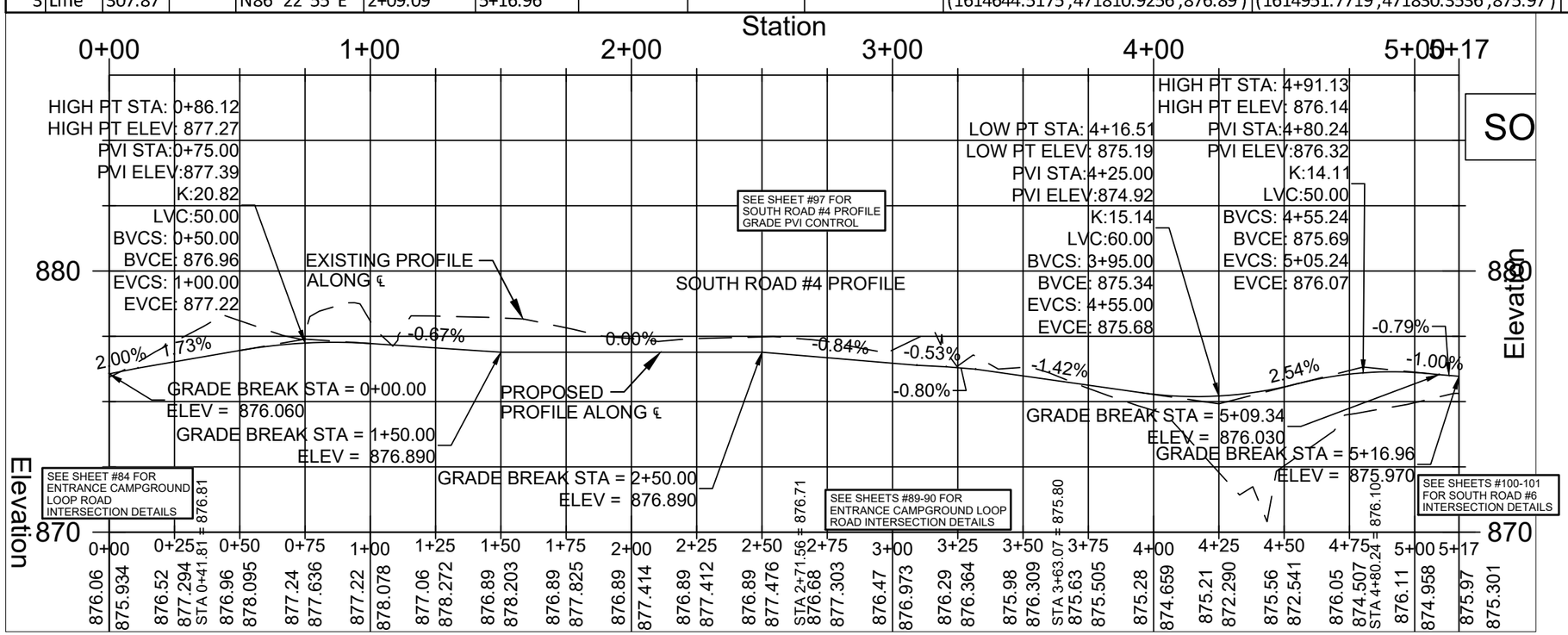




## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE

| SOUTH CAMPGROUND ROAD #4 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 180.09' | | S88° 37' 13"E | 0+00.00' | 1+80.09' | | | | (1614435.4900',471814.6955',876.06') | (1614615.5293',471810.3593',876.89') | |
| 2 | Curve | 29.00' | 332.50' | | 1+80.09' | 2+09.09' | 4.9977 (d) | 28.99' | N88° 52' 51"E | (1614615.5293',471810.3593',876.89') | (1614644.5175',471810.9256',876.89') | (1614623.5351',472142.7629') |
| 3 | Line | 307.87' | | N86° 22' 55"E | 2+09.09' | 5+16.96' | | | | (1614644.5175',471810.9256',876.89') | (1614951.7719',471830.3536',875.97') | |




CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PAVING PLAN SOUTH ROAD #4

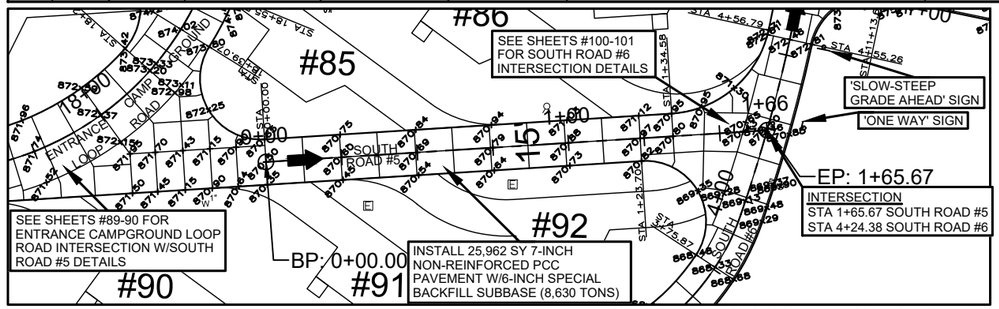
CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

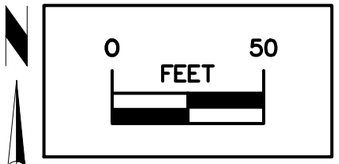
DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021

SHEET No: 96

| SOUTH CAMPGROUND ROAD #5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Type | Length | Direction | Start Station | End Station | Start Point | End Point |
| 1 | Line | 165.67' | N86° 22' 55"E | 0+00.00' | 1+65.67' | (1614770.0398',471736.6988',870.50') | (1614935.3796',471747.1533',870.46') |



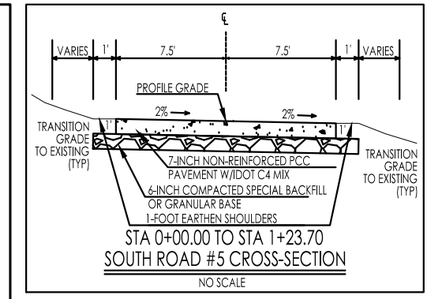

SEE SHEETS #98-101 FOR SOUTH ROAD #6 INFO



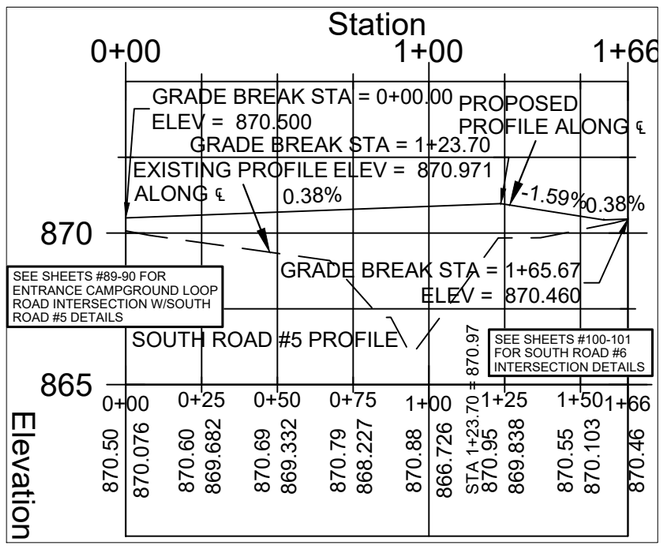

## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE




STA 0+00.00 TO STA 1+23.70
SOUTH ROAD #5 CROSS-SECTION
NO SCALE




| PROPOSED PROFILE GRADE ENTRANCE CAMPGROUND LOOP ROAD | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 902.78' | | 1.20% | | | | |
| 2 | 1+75.00' | 904.88' | 1.20% | -1.65% | 2.85% | Crest | 70.00' | 24.579 |
| 3 | 3+00.00' | 902.82' | -1.65% | -3.82% | 2.17% | Crest | 50.00' | 23.02 |
| 4 | 4+00.00' | 899.00' | -3.82% | -0.40% | 3.42% | Sag | 50.00' | 14.62 |
| 5 | 7+75.00' | 897.50' | -0.40% | -1.60% | 1.20% | Crest | 50.00' | 41.667 |
| 6 | 9+50.00' | 894.70' | -1.60% | -6.12% | 4.52% | Crest | 150.00' | 33.186 |
| 7 | 11+75.00' | 880.93' | -6.12% | -3.40% | 2.72% | Sag | 50.00' | 18.36 |
| 8 | 12+75.00' | 877.53' | -3.40% | -0.67% | 2.72% | Sag | 50.00' | 18.36 |
| 9 | 13+75.00' | 876.86' | -0.67% | -4.68% | 4.01% | Crest | 100.00' | 24.958 |
| 10 | 15+50.00' | 868.67' | -4.68% | 1.88% | 6.56% | Sag | 100.00' | 15.233 |
| 11 | 16+25.00' | 870.08' | 1.88% | 1.22% | 0.67% | Crest | 30.00' | 45 |
| 12 | 17+25.00' | 871.30' | 1.22% | 0.55% | 0.67% | Crest | 30.00' | 45.002 |
| 13 | 18+00.00' | 871.71' | 0.55% | 5.82% | 5.27% | Sag | 100.00' | 18.977 |
| 14 | 21+15.00' | 890.05' | 5.82% | 4.50% | 1.32% | Crest | 50.00' | 37.859 |
| 15 | 21+90.00' | 893.42' | 4.50% | 7.50% | 3.00% | Sag | 30.00' | 10 |
| 16 | 22+25.00' | 896.05' | 7.50% | 4.12% | 3.38% | | | |
| 17 | 22+42.22' | 896.76' | 4.12% | 2.00% | 2.12% | | | |
| 18 | 22+53.22' | 896.98' | 2.00% | | | | | |

| PROPOSED PROFILE GRADE SOUTH ROAD #1 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 881.81' | | 2.00% | | | | |
| 2 | 0+11.00' | 882.03' | 2.00% | 6.00% | 4.00% | | | |
| 3 | 0+50.00' | 884.37' | 6.00% | 3.51% | 2.49% | Crest | 50.00' | 20.053 |
| 4 | 1+25.00' | 887.00' | 3.51% | 5.35% | 1.84% | Sag | 50.00' | 27.125 |
| 5 | 1+85.00' | 890.21' | 5.35% | 0.00% | 5.35% | Crest | 60.00' | 11.215 |
| 6 | 2+36.55' | 890.21' | 0.00% | -3.40% | 3.40% | | | |
| 7 | 2+48.01' | 889.82' | -3.40% | -3.40% | 0.00% | | | |
| 8 | 2+59.47' | 889.43' | -3.40% | 0.20% | 3.60% | | | |
| 9 | 4+45.00' | 889.80' | 0.20% | 2.68% | 2.48% | Sag | 40.00' | 16.129 |
| 10 | 4+97.50' | 891.21' | 2.68% | 7.25% | 4.57% | Sag | 60.00' | 13.123 |
| 11 | 5+50.00' | 895.02' | 7.25% | 5.00% | 2.25% | Crest | 30.00' | 13.32 |
| 12 | 5+70.09' | 896.02' | 5.00% | 3.23% | 1.77% | | | |
| 13 | 5+79.08' | 896.31' | 3.23% | | | | | |

| PROPOSED PROFILE GRADE SOUTH ROAD #5 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 870.50' | | 0.38% | | | | |
| 2 | 1+23.70' | 870.97' | 0.38% | -1.59% | 1.97% | | | |
| 3 | 1+57.71' | 870.43' | -1.59% | 0.38% | 1.97% | | | |
| 4 | 1+65.67' | 870.46' | 0.38% | | | | | |

| PROPOSED PROFILE GRADE SOUTH ROAD #2 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 878.87' | | 2.00% | | | | |
| 2 | 0+11.00' | 879.09' | 2.00% | 5.83% | 3.83% | | | |
| 3 | 0+41.00' | 880.84' | 5.83% | 6.36% | 0.52% | | | |
| 4 | 0+75.00' | 883.00' | 6.36% | 3.32% | 3.04% | Crest | 40.00' | 13.166 |
| 5 | 1+50.00' | 885.49' | 3.32% | 1.00% | 2.32% | Crest | 50.00' | 21.552 |
| 6 | 2+00.00' | 885.99' | 1.00% | -0.37% | 1.37% | Crest | 40.00' | 29.158 |
| 7 | 2+65.03' | 885.75' | -0.37% | -3.57% | 3.20% | | | |
| 8 | 2+76.50' | 885.34' | -3.57% | -3.58% | 0.00% | | | |
| 9 | 2+87.96' | 884.93' | -3.58% | -0.60% | 2.98% | | | |
| 10 | 4+75.00' | 883.81' | -0.60% | 4.75% | 5.35% | Sag | 80.00' | 14.964 |
| 11 | 5+33.83' | 886.60' | 4.75% | 2.43% | 2.31% | | | |
| 12 | 5+42.06' | 886.80' | 2.43% | | | | | |

| PROPOSED PROFILE GRADE SOUTH ROAD #4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 876.06' | | 2.00% | | | | |
| 2 | 0+11.00' | 876.28' | 2.00% | 1.73% | 0.27% | | | |
| 3 | 0+75.00' | 877.39' | 1.73% | -0.67% | 2.40% | Crest | 50.00' | 20.824 |
| 4 | 1+50.00' | 876.89' | -0.67% | 0.00% | 0.67% | | | |
| 5 | 2+50.00' | 876.89' | 0.00% | -0.84% | 0.84% | | | |
| 6 | 3+09.35' | 876.39' | -0.84% | -0.53% | 0.31% | | | |
| 7 | 3+20.60' | 876.33' | -0.53% | -0.80% | 0.26% | | | |
| 8 | 3+31.88' | 876.24' | -0.80% | -1.42% | 0.62% | | | |
| 9 | 4+25.00' | 874.92' | -1.42% | 2.54% | 3.96% | Sag | 60.00' | 15.136 |
| 10 | 4+80.24' | 876.32' | 2.54% | -1.00% | 3.54% | Crest | 50.00' | 14.113 |
| 11 | 5+09.34' | 876.03' | -1.00% | -0.79% | 0.21% | | | |
| 12 | 5+16.96' | 875.97' | -0.79% | | | | | |

| PROPOSED PROFILE GRADE SOUTH ROAD #6 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 867.00' | | -1.00% | | | | |
| 2 | 1+00.00' | 866.00' | -1.00% | 0.80% | 1.80% | Sag | 30.00' | 16.667 |
| 3 | 3+91.69' | 868.33' | 0.80% | 6.49% | 5.69% | Sag | 65.00' | 11.422 |
| 4 | 5+50.00' | 878.61' | 6.49% | 4.88% | 1.61% | Crest | 50.00' | 31.095 |
| 5 | 6+25.00' | 882.27' | 4.88% | 11.31% | 6.43% | Sag | 100.00' | 15.547 |
| 6 | 7+60.00' | 897.55' | 11.31% | 3.67% | 7.65% | Crest | 60.00' | 7.846 |
| 7 | 7+90.09' | 898.65' | 3.67% | 1.99% | 1.67% | | | |
| 8 | 8+01.63' | 898.88' | 1.99% | | | | | |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

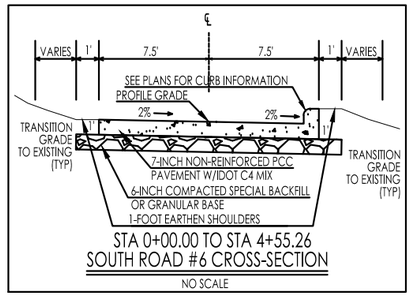
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

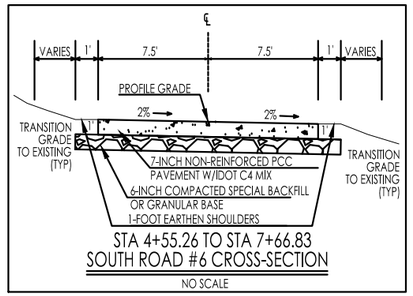
PAVING PLAN SOUTH ROAD #5

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 97

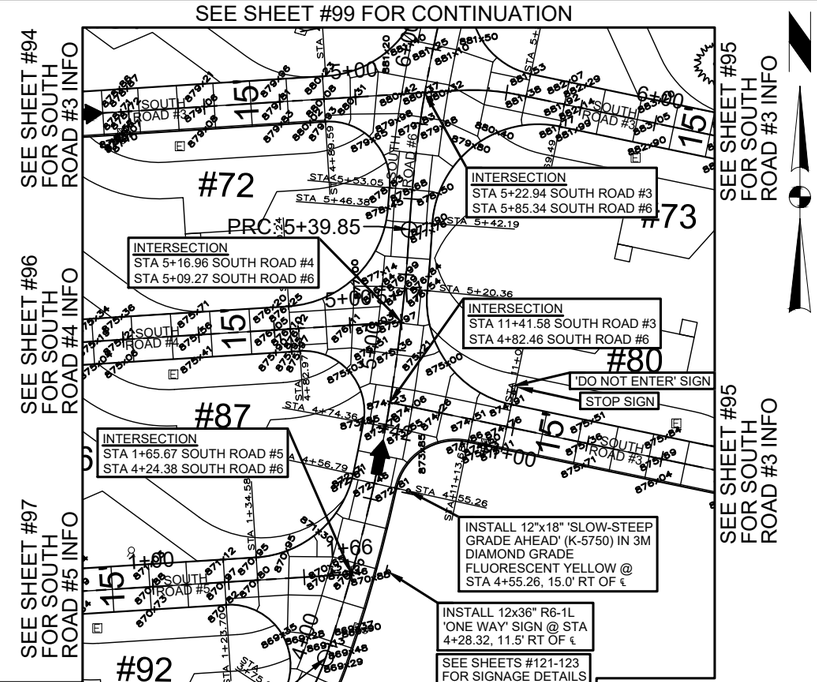



## LEGEND

EXISTING/PROPOSED

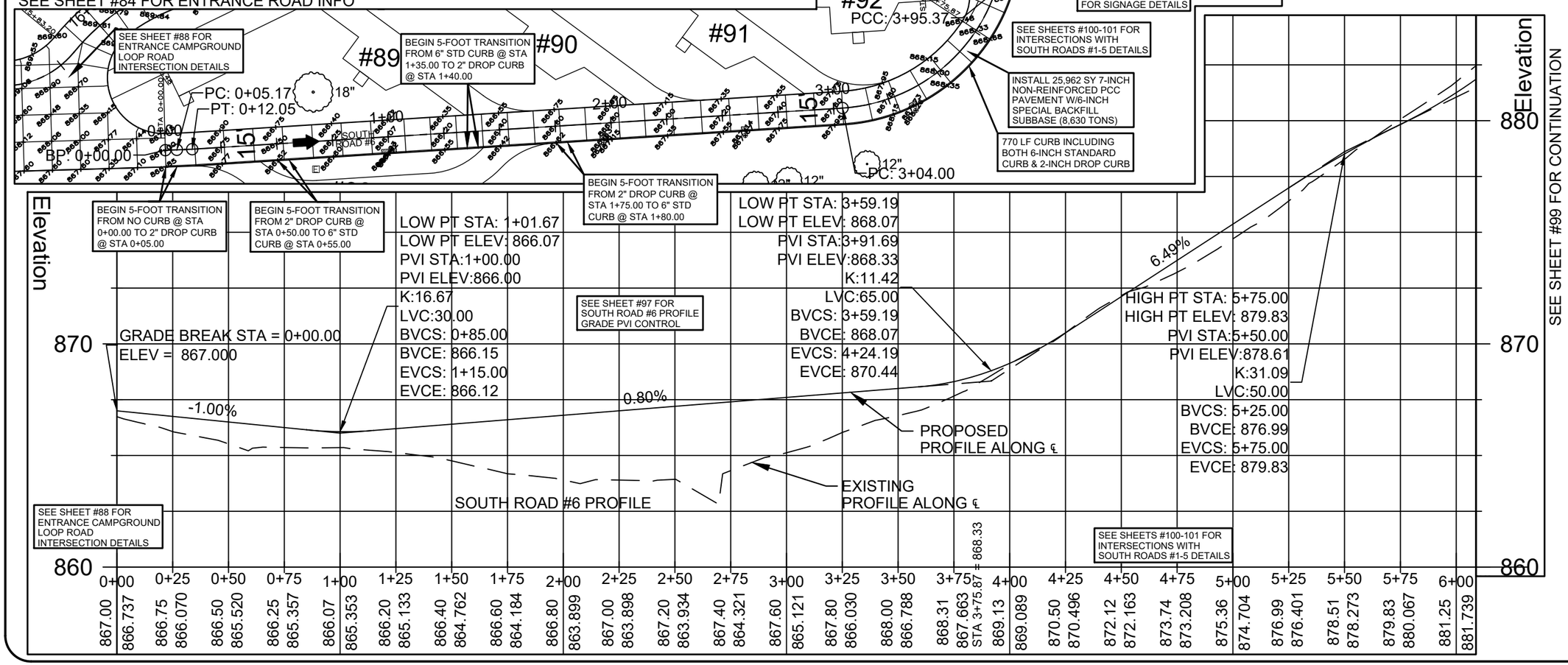
- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE




0 FEET 50

SEE SHEET #84 FOR ENTRANCE ROAD INFO




CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

PAVING PLAN SOUTH ROAD #6

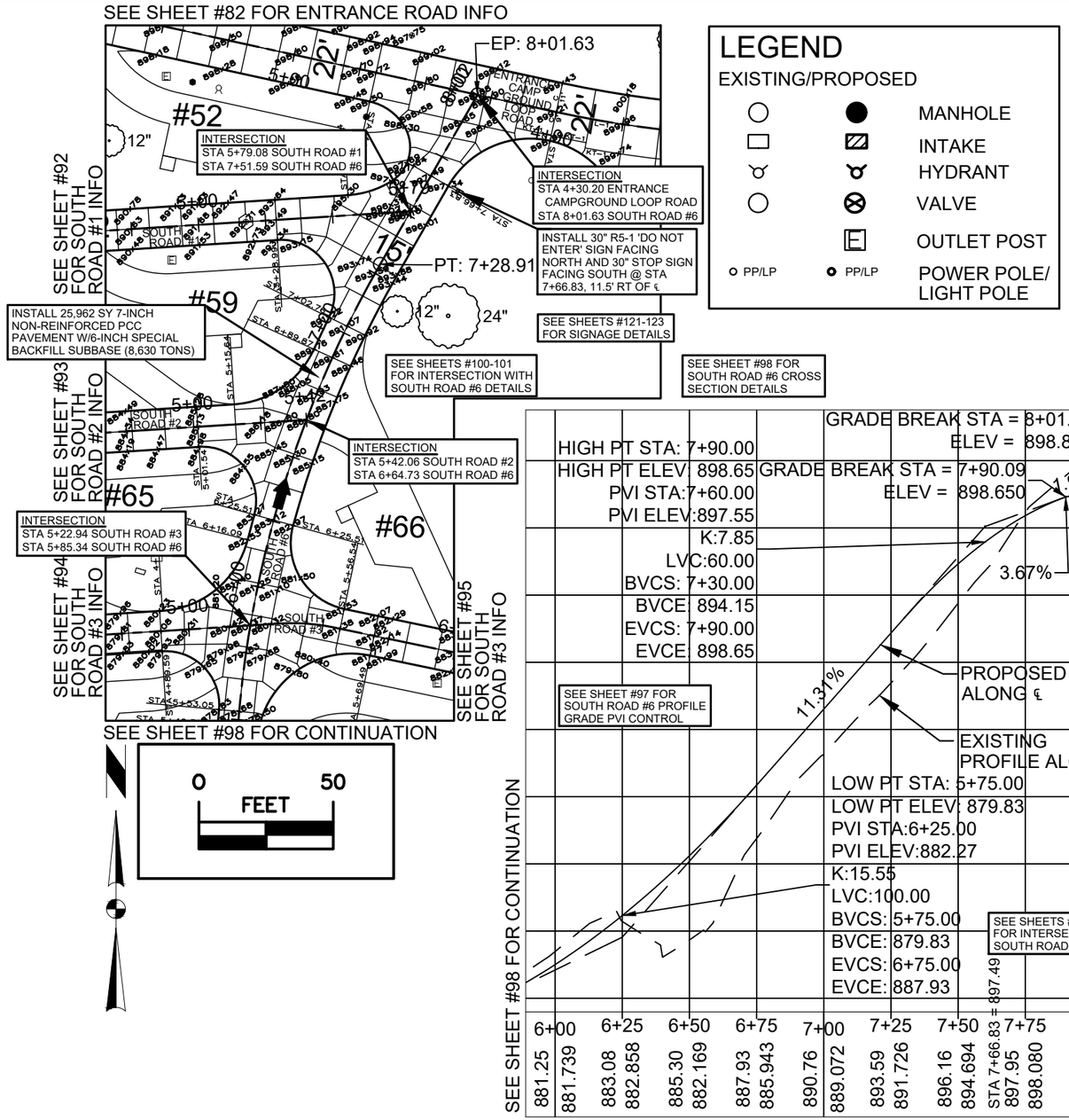
CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY DATE | REVISION |
|---|---|---|

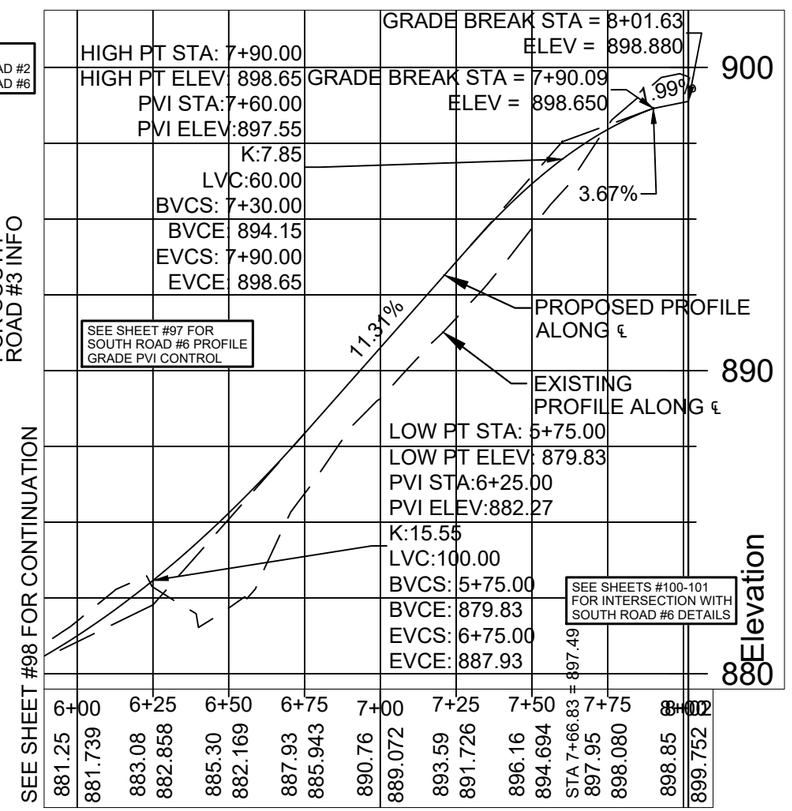
DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 98




## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE




| SOUTH CAMPGROUND ROAD #6 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 5.17' | | N88° 21' 15"E | 0+00.00' | 0+05.17' | | | | (1614554.8977',471648.2423',867.00') | (1614560.0638',471648.3907',866.95') | |
| 2 | Curve | 6.88' | 200.00' | | 0+05.17' | 0+12.05' | 1.9721 (d) | 6.88' | N87° 22' 05"E | (1614560.0638',471648.3907',866.95') | (1614566.9401',471648.7068',866.88') | (1614554.3191',471848.3082') |
| 3 | Line | 291.95' | | N86° 22' 55"E | 0+12.05' | 3+04.00' | | | | (1614566.9401',471648.7068',866.88') | (1614858.3073',471667.1302',867.63') | |
| 4 | Curve | 91.37' | 77.50' | | 3+04.00' | 3+95.37' | 67.5479 (d) | 86.17' | N52° 36' 29"E | (1614858.3073',471667.1302',867.63') | (1614926.7671',471719.4566',868.94') | (1614853.4166',471744.4757') |
| 5 | Curve | 144.48' | 532.50' | | 3+95.37' | 5+39.85' | 15.5461 (d) | 144.04' | N11° 03' 40"E | (1614926.7671',471719.4566',868.94') | (1614954.4018',471860.8213',877.91') | (1614422.7784',471891.3624') |
| 6 | Curve | 189.06' | 407.50' | | 5+39.85' | 7+28.91' | 26.5819 (d) | 187.37' | N16° 34' 44"E | (1614954.4018',471860.8213',877.91') | (1615007.8638',472040.3972',894.03') | (1615361.2310',471837.4494') |
| 7 | Line | 72.72' | | N29° 52' 11"E | 7+28.91' | 8+01.63' | | | | (1615007.8638',472040.3972',894.03') | (1615044.0804',472103.4567',898.88') | |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

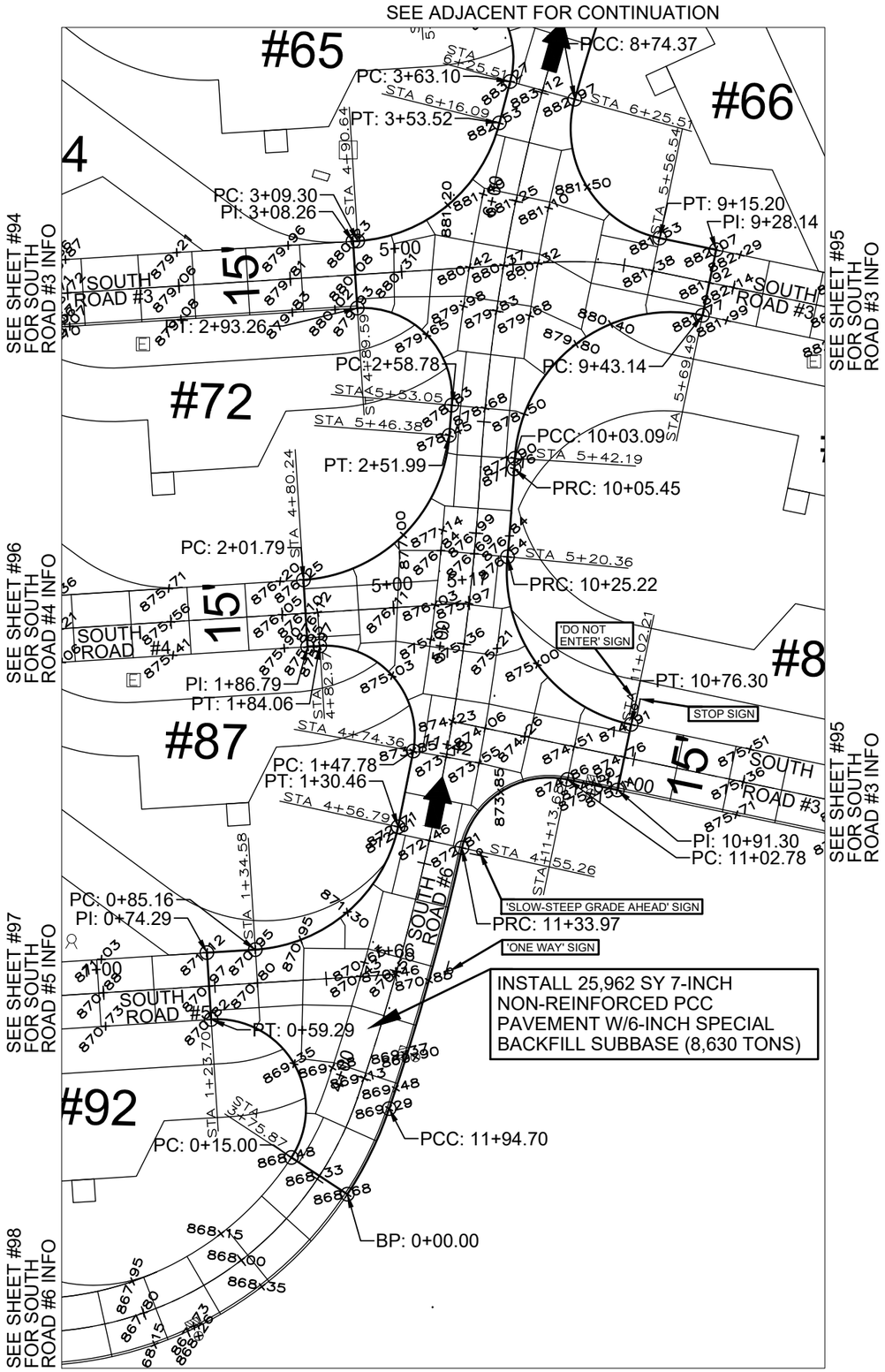
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

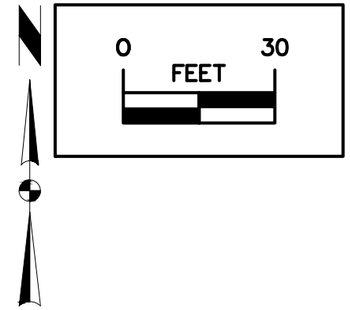
PAVING PLAN SOUTH ROAD #6

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 99

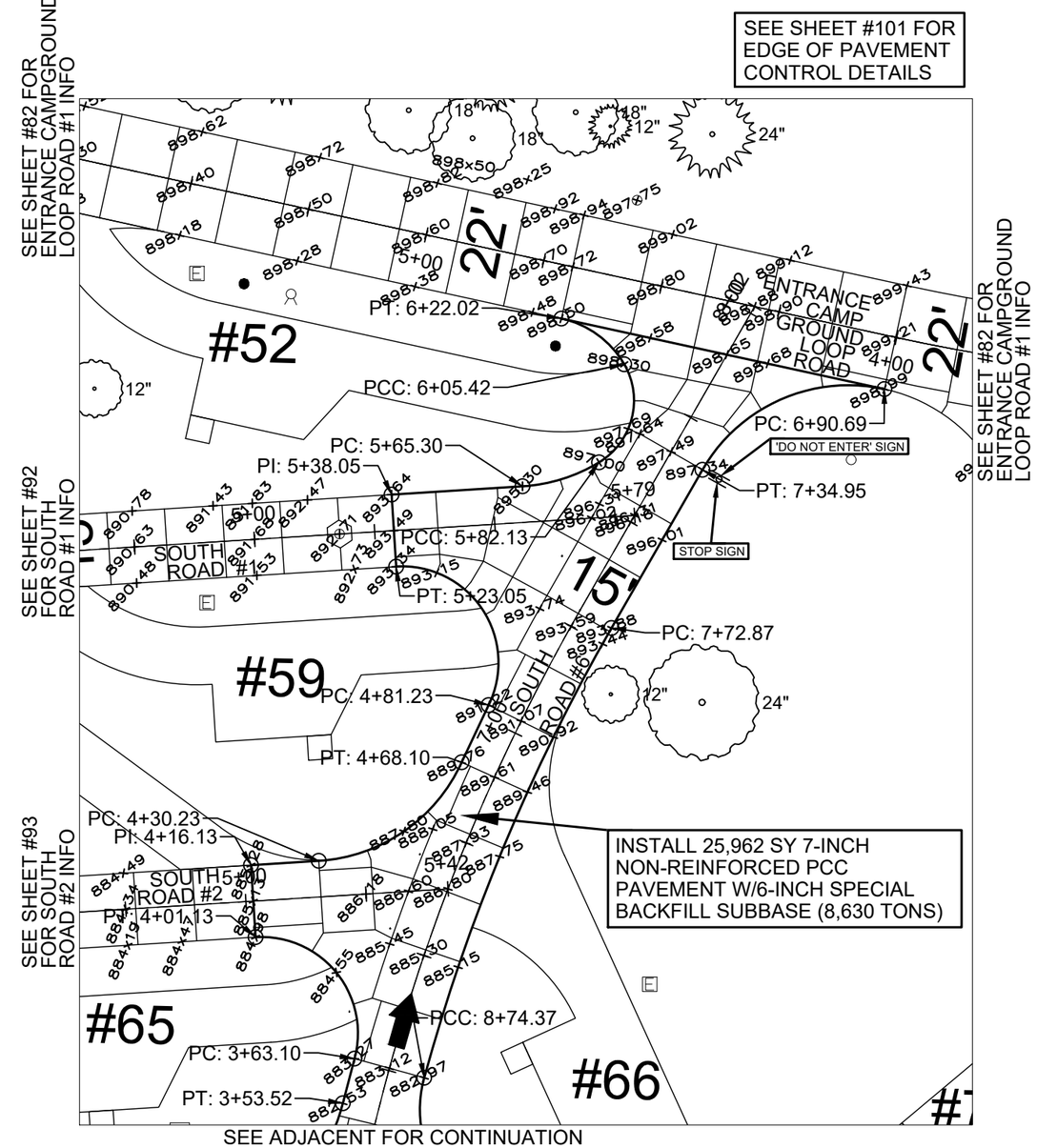



## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — POWER POLE/ LIGHT POLE




CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

S. ROAD #6 PVMT EDGE I-SECTIONS

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY: DATE | REVISION |
|---|---|---|

DRAWN BY:
CHK'D BY:
PROJECT NUMBER: 22-05-91-01
DATE: 12/29/2021
SHEET No: 100

| OUTSIDE EDGE OF SOUTH ROAD #6 PAVEMENT INTERSECTIONS WITH SOUTH ROADS #1-5 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 15.00' | | N56° 44' 53"W | 0+00.00' | 0+15.00' | | | | (1614924.4994',471697.8685',868.68') | (1614911.9554',471706.0933',868.48') | |
| 2 | Curve | 44.29' | 20.00' | | 0+15.00' | 0+59.29' | 126.8699 (d) | 35.78' | N30° 10' 59"W | (1614911.9554',471706.0933',868.48') | (1614893.9680',471737.0199',870.82') | (1614895.2301',471717.0597') |
| 3 | Line | 15.00' | | N3° 37' 05"W | 0+59.29' | 0+74.29' | | | | (1614893.9680',471737.0199',870.82') | (1614893.0214',471751.9900',871.12') | |
| 4 | Line | 10.88' | | N86° 22' 55"E | 0+74.29' | 0+85.16' | | | | (1614893.0214',471751.9900',871.12') | (1614903.8761',471752.6763',870.95') | |
| 5 | Curve | 45.30' | 35.00' | | 0+85.16' | 1+30.46' | 74.1572 (d) | 42.20' | N49° 18' 12"E | (1614903.8761',471752.6763',870.95') | (1614935.8738',471780.1954',872.71') | (1614901.6674',471787.6066') |
| 6 | Line | 17.31' | | N11° 16' 48"E | 1+30.46' | 1+47.78' | | | | (1614935.8738',471780.1954',872.71') | (1614939.2605',471797.1754',873.85') | |
| 7 | Curve | 36.29' | 20.00' | | 1+47.78' | 1+84.06' | 103.9531 (d) | 31.51' | N41° 38' 29"W | (1614939.2605',471797.1754',873.85') | (1614918.3229',471820.7236',875.97') | (1614919.5850',471800.7635') |
| 8 | Line | 2.73' | | S86° 22' 55"W | 1+84.06' | 1+86.79' | | | | (1614918.3229',471820.7236',875.97') | (1614915.5981',471820.5513',875.95') | |
| 9 | Line | 15.00' | | N3° 37' 05"W | 1+86.79' | 2+01.79' | | | | (1614915.5981',471820.5513',875.95') | (1614914.6515',471835.5214',876.25') | |
| 10 | Curve | 50.20' | 35.00' | | 2+01.79' | 2+51.99' | 82.1762 (d) | 46.01' | N45° 17' 38"E | (1614914.6515',471835.5214',876.25') | (1614947.3486',471867.8848',878.45') | (1614912.4428',471870.4516') |
| 11 | Line | 6.79' | | N4° 40' 28"E | 2+51.99' | 2+58.78' | | | | (1614947.3486',471867.8848',878.45') | (1614947.9019',471874.6513',878.83') | |
| 12 | Curve | 34.47' | 20.00' | | 2+58.78' | 2+93.26' | 98.7611 (d) | 30.36' | N44° 14' 15"W | (1614947.9019',471874.6513',878.83') | (1614926.7203',471896.4043',879.93') | (1614927.9824',471876.4442') |
| 13 | Line | 15.00' | | N3° 37' 05"W | 2+93.26' | 3+08.26' | | | | (1614926.7203',471896.4043',879.93') | (1614925.7737',471911.3745',880.23') | |
| 14 | Line | 1.05' | | N86° 22' 55"E | 3+08.26' | 3+09.30' | | | | (1614925.7737',471911.3745',880.23') | (1614926.8208',471911.4407',880.25') | |
| 15 | Curve | 44.21' | 35.00' | | 3+09.30' | 3+53.52' | 72.3745 (d) | 41.33' | N50° 11' 41"E | (1614926.8208',471911.4407',880.25') | (1614958.5713',471937.8992',882.53') | (1614924.6121',471946.3709') |
| 16 | Line | 9.59' | | N14° 40' 09"E | 3+53.52' | 3+63.10' | | | | (1614958.5713',471937.8992',882.53') | (1614960.9993',471947.1741',883.27') | |
| 17 | Curve | 38.03' | 20.00' | | 3+63.10' | 4+01.13' | 108.9492 (d) | 32.55' | N39° 08' 36"W | (1614960.9993',471947.1741',883.27') | (1614940.4489',471972.4222',884.98') | (1614941.7110',471952.4621') |
| 18 | Line | 15.00' | | N3° 37' 05"W | 4+01.13' | 4+16.13' | | | | (1614940.4489',471972.4222',884.98') | (1614939.5023',471987.3923',885.28') | |
| 19 | Line | 14.10' | | N86° 22' 55"E | 4+16.13' | 4+30.23' | | | | (1614939.5023',471987.3923',885.28') | (1614953.5712',471988.2819',885.90') | |
| 20 | Curve | 37.87' | 35.00' | | 4+30.23' | 4+68.10' | 62.0007 (d) | 36.05' | N55° 22' 54"E | (1614953.5712',471988.2819',885.90') | (1614983.2412',472008.7639',889.76') | (1614951.3625',472023.2121') |
| 21 | Line | 13.12' | | N25° 17' 14"E | 4+68.10' | 4+81.23' | | | | (1614983.2412',472008.7639',889.76') | (1614988.8468',472020.6296',891.22') | |
| 22 | Curve | 41.82' | 20.00' | | 4+81.23' | 5+23.05' | 119.8112 (d) | 34.61' | N33° 42' 45"W | (1614988.8468',472020.6296',891.22') | (1614969.6385',472049.4177',893.34') | (1614970.9006',472029.4575') |
| 23 | Line | 15.00' | | N3° 37' 05"W | 5+23.05' | 5+38.05' | | | | (1614969.6385',472049.4177',893.34') | (1614968.6919',472064.3878',893.64') | |
| 24 | Line | 27.25' | | N86° 22' 55"E | 5+38.05' | 5+65.30' | | | | (1614968.6919',472064.3878',893.64') | (1614995.8892',472066.1075',895.30') | |
| 25 | Curve | 16.83' | 35.00' | | 5+65.30' | 5+82.13' | 27.5546 (d) | 16.67' | N72° 36' 17"E | (1614995.8892',472066.1075',895.30') | (1615011.7972',472071.0913',897.00') | (1614993.6805',472101.0377') |
| 26 | Curve | 23.29' | 15.00' | | 5+82.13' | 6+05.42' | 88.9631 (d) | 21.02' | N14° 20' 45"E | (1615011.7972',472071.0913',897.00') | (1615017.0055',472091.4562',898.30') | (1615004.0329',472083.9255') |
| 27 | Curve | 16.60' | 20.00' | | 6+05.42' | 6+22.02' | 47.5465 (d) | 16.12' | N53° 54' 32"W | (1615017.0055',472091.4562',898.30') | (1615003.9753',472100.9548',898.50') | (1614999.7087',472081.4152') |
| 28 | Line | 68.67' | | S77° 40' 56"E | 6+22.02' | 6+90.69' | | | | (1615003.9753',472100.9548',898.50') | (1615071.0681',472086.3045',898.99') | |
| 29 | Curve | 44.26' | 35.00' | | 6+90.69' | 7+34.95' | 72.4479 (d) | 41.37' | S66° 05' 38"W | (1615071.0681',472086.3045',898.99') | (1615033.2509',472069.5413',897.34') | (1615063.6015',472052.1102') |
| 30 | Line | 37.92' | | S29° 52' 11"W | 7+34.95' | 7+72.87' | | | | (1615033.2509',472069.5413',897.34') | (1615014.3674',472036.6620',893.88') | |
| 31 | Curve | 101.50' | 400.00' | | 7+72.87' | 8+74.37' | 14.5392 (d) | 101.23' | S22° 36' 01"W | (1615014.3674',472036.6620',893.88') | (1614975.4646',471943.2050',882.97') | (1615361.2310',471837.4494') |
| 32 | Curve | 40.83' | 25.00' | | 8+74.37' | 9+15.20' | 93.5696 (d) | 36.44' | S31° 27' 15"E | (1614975.4646',471943.2050',882.97') | (1614994.4792',471912.1201',881.53') | (1614999.5750',471936.5953') |
| 33 | Line | 12.95' | | S78° 14' 20"E | 9+15.20' | 9+28.14' | | | | (1614994.4792',471912.1201',881.53') | (1615007.1531',471909.4814',882.07') | |
| 34 | Line | 15.00' | | S11° 45' 40"W | 9+28.14' | 9+43.14' | | | | (1615007.1531',471909.4814',882.07') | (1615004.0956',471894.7963',881.77') | |
| 35 | Curve | 59.95' | 35.00' | | 9+43.14' | 10+03.09' | 98.1353 (d) | 52.88' | S52° 41' 36"W | (1615004.0956',471894.7963',881.77') | (1614962.0316',471862.7444',877.90') | (1614996.9616',471860.5311') |
| 36 | Curve | 2.36' | 400.01' | | 10+03.09' | 10+05.45' | 0.3377 (d) | 2.36' | S3° 27' 25"W | (1614962.0316',471862.7444',877.90') | (1614961.8895',471860.3911',877.76') | (1615361.2431',471837.4487') |
| 37 | Curve | 19.77' | 540.00' | | 10+05.45' | 10+25.22' | 2.0974 (d) | 19.77' | S4° 20' 12"W | (1614961.8895',471860.3911',877.76') | (1614960.3948',471840.6811',876.54') | (1614422.7784',471891.3624') |
| 38 | Curve | 51.08' | 35.00' | | 10+25.22' | 10+76.30' | 83.6244 (d) | 46.67' | S36° 25' 37"E | (1614960.3948',471840.6811',876.54') | (1614988.1063',471803.1310',874.91') | (1614995.2403',471837.3962') |
| 39 | Line | 15.00' | | S11° 45' 40"W | 10+76.30' | 10+91.30' | | | | (1614988.1063',471803.1310',874.91') | (1614985.0488',471788.4459',875.11') | |
| 40 | Line | 11.48' | | N78° 14' 20"W | 10+91.30' | 11+02.78' | | | | (1614985.0488',471788.4459',875.11') | (1614973.8123',471790.7854',874.86') | |
| 41 | Curve | 31.20' | 20.00' | | 11+02.78' | 11+33.97' | 89.3709 (d) | 28.13' | S57° 04' 32"W | (1614973.8123',471790.7854',874.86') | (1614950.2015',471775.4966',872.81') | (1614969.7357',471771.2053') |
| 42 | Curve | 60.73' | 540.00' | | 11+33.97' | 11+94.70' | 6.4439 (d) | 60.70' | S15° 36' 43"W | (1614950.2015',471775.4966',872.81') | (1614933.8655',471717.0354',869.29') | (1614422.7784',471891.3624') |
| 43 | Curve | 21.39' | 85.00' | | 11+94.70' | 12+16.09' | 14.4178 (d) | 21.33' | S26° 02' 35"W | (1614933.8655',471717.0354',869.29') | (1614924.4994',471697.8685',868.68') | (1614853.4166',471744.4757') |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

S. ROAD #6 PVMT EDGE I-SECTIONS

CONSTRUCTION PROJECT FOR:

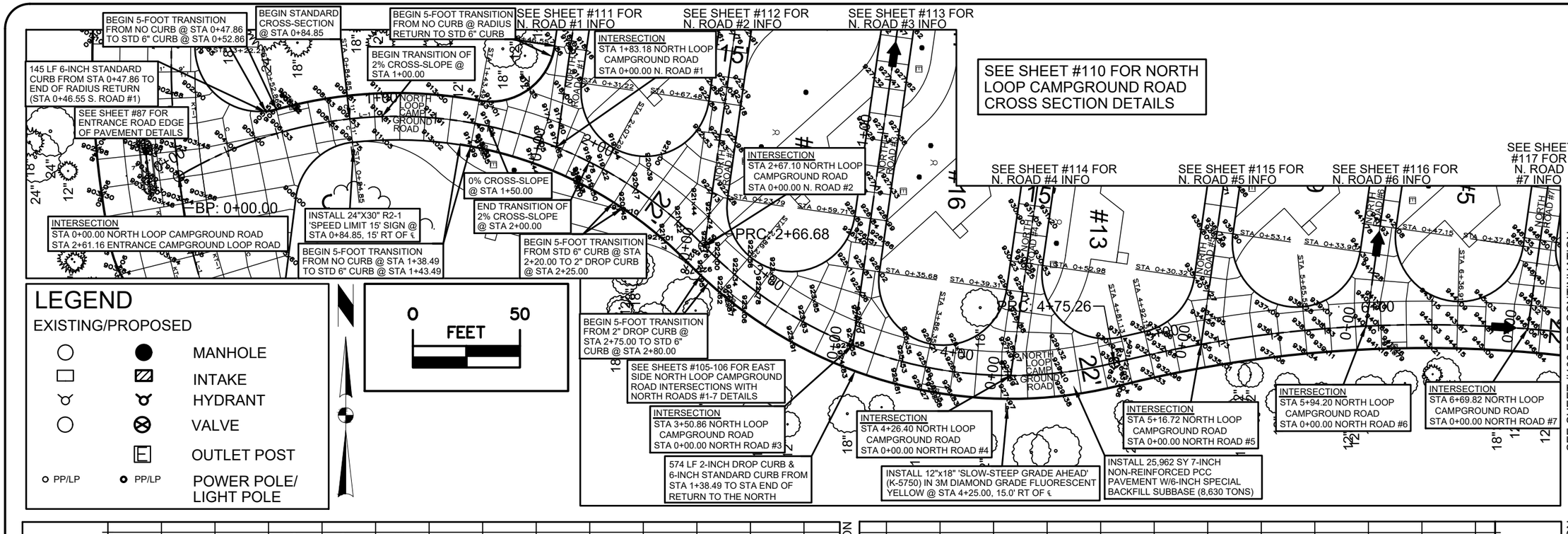
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

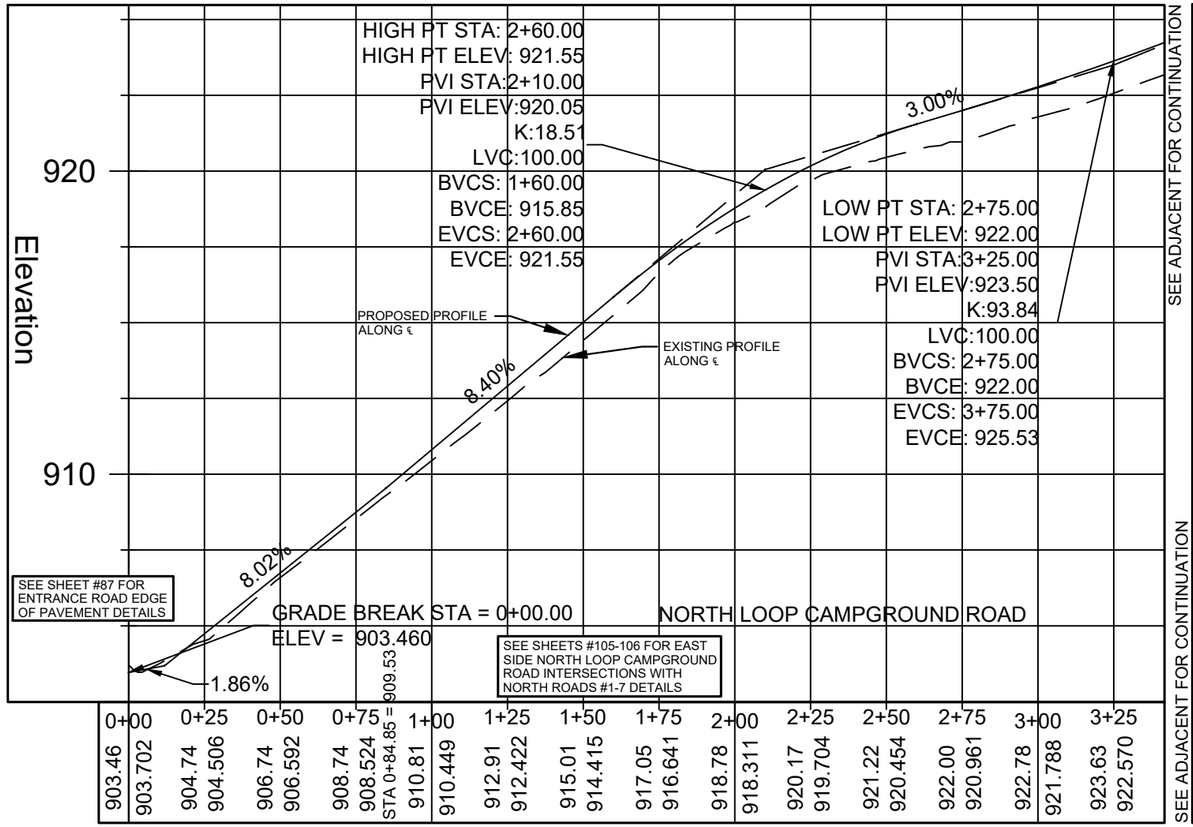
WARREN COUNTY, IOWA

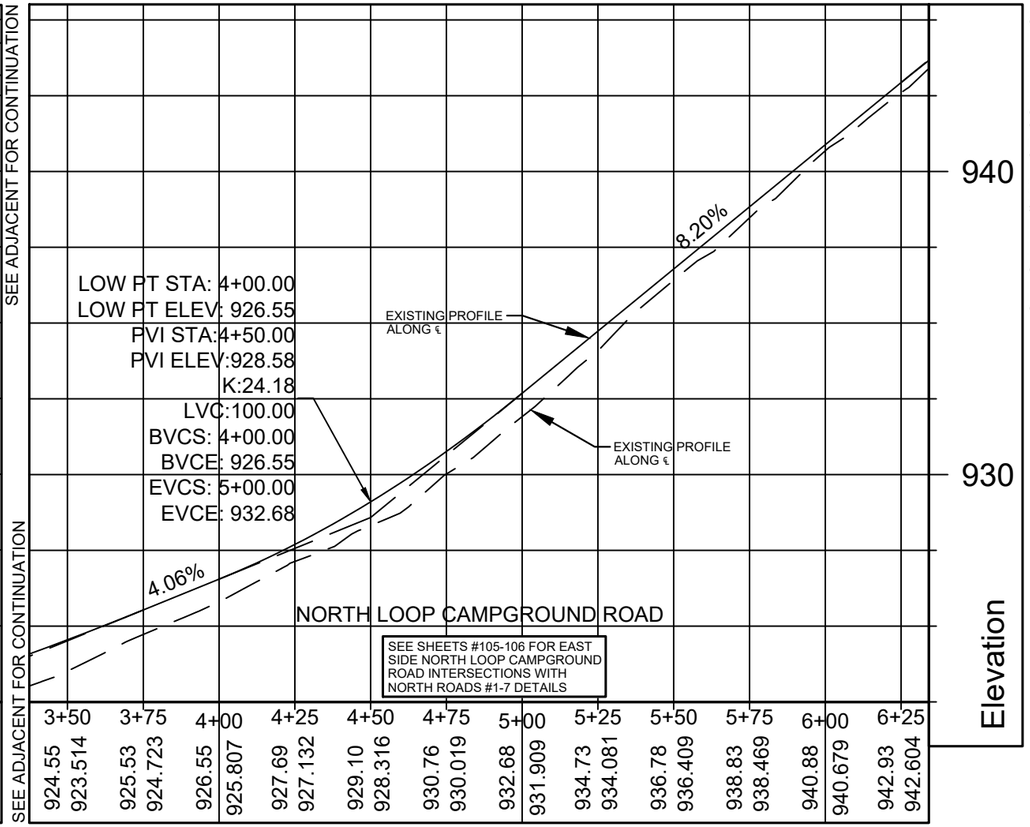
| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021

SHEET No: 101




SEE SHEET #103 FOR CONTINUATION

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

PAVING PLAN NORTH LOOP ROAD

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY DATE | REVISION |
|---|---|---|

DRAWN BY: PROJECT NUMBER: 22-05-91-01
CHK'D BY: DATE: 12/29/2021
SHEET No: 102

## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE

0 — 50 FEET

SEE SHEET #104 FOR CONTINUATION

SEE SHEET #115 FOR N. ROAD #5 INFO

SEE SHEET #116 FOR N. ROAD #6 INFO

SEE SHEET #102 FOR CONTINUATION

SEE SHEET #117 FOR NORTH ROAD #7 INFORMATION

SEE SHEET #110 FOR NORTH LOOP CAMPGROUND ROAD CROSS SECTION DETAILS

SEE SHEETS #107-108 FOR WEST SIDE NORTH LOOP CAMPGROUND ROAD INTERSECTIONS WITH NORTH ROADS #2-7 DETAILS

INTERSECTION
STA 12+68.53 NORTH LOOP CAMPGROUND ROAD
STA 3+83.66 NORTH ROAD #5

'DO NOT ENTER' SIGN

STOP SIGN

INSTALL 12x36" R6-1L 'ONE WAY' SIGN @ STA 12+68.53, 11.5' RT OF ℄

INTERSECTION
STA 11+93.49 NORTH LOOP CAMPGROUND ROAD
STA 3+66.77 NORTH ROAD #6

PT: 11+28.54

'DO NOT ENTER' SIGN

STOP SIGN

INSTALL 12x36" R6-1L 'ONE WAY' SIGN @ STA 11+93.49, 11.5' RT OF ℄

INSTALL 12"x18" 'SLOW-STEEP GRADE AHEAD' (K-5750) IN 3M DIAMOND GRADE FLUORESCENT YELLOW @ STA 11+50.00, 11.5' RT OF ℄

INSTALL 12x36" R6-1L 'ONE WAY' SIGN @ STA 11+19.37, 11.5' RT OF ℄

INTERSECTION
STA 11+18.45 NORTH LOOP CAMPGROUND ROAD
STA 3+59.19 NORTH ROAD #7

849 LF 6-INCH STANDARD CURB & 2" DROP CURB ALONG WEST SIDE OF NORTH LOOP ROAD

574 LF 2-INCH DROP CURB & 6-INCH STANDARD CURB FROM STA 1+38.49 TO STA END OF RETURN TO THE NORTH

INTERSECTION
STA 6+69.82 NORTH LOOP CAMPGROUND ROAD
STA 0+00.00 NORTH ROAD #7

PRC: 6+88.99

BEGIN 5-FOOT TRANSITION FROM NO CURB @ RADIUS RETURN TO STD 6" CURB

INSTALL 25,962 SY 7-INCH NON-REINFORCED PCC PAVEMENT W/6-INCH SPECIAL BACKFILL SUBBASE (8,630 TONS)

SEE SHEETS #105-106 FOR EAST SIDE NORTH LOOP CAMPGROUND ROAD INTERSECTIONS WITH NORTH ROADS #1-7 DETAILS

BEGIN TRANSITION OF 2% CROSS-SLOPE @ STA 6+75.00

END TRANSITION OF 2% CROSS-SLOPE @ STA 7+75.00

0% CROSS-SLOPE @ STA 7+25.00

PT: 7+77.66

BEGIN STANDARD CROSS-SECTION @ STA 7+81.17

BEGIN TRANSITION OF 2% CROSS-SLOPE @ STA 9+50.00

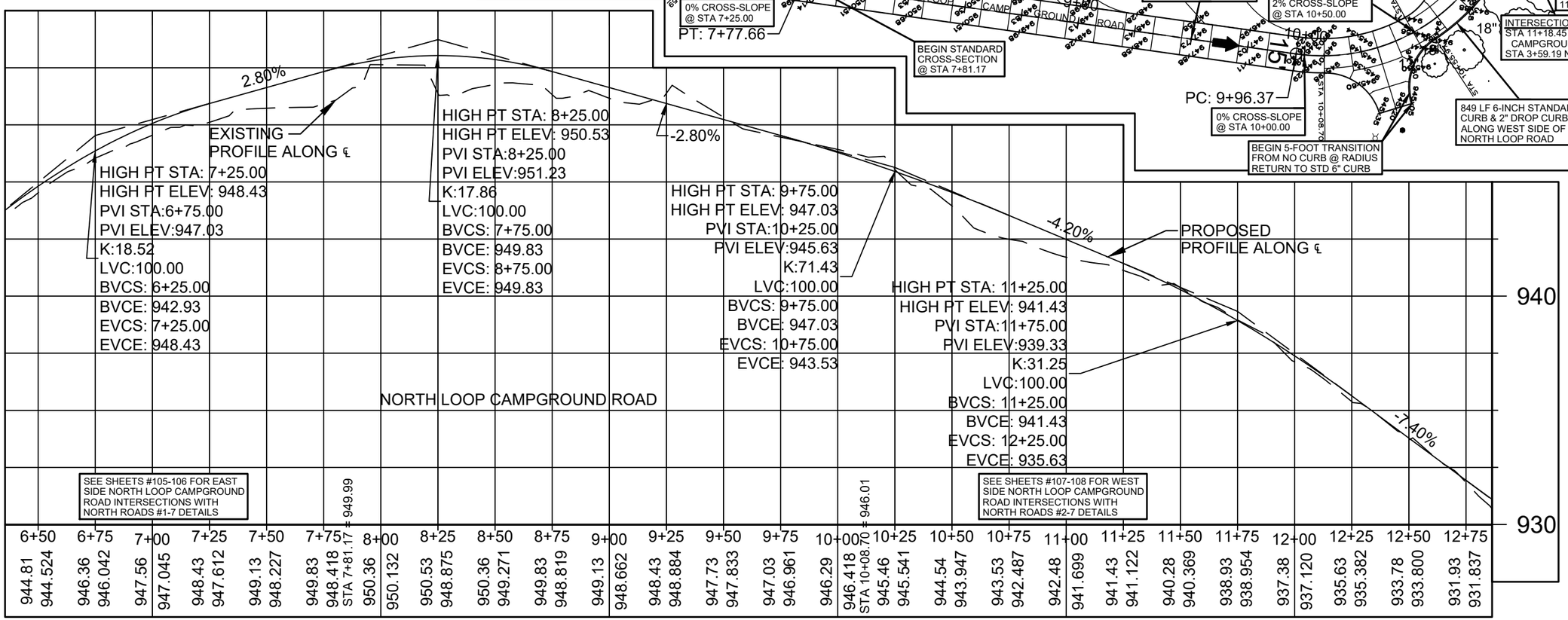
END TRANSITION OF 2% CROSS-SLOPE @ STA 10+50.00

PC: 9+96.37

0% CROSS-SLOPE @ STA 10+00.00

BEGIN 5-FOOT TRANSITION FROM NO CURB @ RADIUS RETURN TO STD 6" CURB

#1 #2 #3 #4 #5 #6 #7




CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PAVING PLAN NORTH LOOP ROAD

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
CHK'D BY:
PROJECT NUMBER: 22-05-91-01
DATE: 12/29/2021
SHEET No: 103

SEE SHEET #110 FOR NORTH LOOP CAMPGROUND ROAD CROSS SECTION DETAILS

SEE SHEET #114 FOR N. ROAD #4 INFO

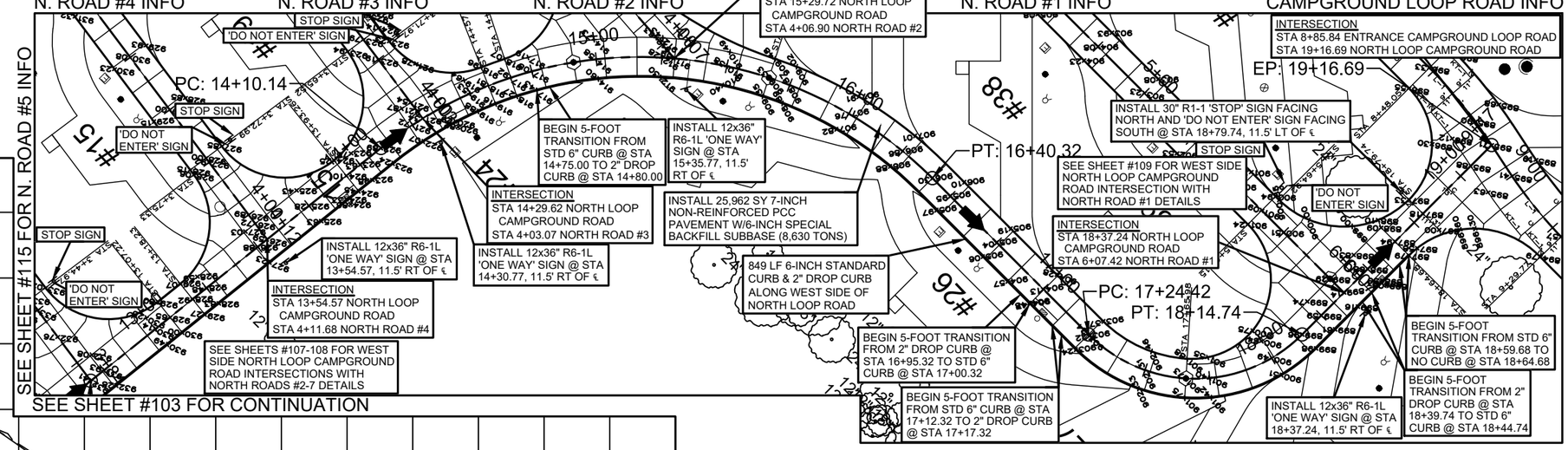
SEE SHEET #113 FOR N. ROAD #3 INFO

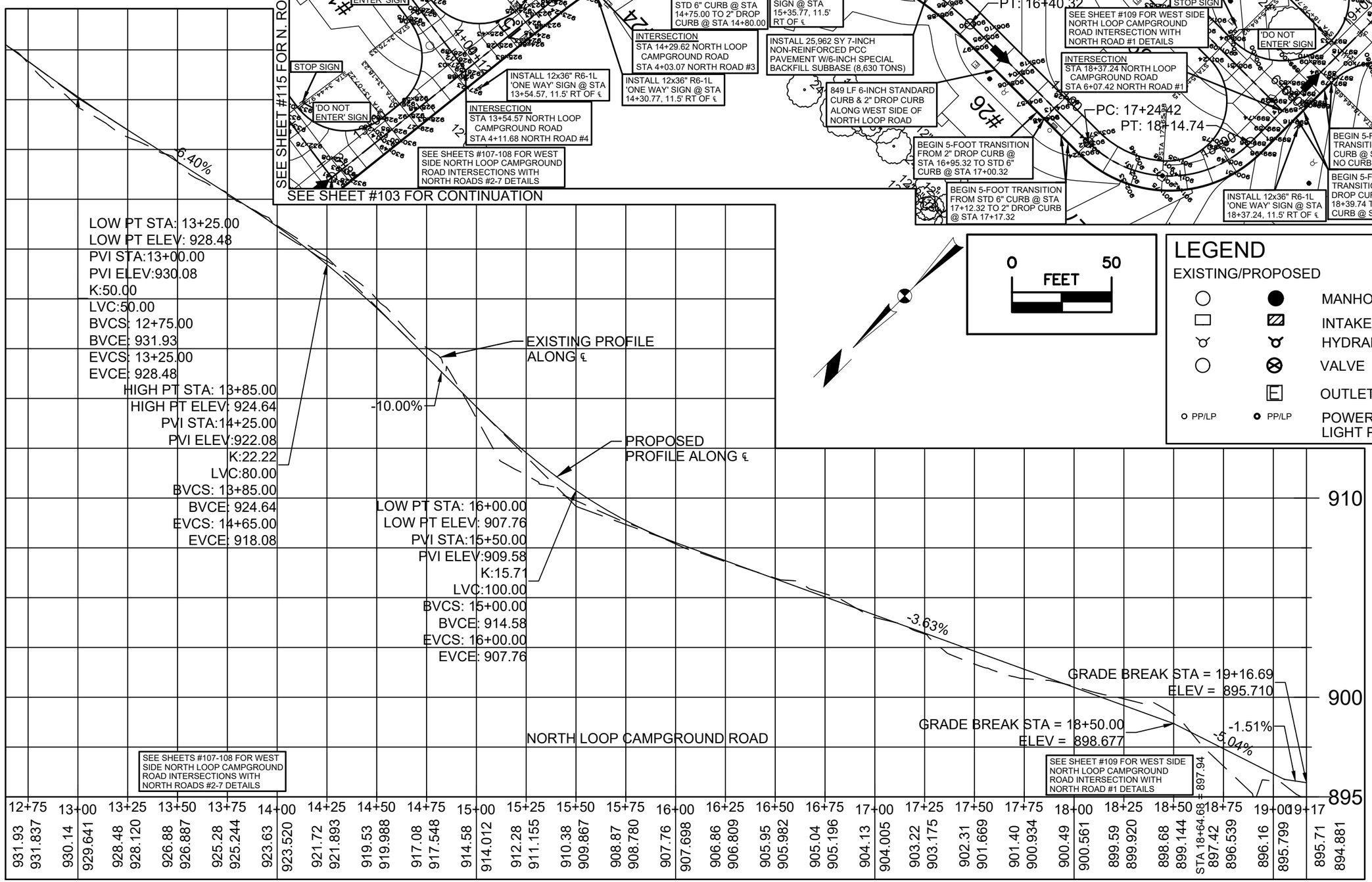
SEE SHEET #112 FOR N. ROAD #2 INFO

SEE SHEET #111 FOR N. ROAD #1 INFO

SEE SHEET #83 FOR ENTRANCE CAMPGROUND LOOP ROAD INFO

SEE SHEET #115 FOR N. ROAD #5 INFO




0 FEET 50

## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP PP/LP POWER POLE/ LIGHT POLE

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PAVING PLAN NORTH LOOP ROAD

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY DATE | REVISION |
|---|---|---|

DRAWN BY: PROJECT NUMBER: 22-05-91-01

CHK'D BY: DATE: 12/29/2021

SHEET No: 104

SEE ADJACENT FOR CONTINUATION

SEE SHEET #114 FOR NORTH ROAD #4 INFO

SEE SHEET #113 FOR NORTH ROAD #3 INFO

SEE SHEET #112 FOR NORTH ROAD #2 INFO

SEE SHEET #111 FOR NORTH ROAD #1 INFO

SEE SHEET #103 FOR NORTH LOOP CAMPGROUND ROAD INFORMATION

SEE SHEET #117 FOR NORTH ROAD #7 INFO

SEE SHEET #116 FOR NORTH ROAD #6 INFO

SEE SHEET #115 FOR NORTH ROAD #5 INFO

#13 22'

PC: 5+09.84

NORTH ROAD #4

15'

PI: 4+94.84

PT: 4+81.17

'SLOW-STEEP GRADE AHEAD' SIGN

#17

#16

PC: 3+86.92

PI: 3+62.90

NORTH ROAD #3

PT: 3+47.90

21

#20

PI: 2+09.97

PC: 2+53.65

NORTH ROAD #2

15'

PT: 1+94.97

#32

22'

PRC: 15+96.05

PC: 1+00.72

PI: 0+85.39

NORTH ROAD #1

#31

PT: 0+70.39

PC: 0+22.00

EP: 17+12.47

EP: 0+00.00

NORTH LOOP CAMP GROUND ROAD

PI: 10+06.14

PC: 10+13.15

PRC: 10+53.43

PT: 10+94.74

PT: 9+91.14

PI: 11+09.74

#1

PCC: 9+44.78

PC: 11+44.25

PC: 8+89.42

PRC: 11+62.85

NORTH ROAD #7

22'

PRC: 11+66.29

PI: 8+74.42

PT: 8+70.43

#5

PC: 7+76.18

NORTH ROAD #6

PI: 7+61.18

PT: 7+47.94

#9

PC: 6+53.69

NORTH ROAD #5

PI: 6+38.69

PT: 6+15.87

PC: 5+79.44

PT: 5+68.21

#13

22'

PRC: 13+76.01

INSTALL 25,962 SY 7-INCH NON-REINFORCED PCC PAVEMENT W/6-INCH SPECIAL BACKFILL SUBBASE (8,630 TONS)

574 LF 2-INCH DROP CURB & 6-INCH STANDARD CURB FROM STA 1+38.49 TO STA END OF RETURN TO THE NORTH

BEGIN 5-FOOT TRANSITION FROM 2" DROP CURB @ STA 2+75.00 TO STD 6" CURB @ STA 2+80.00

BEGIN 5-FOOT TRANSITION FROM STD 6" CURB @ STA 2+20.00 TO 2" DROP CURB @ STA 2+25.00

BEGIN 5-FOOT TRANSITION FROM NO CURB @ RADIUS RETURN TO STD 6" CURB

145 LF 6-INCH STANDARD CURB FROM STA 0+47.86 TO END OF RADIUS RETURN (STA 0+46.55 S. ROAD #1)

BEGIN 5-FOOT TRANSITION FROM NO CURB @ STA 1+38.49 TO STD 6" CURB @ STA 1+43.49

BEGIN 5-FOOT TRANSITION FROM NO CURB @ RADIUS RETURN TO STD 6" CURB

574 LF 2-INCH DROP CURB & 6-INCH STANDARD CURB FROM STA 1+38.49 TO STA END OF RETURN TO THE NORTH

SEE SHEET #106 FOR EDGE OF PAVEMENT CONTROL DETAILS

0 30
FEET

## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE

SEE SHEET #102 FOR N. LOOP ROAD INFO

SEE ADJACENT FOR CONTINUATION

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

PAVING N LOOP ROAD I-SECTIONS EAST

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

DATE: 12/29/2021

SHEET No: 105

| OUTSIDE EDGE OF NORTH LOOP ROAD PAVEMENT INTERSECTIONS WITH NORTH ROADS #1-7 EAST SIDE | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 22.00' | | N79° 31' 45"W | 0+00.00' | 0+22.00' | | | | (1615197.8491',472227.6767',914.99') | (1615176.2154',472231.6749',914.93') | |
| 2 | Curve | 48.39' | 30.00' | | 0+22.00' | 0+70.39' | 92.4139 (d) | 43.31' | N35° 44' 10"W | (1615176.2154',472231.6749',914.93') | (1615150.9196',472266.8307',917.86') | (1615146.7150',472237.1269') |
| 3 | Line | 15.00' | | N8° 03' 25"E | 0+70.39' | 0+85.39' | | | | (1615150.9196',472266.8307',917.86') | (1615153.0220',472281.6827',918.16') | |
| 4 | Line | 15.33' | | S81° 56' 35"E | 0+85.39' | 1+00.72' | | | | (1615153.0220',472281.6827',918.16') | (1615168.2008',472279.5341',918.15') | |
| 5 | Curve | 94.25' | 30.00' | | 1+00.72' | 1+94.97' | 180.0000 (d) | 60.00' | N8° 03' 25"E | (1615168.2008',472279.5341',918.15') | (1615176.6101',472338.9419',922.88') | (1615172.4054',472309.2380') |
| 6 | Line | 15.00' | | N8° 03' 25"E | 1+94.97' | 2+09.97' | | | | (1615176.6101',472338.9419',922.88') | (1615178.7124',472353.7938',923.18') | |
| 7 | Line | 43.68' | | S81° 56' 35"E | 2+09.97' | 2+53.65' | | | | (1615178.7124',472353.7938',923.18') | (1615221.9653',472347.6712',922.25') | |
| 8 | Curve | 94.25' | 30.00' | | 2+53.65' | 3+47.90' | 180.0000 (d) | 60.00' | N8° 03' 25"E | (1615221.9653',472347.6712',922.25') | (1615230.3746',472407.0790',926.69') | (1615226.1699',472377.3751') |
| 9 | Line | 15.00' | | N8° 03' 25"E | 3+47.90' | 3+62.90' | | | | (1615230.3746',472407.0790',926.69') | (1615232.4769',472421.9310',926.99') | |
| 10 | Line | 24.03' | | S81° 56' 35"E | 3+62.90' | 3+86.92' | | | | (1615232.4769',472421.9310',926.99') | (1615256.2650',472418.5637',926.02') | |
| 11 | Curve | 94.25' | 30.00' | | 3+86.92' | 4+81.17' | 180.0000 (d) | 60.00' | N8° 03' 25"E | (1615256.2650',472418.5637',926.02') | (1615264.6744',472477.9715',929.56') | (1615260.4697',472448.2676') |
| 12 | Line | 13.67' | | N81° 56' 35"W | 4+81.17' | 4+94.84' | | | | (1615264.6744',472477.9715',929.56') | (1615251.1418',472479.8870',930.23') | |
| 13 | Line | 15.00' | | N8° 03' 25"E | 4+94.84' | 5+09.84' | | | | (1615251.1418',472479.8870',930.23') | (1615253.2441',472494.7390',930.53') | |
| 14 | Curve | 58.37' | 30.00' | | 5+09.84' | 5+68.21' | 111.4853 (d) | 49.59' | N42° 18' 51"E | (1615253.2441',472494.7390',930.53') | (1615286.6286',472531.4098',931.43') | (1615257.4487',472524.4429') |
| 15 | Line | 11.23' | | N12° 54' 07"W | 5+68.21' | 5+79.44' | | | | (1615286.6286',472531.4098',931.43') | (1615284.1215',472542.3544',932.27') | |
| 16 | Curve | 36.43' | 30.00' | | 5+79.44' | 6+15.87' | 69.5676 (d) | 34.23' | N47° 09' 34"W | (1615284.1215',472542.3544',932.27') | (1615259.0233',472565.6287',935.40') | (1615254.8186',472535.9248') |
| 17 | Line | 22.82' | | N81° 56' 35"W | 6+15.87' | 6+38.69' | | | | (1615259.0233',472565.6287',935.40') | (1615236.4239',472568.8277',936.60') | |
| 18 | Line | 15.00' | | N8° 03' 25"E | 6+38.69' | 6+53.69' | | | | (1615236.4239',472568.8277',936.60') | (1615238.5263',472583.6796',936.90') | |
| 19 | Curve | 94.25' | 30.00' | | 6+53.69' | 7+47.94' | 180.0000 (d) | 60.00' | N8° 03' 25"E | (1615238.5263',472583.6796',936.90') | (1615246.9356',472643.0874',941.42') | (1615242.7309',472613.3835') |
| 20 | Line | 13.24' | | N81° 56' 35"W | 7+47.94' | 7+61.18' | | | | (1615246.9356',472643.0874',941.42') | (1615233.8219',472644.9437',941.78') | |
| 21 | Line | 15.00' | | N8° 03' 25"E | 7+61.18' | 7+76.18' | | | | (1615233.8219',472644.9437',941.78') | (1615235.9242',472659.7956',942.08') | |
| 22 | Curve | 94.25' | 30.00' | | 7+76.18' | 8+70.43' | 180.0000 (d) | 60.00' | N8° 03' 25"E | (1615235.9242',472659.7956',942.08') | (1615244.3335',472719.2034',946.33') | (1615240.1289',472689.4995') |
| 23 | Line | 3.99' | | N81° 56' 35"W | 8+70.43' | 8+74.42' | | | | (1615244.3335',472719.2034',946.33') | (1615240.3800',472719.7630',946.35') | |
| 24 | Line | 15.00' | | N8° 03' 25"E | 8+74.42' | 8+89.42' | | | | (1615240.3800',472719.7630',946.35') | (1615242.4824',472734.6150',946.65') | |
| 25 | Curve | 55.36' | 25.00' | | 8+89.42' | 9+44.78' | 126.8699 (d) | 44.72' | N34° 37' 19"E | (1615242.4824',472734.6150',946.65') | (1615267.8912',472771.4171',948.48') | (1615245.9863',472759.3682') |
| 26 | Curve | 46.36' | 50.00' | | 9+44.78' | 9+91.14' | 53.1301 (d) | 44.72' | N55° 22' 41"W | (1615267.8912',472771.4171',948.48') | (1615231.0891',472796.8259',949.84') | (1615224.0813',472747.3194') |
| 27 | Line | 15.00' | | N8° 03' 25"E | 9+91.14' | 10+06.14' | | | | (1615231.0891',472796.8259',949.84') | (1615233.1914',472811.6778',950.14') | |
| 28 | Line | 7.00' | | S81° 56' 35"E | 10+06.14' | 10+13.15' | | | | (1615233.1914',472811.6778',950.14') | (1615240.1252',472810.6963',949.96') | |
| 29 | Curve | 40.28' | 65.00' | | 10+13.15' | 10+53.43' | 35.5072 (d) | 39.64' | S64° 11' 22"E | (1615240.1252',472810.6963',949.96') | (1615275.8108',472793.4372',948.90') | (1615231.0151',472746.3379') |
| 30 | Curve | 41.31' | 25.00' | | 10+53.43' | 10+94.74' | 94.6705 (d) | 36.77' | N86° 13' 44"E | (1615275.8108',472793.4372',948.90') | (1615312.4978',472795.8554',949.40') | (1615293.0400',472811.5523') |
| 31 | Line | 15.00' | | S51° 06' 23"E | 10+94.74' | 11+09.74' | | | | (1615312.4978',472795.8554',949.40') | (1615324.1725',472786.4372',949.40') | |
| 32 | Line | 34.52' | | S38° 53' 37"W | 11+09.74' | 11+44.25' | | | | (1615324.1725',472786.4372',949.40') | (1615302.5004',472759.5726',947.60') | |
| 33 | Curve | 18.59' | 30.00' | | 11+44.25' | 11+62.85' | 35.5134 (d) | 18.30' | S21° 08' 14"W | (1615302.5004',472759.5726',947.60') | (1615295.9020',472742.5052',947.51') | (1615325.8498',472740.7362') |
| 34 | Curve | 3.44' | 65.00' | | 11+62.85' | 11+66.29' | 3.0314 (d) | 3.44' | S4° 53' 46"W | (1615295.9020',472742.5052',947.51') | (1615295.6085',472739.0791',947.34') | (1615231.0151',472746.3379') |
| 35 | Curve | 209.72' | 589.00' | | 11+66.29' | 13+76.01' | 20.4009 (d) | 208.62' | S3° 47' 19"E | (1615295.6085',472739.0791',947.34') | (1615309.3929',472530.9199',931.06') | (1615880.9242',472673.3030') |
| 36 | Curve | 220.05' | 211.00' | | 13+76.01' | 15+96.05' | 59.7521 (d) | 210.21' | S15° 53' 13"W | (1615309.3929',472530.9199',931.06') | (1615251.8502',472328.7402',921.70') | (1615104.6508',472479.9134') |
| 37 | Curve | 116.42' | 189.00' | | 15+96.05' | 17+12.47' | 35.2923 (d) | 114.59' | S28° 07' 01"W | (1615251.8502',472328.7402',921.70') | (1615197.8491',472227.6767',914.99') | (1615383.7018',472193.3292') |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PAVING N LOOP ROAD I-SECTIONS EAST

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

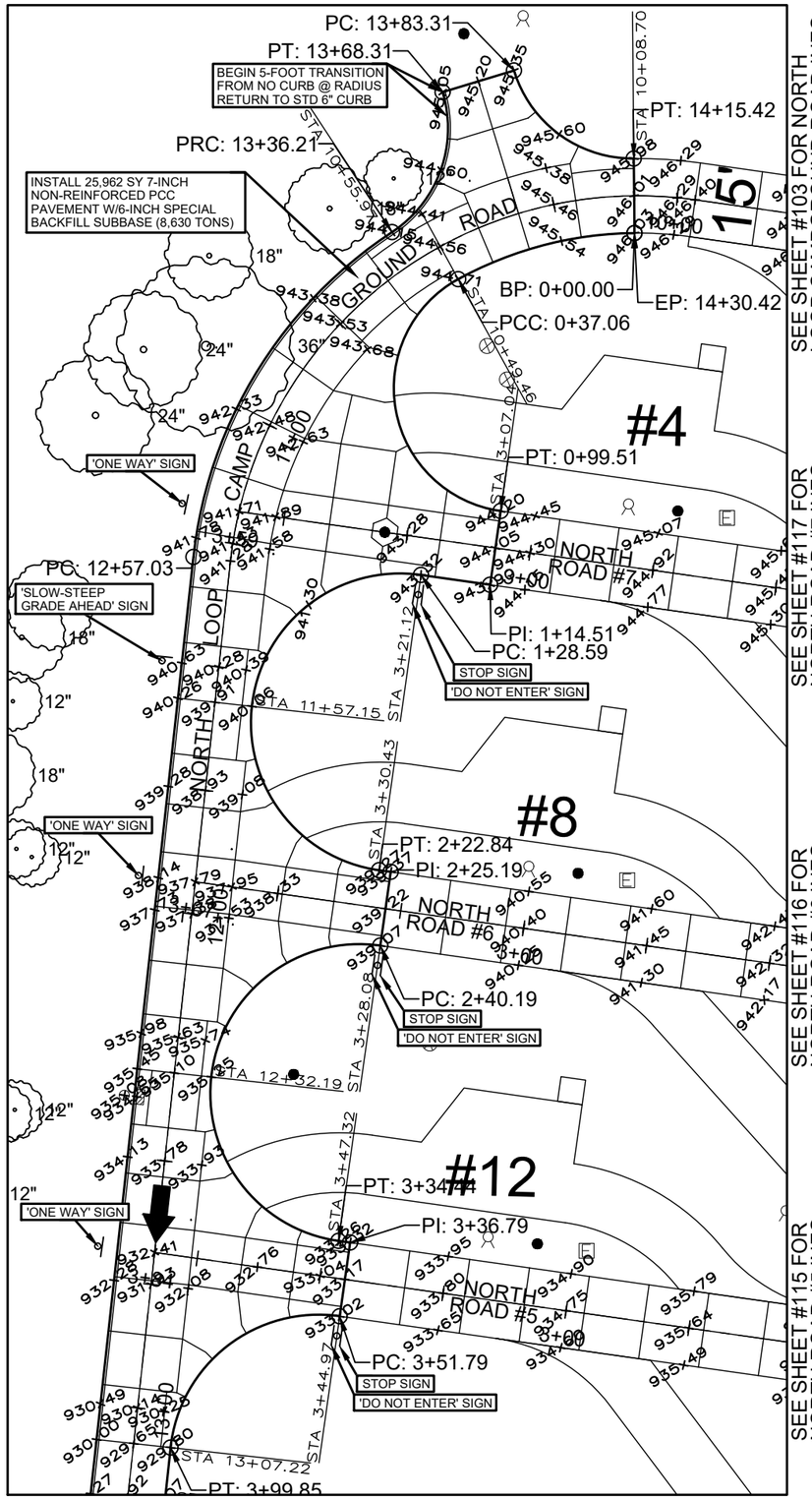
DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

DATE: 12/29/2021

SHEET No: 106




SEE SHEET #103 FOR NORTH LOOP CAMPGROUND ROAD INFO

SEE SHEET #117 FOR NORTH ROAD #7 INFO

SEE SHEET #116 FOR NORTH ROAD #6 INFO

SEE SHEET #115 FOR NORTH ROAD #5 INFO

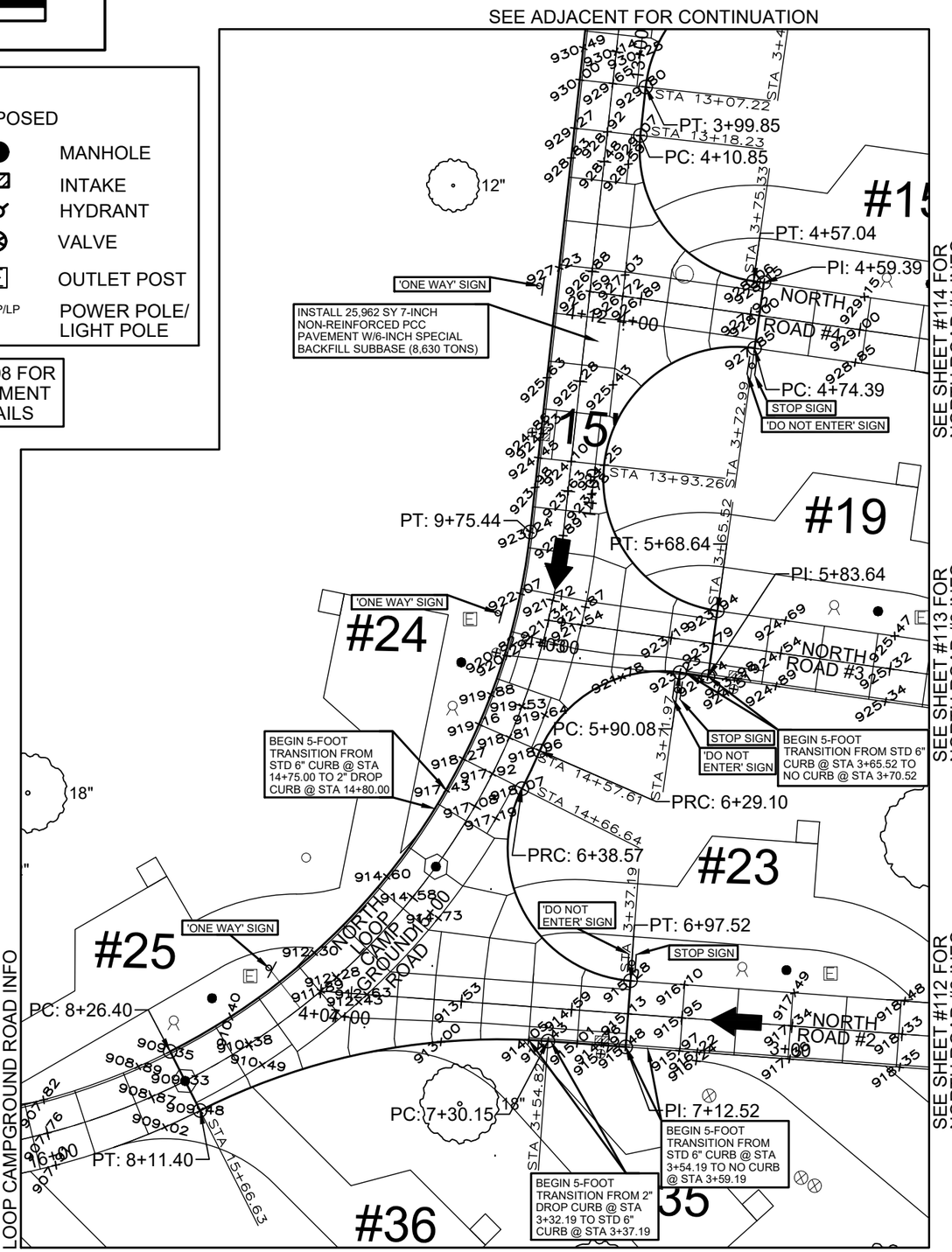
0 FEET 30

## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — POWER POLE/ LIGHT POLE

SEE SHEET #108 FOR EDGE OF PAVEMENT CONTROL DETAILS




SEE SHEET #114 FOR NORTH ROAD #4 INFO

SEE SHEET #113 FOR NORTH ROAD #3 INFO

SEE SHEET #112 FOR NORTH ROAD #2 INFO

SEE SHEET #104 FOR NORTH LOOP CAMPGROUND ROAD INFO

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

PAVING N LOOP ROAD I-SECTIONS WEST

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY DATE | REVISION |
|---|---|---|

DRAWN BY:

PROJECT NUMBER: 22-05-91-01

CHK'D BY:

DATE: 12/29/2021

SHEET No: 107

OUTSIDE EDGE OF NORTH LOOP ROAD PAVEMENT INTERSECTIONS WITH NORTH ROADS #2-7 WEST SIDE

| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Curve | 37.06' | 75.00' | | 0+00.00' | 0+37.06' | 28.3095 (d) | 36.68' | S75° 20' 30"W | (1615006.8381',472827.7253',946.03') | (1614971.3507',472818.4430',944.71') | (1615007.4972',472752.7282') |
| 2 | Curve | 62.45' | 25.00' | | 0+37.06' | 0+99.51' | 143.1301 (d) | 47.43' | S10° 22' 41"E | (1614971.3507',472818.4430',944.71') | (1614979.8957',472771.7848',944.20') | (1614983.3996',472796.5381') |
| 3 | Line | 15.00' | | S8° 03' 25"W | 0+99.51' | 1+14.51' | | | | (1614979.8957',472771.7848',944.20') | (1614977.7934',472756.9329',943.90') | |
| 4 | Line | 14.08' | | N81° 56' 35"W | 1+14.51' | 1+28.59' | | | | (1614977.7934',472756.9329',943.90') | (1614963.8499',472758.9066',943.32') | |
| 5 | Curve | 94.25' | 30.00' | | 1+28.59' | 2+22.84' | 180.0000 (d) | 60.00' | S8° 03' 25"W | (1614963.8499',472758.9066',943.32') | (1614955.4406',472699.4988',939.27') | (1614959.6452',472729.2027') |
| 6 | Line | 2.35' | | S81° 56' 35"E | 2+22.84' | 2+25.19' | | | | (1614955.4406',472699.4988',939.27') | (1614957.7663',472699.1696',939.37') | |
| 7 | Line | 15.00' | | S8° 03' 25"W | 2+25.19' | 2+40.19' | | | | (1614957.7663',472699.1696',939.37') | (1614955.6640',472684.3177',939.07') | |
| 8 | Curve | 94.25' | 30.00' | | 2+40.19' | 3+34.44' | 180.0000 (d) | 60.00' | S8° 03' 25"W | (1614955.6640',472684.3177',939.07') | (1614947.2547',472624.9099',933.26') | (1614951.4593',472654.6138') |
| 9 | Line | 2.35' | | S81° 56' 35"E | 3+34.44' | 3+36.79' | | | | (1614947.2547',472624.9099',933.26') | (1614949.5804',472624.5807',933.32') | |
| 10 | Line | 15.00' | | S8° 03' 25"W | 3+36.79' | 3+51.79' | | | | (1614949.5804',472624.5807',933.32') | (1614947.4781',472609.7288',933.02') | |
| 11 | Curve | 48.06' | 30.00' | | 3+51.79' | 3+99.85' | 91.7939 (d) | 43.09' | S52° 09' 36"W | (1614947.4781',472609.7288',933.02') | (1614913.4525',472583.2976',929.80') | (1614943.2734',472580.0249') |
| 12 | Line | 11.01' | | S6° 15' 47"W | 3+99.85' | 4+10.85' | | | | (1614913.4525',472583.2976',929.80') | (1614912.2519',472572.3579',929.07') | |
| 13 | Curve | 46.18' | 30.00' | | 4+10.85' | 4+57.04' | 88.2061 (d) | 41.76' | S37° 50' 24"E | (1614912.2519',472572.3579',929.07') | (1614937.8682',472539.3813',928.06') | (1614942.0728',472569.0852') |
| 14 | Line | 2.35' | | S81° 56' 35"E | 4+57.04' | 4+59.39' | | | | (1614937.8682',472539.3813',928.06') | (1614940.1940',472539.0521',928.15') | |
| 15 | Line | 15.00' | | S8° 03' 25"W | 4+59.39' | 4+74.39' | | | | (1614940.1940',472539.0521',928.15') | (1614938.0916',472524.2001',927.85') | |
| 16 | Curve | 94.25' | 30.00' | | 4+74.39' | 5+68.64' | 180.0000 (d) | 60.00' | S8° 03' 25"W | (1614938.0916',472524.2001',927.85') | (1614929.6823',472464.7923',923.94') | (1614933.8870',472494.4962') |
| 17 | Line | 15.00' | | S8° 03' 25"W | 5+68.64' | 5+83.64' | | | | (1614929.6823',472464.7923',923.94') | (1614927.5800',472449.9404',924.14') | |
| 18 | Line | 6.45' | | N81° 56' 35"W | 5+83.64' | 5+90.08' | | | | (1614927.5800',472449.9404',924.14') | (1614921.1972',472450.8439',923.23') | |
| 19 | Curve | 39.02' | 30.00' | | 5+90.08' | 6+29.10' | 74.5241 (d) | 36.33' | S60° 47' 41"W | (1614921.1972',472450.8439',923.23') | (1614889.4875',472433.1182',918.96') | (1614916.9925',472421.1400') |
| 20 | Curve | 9.46' | 165.00' | | 6+29.10' | 6+38.57' | 3.2860 (d) | 9.46' | S25° 10' 33"W | (1614889.4875',472433.1182',918.96') | (1614885.4625',472424.5553',918.07') | (1614738.2102',472498.9983') |
| 21 | Curve | 58.95' | 30.00' | | 6+38.57' | 6+97.52' | 112.5888 (d) | 49.91' | S29° 28' 32"E | (1614885.4625',472424.5553',918.07') | (1614910.0229',472381.1019',915.28') | (1614912.2357',472411.0202') |
| 22 | Line | 15.00' | | S4° 13' 48"W | 6+97.52' | 7+12.52' | | | | (1614910.0229',472381.1019',915.28') | (1614908.9165',472366.1428',915.48') | |
| 23 | Line | 17.63' | | N85° 46' 12"W | 7+12.52' | 7+30.15' | | | | (1614908.9165',472366.1428',915.48') | (1614891.3359',472367.4430',914.43') | |
| 24 | Curve | 81.26' | 150.00' | | 7+30.15' | 8+11.40' | 31.0371 (d) | 80.27' | S78° 42' 41"W | (1614891.3359',472367.4430',914.43') | (1614812.6236',472351.7310',909.48') | (1614880.2721',472217.8516') |
| 25 | Line | 15.00' | | N26° 48' 26"W | 8+11.40' | 8+26.40' | | | | (1614812.6236',472351.7310',909.48') | (1614805.8587',472365.1189',909.35') | |
| 26 | Curve | 149.04' | 150.00' | | 8+26.40' | 9+75.44' | 56.9298 (d) | 142.99' | N34° 43' 40"E | (1614805.8587',472365.1189',909.35') | (1614887.3150',472482.6345',923.24') | (1614738.2102',472498.9983') |
| 27 | Line | 281.59' | | N6° 15' 47"E | 9+75.44' | 12+57.03' | | | | (1614887.3150',472482.6345',923.24') | (1614918.0344',472762.5465',941.63') | |
| 28 | Curve | 79.17' | 90.00' | | 12+57.03' | 13+36.21' | 50.4016 (d) | 76.64' | N31° 27' 49"E | (1614918.0344',472762.5465',941.63') | (1614958.0386',472827.9203',944.15') | (1615007.4972',472752.7282') |
| 29 | Curve | 32.11' | 25.00' | | 13+36.21' | 13+68.31' | 73.5840 (d) | 29.95' | N19° 52' 21"E | (1614958.0386',472827.9203',944.15') | (1614968.2180',472856.0827',945.05') | (1614944.3001',472848.8070') |
| 30 | Line | 15.00' | | N73° 04' 50"E | 13+68.31' | 13+83.31' | | | | (1614968.2180',472856.0827',945.05') | (1614982.5687',472860.4481',945.35') | |
| 31 | Curve | 32.11' | 25.00' | | 13+83.31' | 14+15.42' | 73.5840 (d) | 29.95' | S53° 42' 42"E | (1614982.5687',472860.4481',945.35') | (1615006.7063',472842.7247',945.98') | (1615006.4866',472867.7238') |
| 32 | Line | 15.00' | | S0° 30' 13"E | 14+15.42' | 14+30.42' | | | | (1615006.7063',472842.7247',945.98') | (1615006.8381',472827.7253',946.03') | |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PAVING N LOOP ROAD I-SECTIONS WEST

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY DATE | REVISION |
|---|---|---|

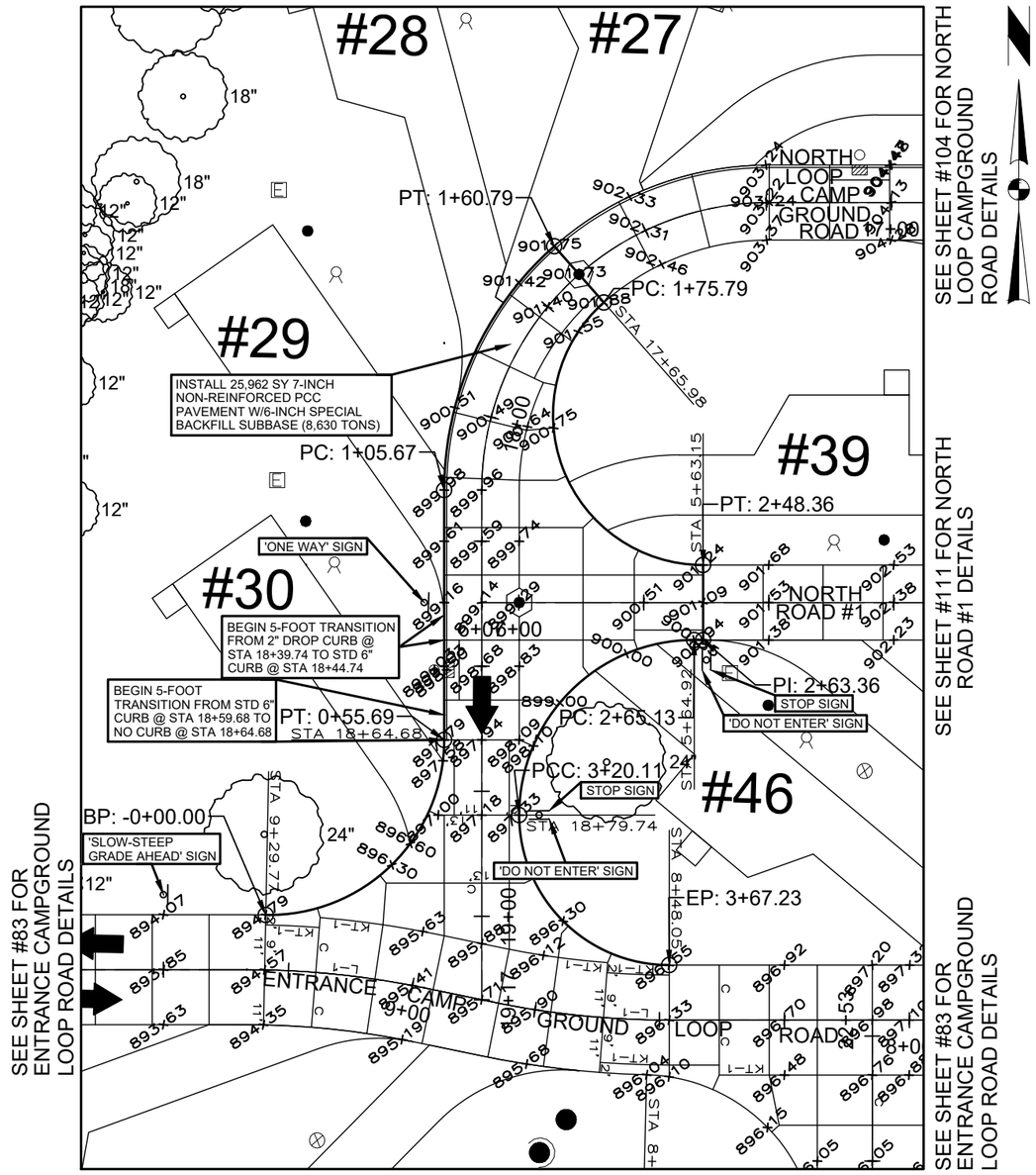
DRAWN BY:

CHK'D BY:

PROJECT NUMBER: 22-05-91-01

DATE: 12/29/2021

SHEET No: 108




0 30
FEET

## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE

| OUTSIDE EDGE OF NORTH LOOP ROAD PAVEMENT INTERSECTION WITH NORTH ROAD #1 WEST SIDE | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Curve | 55.69' | 35.00' | | 0+00.00' | 0+55.69' | 91.1606 (d) | 50.00' | N45° 34' 49"E | (1614553.3994',472199.0260',894.79') | (1614589.1084',472234.0188',897.79') | (1614554.1084',472234.0188') |
| 2 | Line | 49.98' | | N0° 00' 00"E | 0+55.69' | 1+05.67' | | | | (1614589.1084',472234.0188',897.79') | (1614589.1084',472283.9983',899.98') | |
| 3 | Curve | 55.12' | 65.00' | | 1+05.67' | 1+60.79' | 48.5904 (d) | 53.49' | N24° 17' 43"E | (1614589.1084',472283.9983',899.98') | (1614611.1149',472332.7483',901.75') | (1614654.1084',472283.9983') |
| 4 | Line | 15.00' | | S41° 24' 35"E | 1+60.79' | 1+75.79' | | | | (1614611.1149',472332.7483',901.75') | (1614621.0365',472321.4983',901.88') | |
| 5 | Curve | 72.57' | 30.00' | | 1+75.79' | 2+48.36' | 138.5904 (d) | 56.12' | S20° 42' 17"E | (1614621.0365',472321.4983',901.88') | (1614640.8796',472268.9983',901.24') | (1614640.8796',472298.9983') |
| 6 | Line | 15.00' | | S0° 00' 00"E | 2+48.36' | 2+63.36' | | | | (1614640.8796',472268.9983',901.24') | (1614640.8796',472253.9983',900.94') | |
| 7 | Line | 1.77' | | N90° 00' 00"W | 2+63.36' | 2+65.13' | | | | (1614640.8796',472253.9983',900.94') | (1614639.1084',472253.9983',900.85') | |
| 8 | Curve | 54.98' | 35.00' | | 2+65.13' | 3+20.11' | 90.0000 (d) | 49.50' | S45° 00' 00"W | (1614639.1084',472253.9983',900.85') | (1614604.1084',472218.9983',897.33') | (1614639.1084',472218.9983') |
| 9 | Curve | 47.12' | 30.00' | | 3+20.11' | 3+67.23' | 90.0000 (d) | 42.43' | S45° 00' 00"E | (1614604.1084',472218.9983',897.33') | (1614634.1084',472188.9983',896.55') | (1614634.1084',472218.9983') |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

PAVING N LOOP ROAD I-SECTIONS WEST

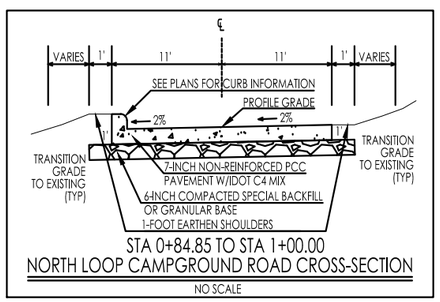
CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

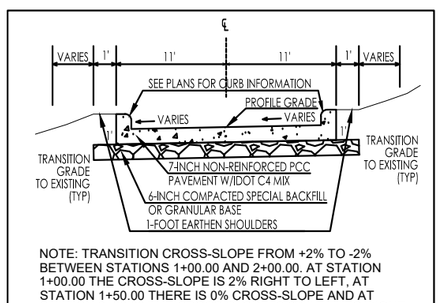
DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 109

| NORTH LOOP CAMPGROUND ROAD CENTERLINE CONTROL | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Curve | 266.68' | 200.00' | | 0+00.00' | 2+66.68' | 76.3987 (d) | 247.36' | N7° 33' 49"E | (1615211.6169',472091.4136',903.46') | (1615244.1763',472336.6213',921.75') | (1615383.7018',472193.3292') |
| 2 | Curve | 208.57' | 200.00' | | 2+66.68' | 4+75.26' | 59.7521 (d) | 199.25' | N15° 53' 13"E | (1615244.1763',472336.6213',921.75') | (1615298.7191',472528.2608',930.78') | (1615104.6508',472479.9134') |
| 3 | Curve | 213.73' | 600.00' | | 4+75.26' | 6+88.99' | 20.4097 (d) | 212.60' | N3° 47' 03"W | (1615298.7191',472528.2608',930.78') | (1615284.6875',472740.3986',947.07') | (1615880.9242',472673.3030') |
| 4 | Curve | 88.68' | 57.50' | | 6+88.99' | 7+77.66' | 88.3638 (d) | 80.15' | N37° 45' 41"W | (1615284.6875',472740.3986',947.07') | (1615235.6071',472803.7611',949.90') | (1615227.5482',472746.8286') |
| 5 | Line | 218.71' | | N81° 56' 35"W | 7+77.66' | 9+96.37' | | | | (1615235.6071',472803.7611',949.90') | (1615019.0601',472834.4139',946.40') | |
| 6 | Curve | 132.17' | 82.50' | | 9+96.37' | 11+28.54' | 91.7939 (d) | 118.48' | S52° 09' 36"W | (1615019.0601',472834.4139',946.40') | (1614925.4896',472761.7283',941.28') | (1615007.4972',472752.7282') |
| 7 | Line | 281.59' | | S6° 15' 47"W | 11+28.54' | 14+10.14' | | | | (1614925.4896',472761.7283',941.28') | (1614894.7702',472481.8163',922.89') | |
| 8 | Curve | 230.18' | 157.50' | | 14+10.14' | 16+40.32' | 83.7370 (d) | 210.24' | S48° 07' 53"W | (1614894.7702',472481.8163',922.89') | (1614738.2102',472341.4983',906.30') | (1614738.2102',472498.9983') |
| 9 | Line | 84.10' | | N90° 00' 00"W | 16+40.32' | 17+24.42' | | | | (1614738.2102',472341.4983',906.30') | (1614654.1084',472341.4983',903.24') | |
| 10 | Curve | 90.32' | 57.50' | | 17+24.42' | 18+14.74' | 90.0000 (d) | 81.32' | S45° 00' 00"W | (1614654.1084',472341.4983',903.24') | (1614596.6084',472283.9983',899.96') | (1614654.1084',472283.9983') |
| 11 | Line | 101.95' | | S0° 00' 00"E | 18+14.74' | 19+16.69' | | | | (1614596.6084',472283.9983',899.96') | (1614596.6084',472182.0507',895.71') | |

| PROPOSED PROFILE GRADE NORTH LOOP CAMPGROUND ROAD | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 903.46' | | 1.86% | | | | |
| 2 | 0+11.83' | 903.68' | 1.86% | 8.02% | 6.16% | | | |
| 3 | 0+84.85' | 909.53' | 8.02% | 8.40% | 0.39% | | | |
| 4 | 2+10.00' | 920.05' | 8.40% | 3.00% | 5.40% | Crest | 100.00' | 18.505 |
| 5 | 3+25.00' | 923.50' | 3.00% | 4.06% | 1.07% | Sag | 100.00' | 93.844 |
| 6 | 4+50.00' | 928.58' | 4.06% | 8.20% | 4.14% | Sag | 100.00' | 24.182 |
| 7 | 6+75.00' | 947.03' | 8.20% | 2.80% | 5.40% | Crest | 100.00' | 18.519 |
| 8 | 8+25.00' | 951.23' | 2.80% | -2.80% | 5.60% | Crest | 100.00' | 17.857 |
| 9 | 10+25.00' | 945.63' | -2.80% | -4.20% | 1.40% | Crest | 100.00' | 71.429 |
| 10 | 11+75.00' | 939.33' | -4.20% | -7.40% | 3.20% | Crest | 100.00' | 31.25 |
| 11 | 13+00.00' | 930.08' | -7.40% | -6.40% | 1.00% | Sag | 50.00' | 50 |
| 12 | 14+25.00' | 922.08' | -6.40% | -10.00% | 3.60% | Crest | 80.00' | 22.222 |
| 13 | 15+50.00' | 909.58' | -10.00% | -3.63% | 6.37% | Sag | 100.00' | 15.71 |
| 14 | 18+50.00' | 898.68' | -3.63% | -5.04% | 1.41% | | | |
| 15 | 19+05.46' | 895.88' | -5.04% | -1.51% | 3.53% | | | |
| 16 | 19+16.69' | 895.71' | -1.51% | | | | | |

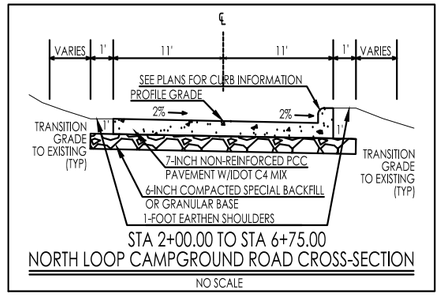



STA 0+84.85 TO STA 1+00.00
NORTH LOOP CAMPGROUND ROAD CROSS-SECTION
NO SCALE

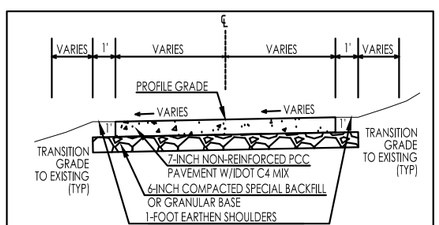



NOTE: TRANSITION CROSS-SLOPE FROM +2% TO -2% BETWEEN STATIONS 1+00.00 AND 2+00.00. AT STATION 1+00.00 THE CROSS-SLOPE IS 2% RIGHT TO LEFT, AT STATION 1+50.00 THERE IS 0% CROSS-SLOPE AND AT STATION 2+00.00 THE CROSS-SLOPE IS 2% LEFT TO RIGHT.

STA 1+00.00 TO STA 2+00.00
NORTH LOOP CAMPGROUND ROAD CROSS-SECTION
NO SCALE

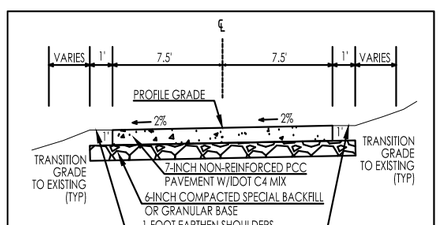



STA 2+00.00 TO STA 6+75.00
NORTH LOOP CAMPGROUND ROAD CROSS-SECTION
NO SCALE

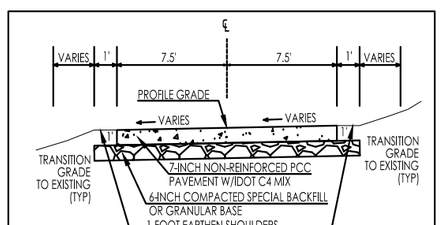



NOTE: TRANSITION CROSS-SLOPE FROM +2% TO -2% BETWEEN STATIONS 6+75.00 AND 7+75.00. AT STATION 6+75.00 THE CROSS-SLOPE IS 2% LEFT TO RIGHT, AT STATION 7+25.00 THERE IS 0% CROSS-SLOPE AND AT STATION 7+75.00 THE CROSS-SLOPE IS 2% RIGHT TO LEFT.
THE PAVEMENT WIDTH ALSO TAPERS FROM 22' WIDE @ STA 6+75.00 TO 15' WIDE @ STA 7+81.17.

STA 6+75.00 TO STA 7+81.17
NORTH LOOP CAMPGROUND ROAD CROSS-SECTION
NO SCALE

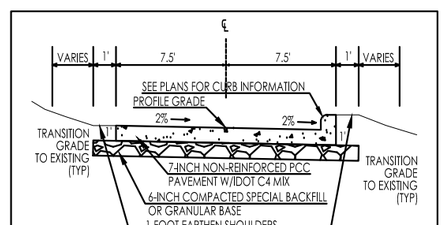



STA 7+81.17 TO STA 9+50.00
NORTH LOOP CAMPGROUND ROAD CROSS-SECTION
NO SCALE




NOTE: TRANSITION CROSS-SLOPE FROM +2% TO -2% BETWEEN STATIONS 9+50.00 AND 10+50.00. AT STATION 9+50.00 THE CROSS-SLOPE IS 2% RIGHT TO LEFT, AT STATION 10+00.00 THERE IS 0% CROSS-SLOPE AND AT STATION 10+50.00 THE CROSS-SLOPE IS 2% LEFT TO RIGHT.

STA 9+50.00 TO STA 10+50.00
NORTH LOOP CAMPGROUND ROAD CROSS-SECTION
NO SCALE




STA 10+50.00 TO STA 18+64.68
NORTH LOOP CAMPGROUND ROAD CROSS-SECTION
NO SCALE

CONSULTANT:

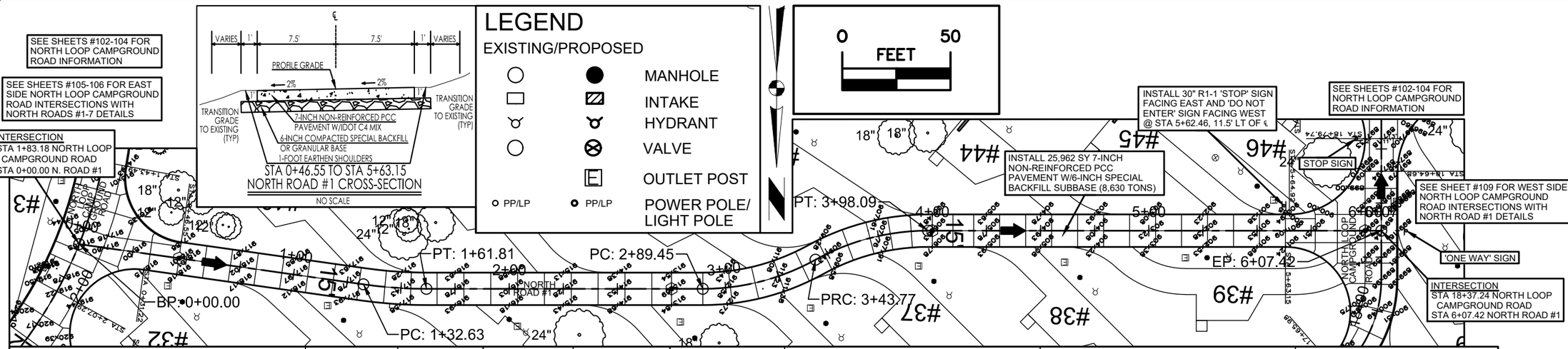
IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

NORTH LOOP ROAD CTL & X-SECTIONS

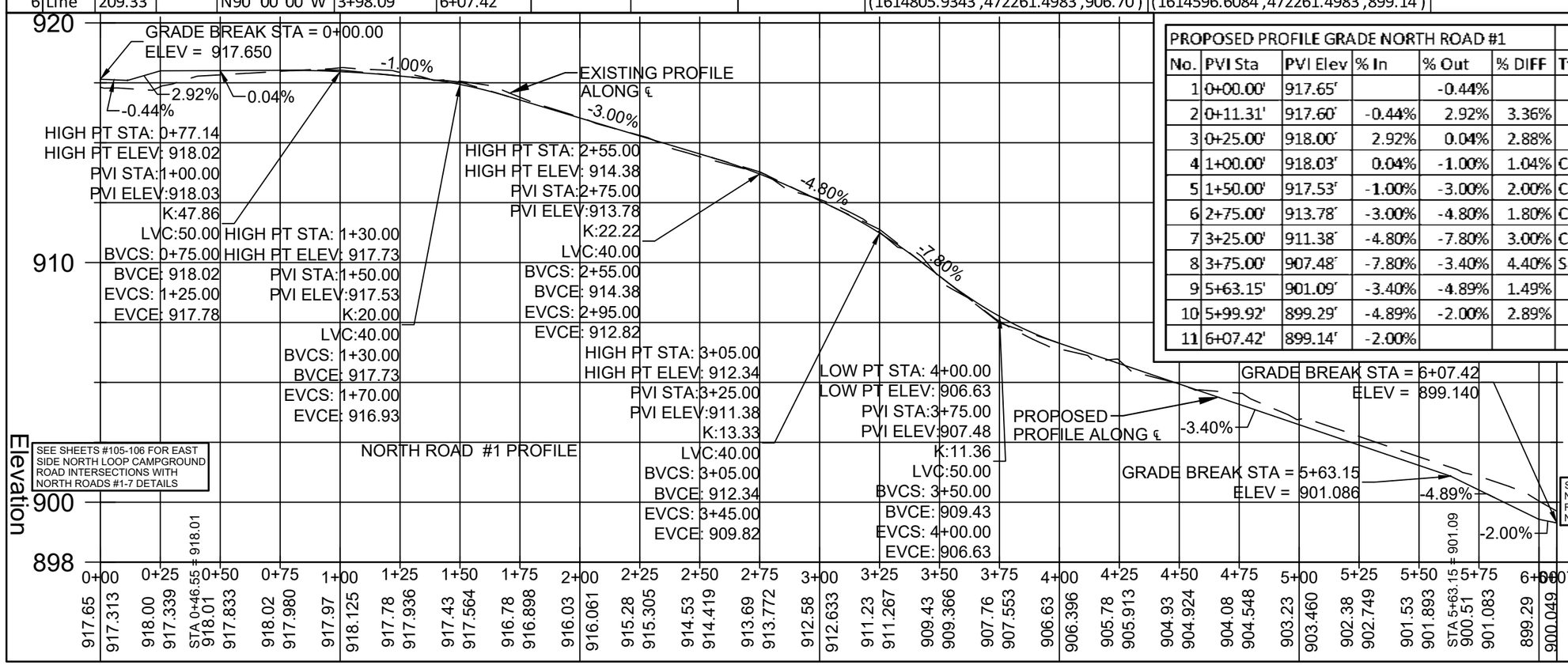
CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY | DATE | REVISION |
|---|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 110




| NORTH CAMPGROUND ROAD #1 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 132.63' | | N81° 56' 35"W | 0+00.00' | 1+32.63' | | | | (1615198.0568',472267.7331',917.65') | (1615066.7343',472286.3222',917.71') | |
| 2 | Curve | 29.18' | 207.50' | | 1+32.63' | 1+61.81' | 8.0568 (d) | 29.15' | N85° 58' 18"W | (1615066.7343',472286.3222',917.71') | (1615037.6521',472288.3703',917.16') | (1615037.6521',472080.8703') |
| 3 | Line | 127.64' | | N90° 00' 00"W | 1+61.81' | 2+89.45' | | | | (1615037.6521',472288.3703',917.16') | (1614910.0154',472288.3703',913.08') | |
| 4 | Curve | 54.32' | 107.50' | | 2+89.45' | 3+43.77' | 28.9534 (d) | 53.75' | S75° 31' 24"W | (1614910.0154',472288.3703',913.08') | (1614857.9749',472274.9343',909.92') | (1614910.0154',472180.8703') |
| 5 | Curve | 54.32' | 107.50' | | 3+43.77' | 3+98.09' | 28.9534 (d) | 53.75' | S75° 31' 24"W | (1614857.9749',472274.9343',909.92') | (1614805.9343',472261.4983',906.70') | (1614805.9343',472368.9983') |
| 6 | Line | 209.33' | | N90° 00' 00"W | 3+98.09' | 6+07.42' | | | | (1614805.9343',472261.4983',906.70') | (1614596.6084',472261.4983',899.14') | |




| PROPOSED PROFILE GRADE NORTH ROAD #1 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 917.65' | | -0.44% | | | | |
| 2 | 0+11.31' | 917.60' | -0.44% | 2.92% | 3.36% | | | |
| 3 | 0+25.00' | 918.00' | 2.92% | 0.04% | 2.88% | | | |
| 4 | 1+00.00' | 918.03' | 0.04% | -1.00% | 1.04% | Crest | 50.00' | 47.862 |
| 5 | 1+50.00' | 917.53' | -1.00% | -3.00% | 2.00% | Crest | 40.00' | 20 |
| 6 | 2+75.00' | 913.78' | -3.00% | -4.80% | 1.80% | Crest | 40.00' | 22.222 |
| 7 | 3+25.00' | 911.38' | -4.80% | -7.80% | 3.00% | Crest | 40.00' | 13.333 |
| 8 | 3+75.00' | 907.48' | -7.80% | -3.40% | 4.40% | Sag | 50.00' | 11.364 |
| 9 | 5+63.15' | 901.09' | -3.40% | -4.89% | 1.49% | | | |
| 10 | 5+99.92' | 899.29' | -4.89% | -2.00% | 2.89% | | | |
| 11 | 6+07.42' | 899.14' | -2.00% | | | | | |

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

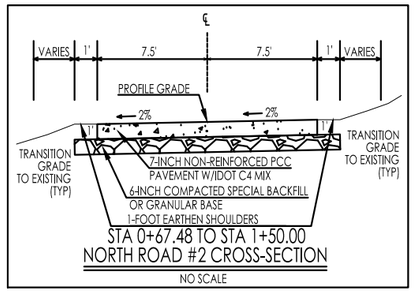
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

PAVING PLAN NORTH ROAD #1

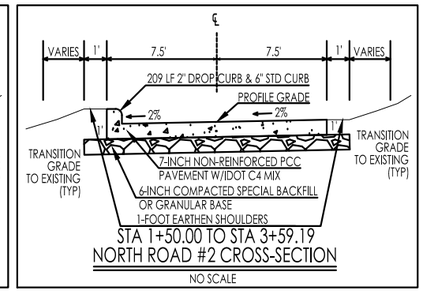
CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY | DATE | REVISION |
|---|---|---|---|

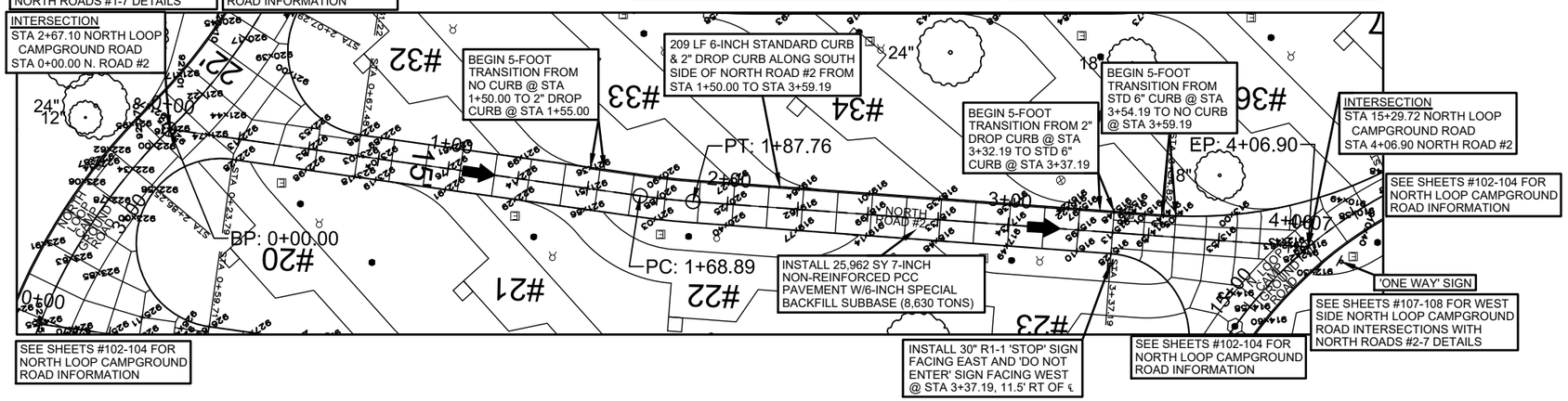
DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 111




STA 0+67.48 TO STA 1+50.00
NORTH ROAD #2 CROSS-SECTION
NO SCALE




STA 1+50.00 TO STA 3+59.19
NORTH ROAD #2 CROSS-SECTION
NO SCALE



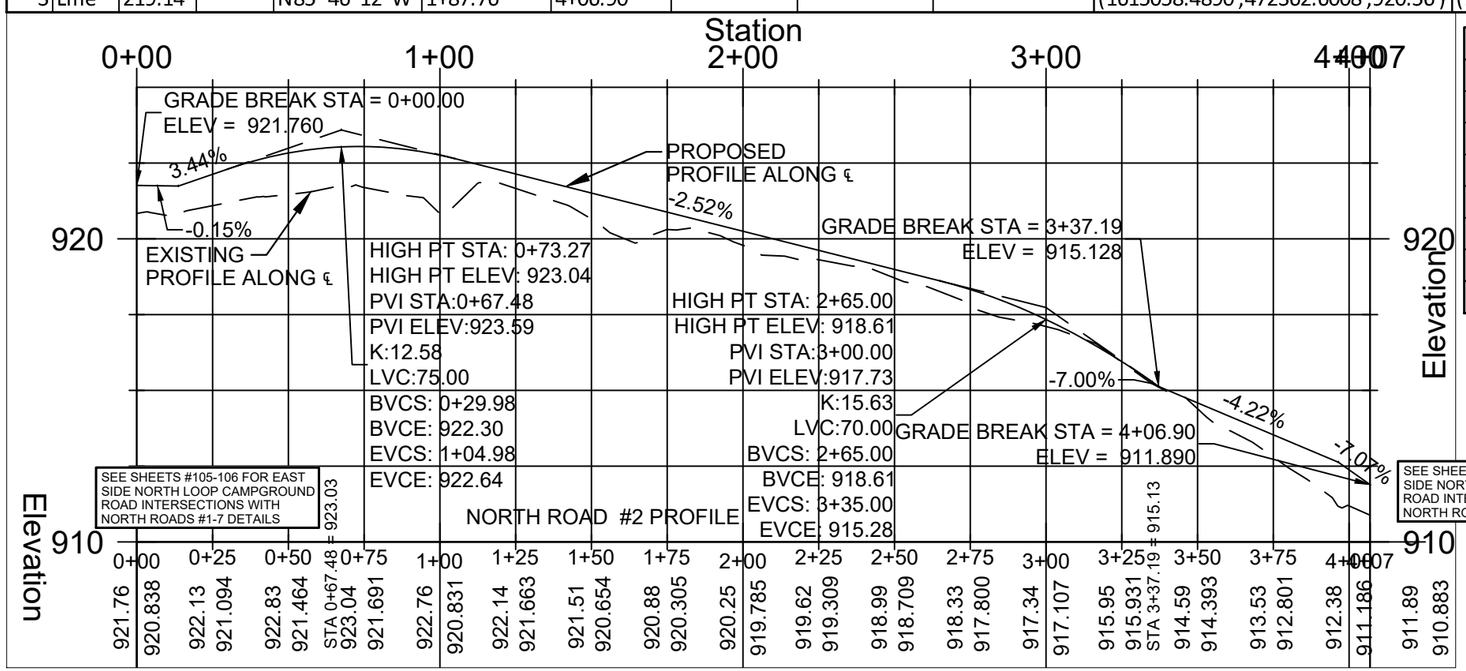

0 FEET 50

## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — POWER POLE/ LIGHT POLE

| NORTH CAMPGROUND ROAD #2 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 168.89' | | N81° 56' 35"W | 0+00.00' | 1+68.89' | | | | (1615244.4727',472336.9105',921.76') | (1615077.2460',472360.5819',921.03') | |
| 2 | Curve | 18.87' | 282.50' | | 1+68.89' | 1+87.76' | 3.8269 (d) | 18.87' | N83° 51' 24"W | (1615077.2460',472360.5819',921.03') | (1615058.4890',472362.6008',920.56') | (1615037.6521',472080.8703') |
| 3 | Line | 219.14' | | N85° 46' 12"W | 1+87.76' | 4+06.90' | | | | (1615058.4890',472362.6008',920.56') | (1614839.9455',472378.7644',911.89') | |




| PROPOSED PROFILE GRADE NORTH ROAD #2 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 921.76' | | -0.15% | | | | |
| 2 | 0+13.71' | 921.74' | -0.15% | 3.44% | 3.59% | | | |
| 3 | 0+67.48' | 923.59' | 3.44% | -2.52% | 5.96% | Crest | 75.00' | 12.582 |
| 4 | 3+00.00' | 917.73' | -2.52% | -7.00% | 4.48% | Crest | 70.00' | 15.629 |
| 5 | 3+37.19' | 915.13' | -7.00% | -4.22% | 2.78% | | | |
| 6 | 3+96.44' | 912.63' | -4.22% | -7.07% | 2.86% | | | |
| 7 | 4+06.90' | 911.89' | -7.07% | | | | | |

CONSULTANT:

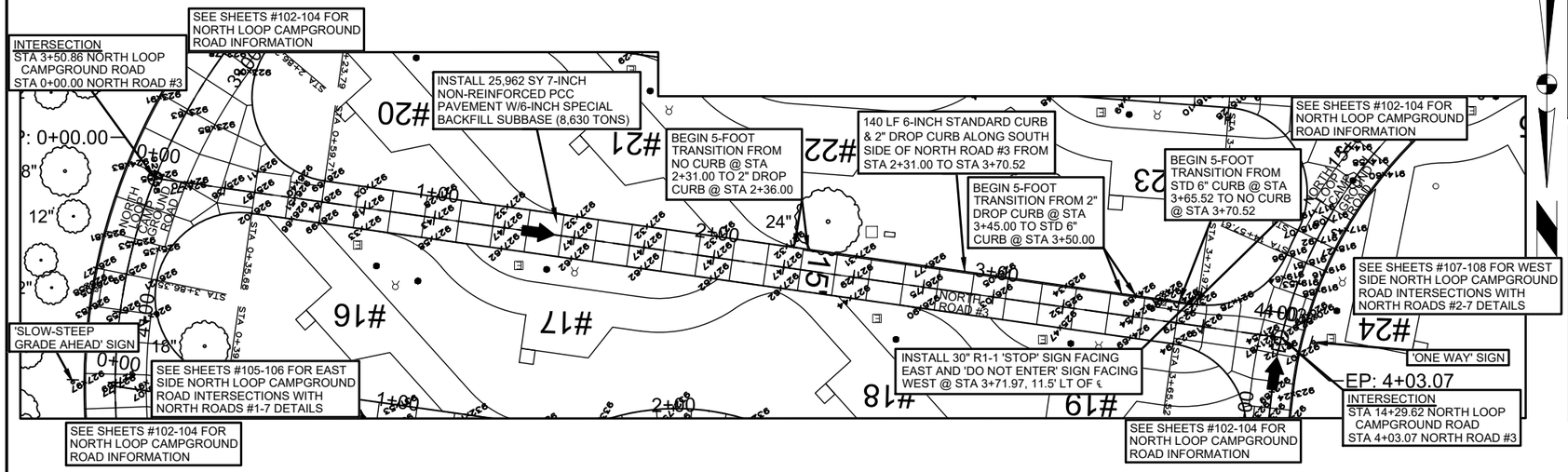
IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

PAVING PLAN NORTH ROAD #2

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 112



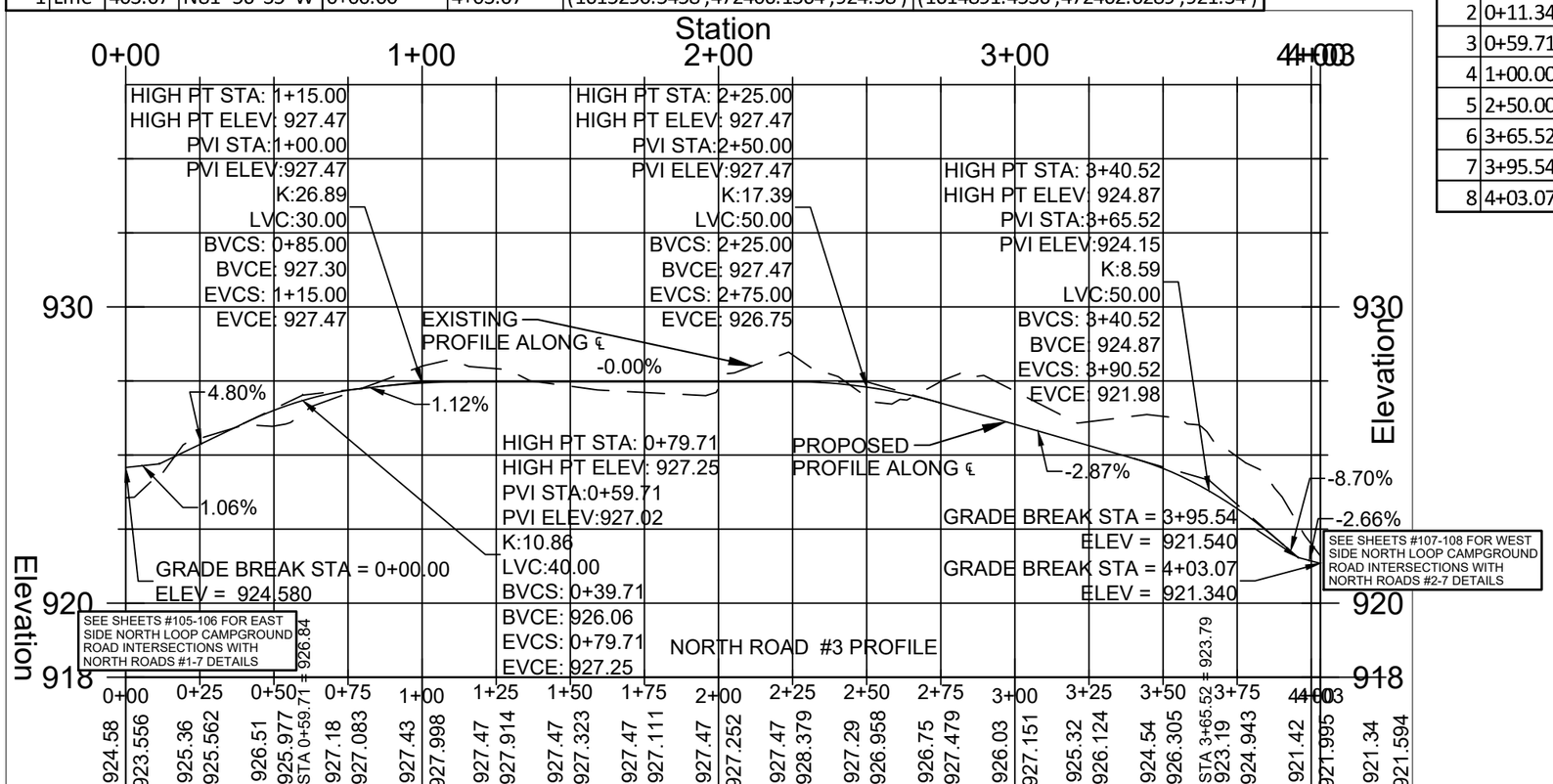

0 FEET 50

## LEGEND

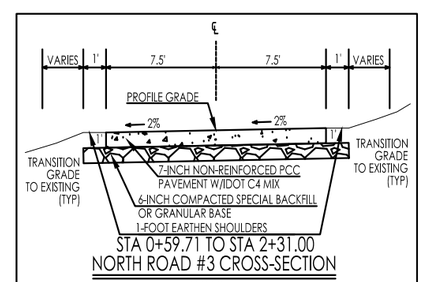
EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — POWER POLE/ LIGHT POLE

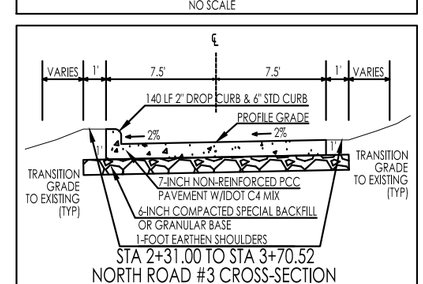
| NORTH CAMPGROUND ROAD #3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Type | Length | Direction | Start Station | End Station | Start Point | End Point |
| 1 | Line | 403.07' | N81° 56' 35"W | 0+00.00' | 4+03.07' | (1615290.5458',472406.1364',924.58') | (1614891.4536',472462.6289',921.34') |




| PROPOSED PROFILE GRADE NORTH ROAD #3 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 924.58' | | 1.06% | | | | |
| 2 | 0+11.34' | 924.70' | 1.06% | 4.80% | 3.74% | | | |
| 3 | 0+59.71' | 927.02' | 4.80% | 1.12% | 3.68% | Crest | 40.00' | 10.856 |
| 4 | 1+00.00' | 927.47' | 1.12% | 0.00% | 1.12% | Crest | 30.00' | 26.894 |
| 5 | 2+50.00' | 927.47' | 0.00% | -2.87% | 2.87% | Crest | 50.00' | 17.394 |
| 6 | 3+65.52' | 924.15' | -2.87% | -8.70% | 5.82% | Crest | 50.00' | 8.588 |
| 7 | 3+95.54' | 921.54' | -8.70% | -2.66% | 6.04% | | | |
| 8 | 4+03.07' | 921.34' | -2.66% | | | | | |




STA 0+59.71 TO STA 2+31.00
NORTH ROAD #3 CROSS-SECTION
NO SCALE




STA 2+31.00 TO STA 3+70.52
NORTH ROAD #3 CROSS-SECTION
NO SCALE

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

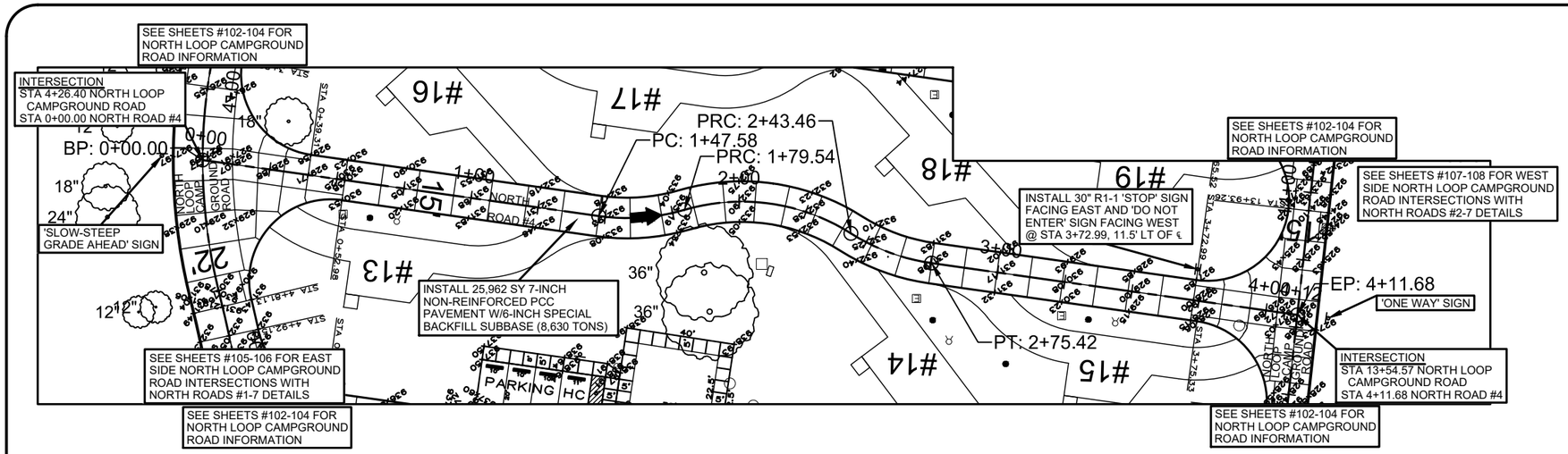
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

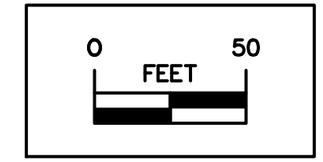
PAVING PLAN NORTH ROAD #3

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 113



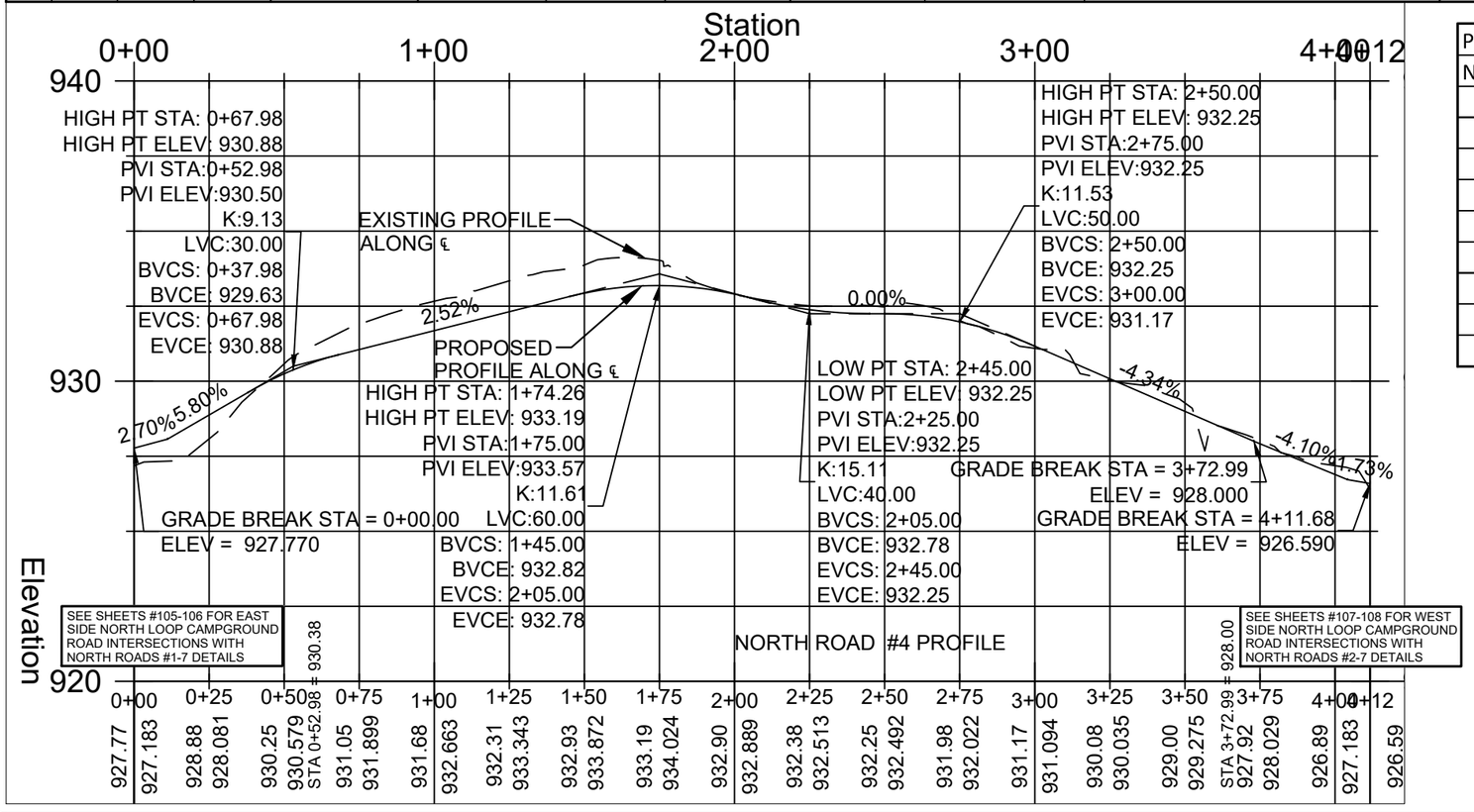




## LEGEND

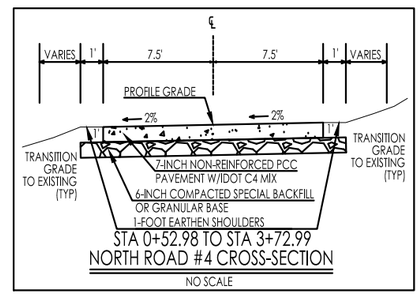
EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — POWER POLE/ LIGHT POLE

| NORTH CAMPGROUND ROAD #4 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 147.58' | | N81° 56' 35"W | 0+00.00' | 1+47.58' | | | | (1615304.6508',472479.8875',927.77') | (1615158.5236',472500.5721',932.88') | |
| 2 | Curve | 31.96' | 75.00' | | 1+47.58' | 1+79.54' | 24.4145 (d) | 31.72' | S85° 50' 59"W | (1615158.5236',472500.5721',932.88') | (1615126.8896',472498.2766',933.17') | (1615148.0120',472426.3124') |
| 3 | Curve | 63.92' | 75.00' | | 1+79.54' | 2+43.46' | 48.8290 (d) | 62.00' | N81° 56' 35"W | (1615126.8896',472498.2766',933.17') | (1615065.5014',472506.9663',932.25') | (1615105.7672',472570.2408') |
| 4 | Curve | 31.96' | 75.00' | | 2+43.46' | 2+75.42' | 24.4145 (d) | 31.72' | N69° 44' 09"W | (1615065.5014',472506.9663',932.25') | (1615035.7472',472517.9515',931.97') | (1615025.2356',472443.6918') |
| 5 | Line | 136.26' | | N81° 56' 35"W | 2+75.42' | 4+11.68' | | | | (1615035.7472',472517.9515',931.97') | (1614900.8318',472537.0491',926.59') | |




| PROPOSED PROFILE GRADE NORTH ROAD #4 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 927.77' | | 2.70% | | | | |
| 2 | 0+11.11' | 928.07' | 2.70% | 5.80% | 3.10% | | | |
| 3 | 0+52.98' | 930.50' | 5.80% | 2.52% | 3.28% | Crest | 30.00' | 9.133 |
| 4 | 1+75.00' | 933.57' | 2.52% | -2.65% | 5.17% | Crest | 60.00' | 11.615 |
| 5 | 2+25.00' | 932.25' | -2.65% | 0.00% | 2.65% | Sag | 40.00' | 15.111 |
| 6 | 2+75.00' | 932.25' | 0.00% | -4.34% | 4.34% | Crest | 50.00' | 11.528 |
| 7 | 3+72.99' | 928.00' | -4.34% | -4.10% | 0.23% | | | |
| 8 | 4+04.18' | 926.72' | -4.10% | -1.73% | 2.37% | | | |
| 9 | 4+11.68' | 926.59' | -1.73% | | | | | |




CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

PAVING PLAN NORTH ROAD #4

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY | DATE | REVISION |
|---|---|---|---|

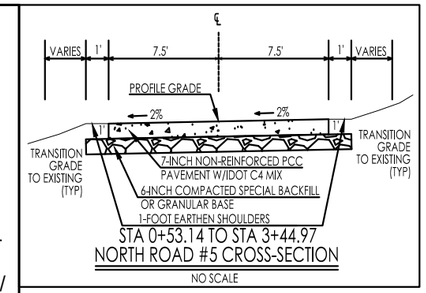
DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 114

| PROPOSED PROFILE GRADE NORTH ROAD #5 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 934.05' | | 4.41% | | | | |
| 2 | 0+11.56' | 934.56' | 4.41% | 5.27% | 0.86% | | | |
| 3 | 0+53.14' | 936.75' | 5.27% | 4.52% | 0.74% | | | |
| 4 | 1+25.00' | 940.00' | 4.52% | -2.87% | 7.39% | Crest | 120.00' | 16.24 |
| 5 | 2+75.00' | 935.70' | -2.87% | -3.81% | 0.94% | Crest | 50.00' | 52.998 |
| 6 | 3+44.97' | 933.03' | -3.81% | -1.58% | 2.23% | Sag | 50.00' | 22.464 |
| 7 | 3+76.16' | 932.54' | -1.58% | -1.73% | 0.15% | | | |
| 8 | 3+83.66' | 932.41' | -1.73% | | | | | |

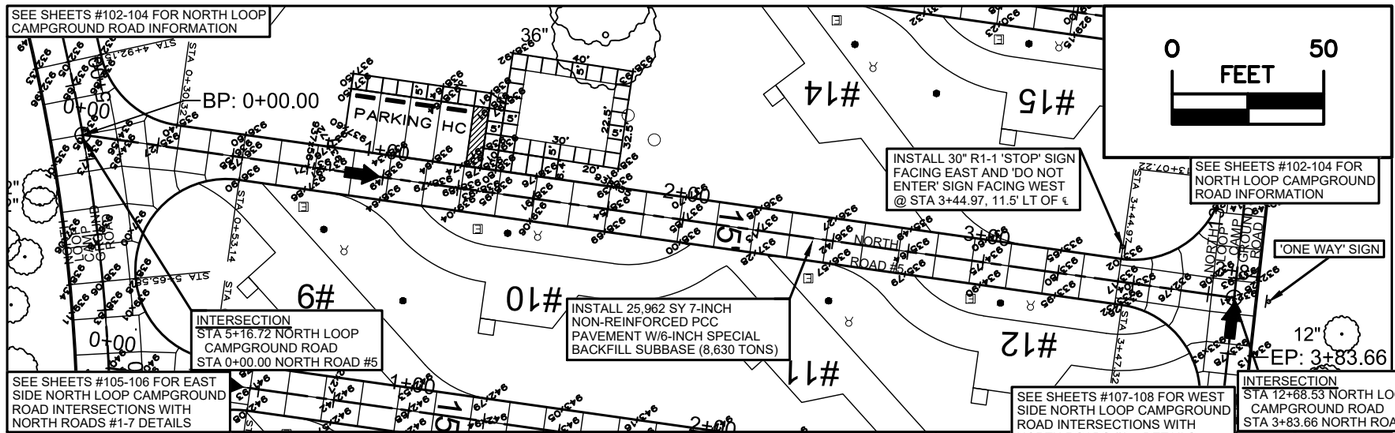
## LEGEND

EXISTING/PROPOSED

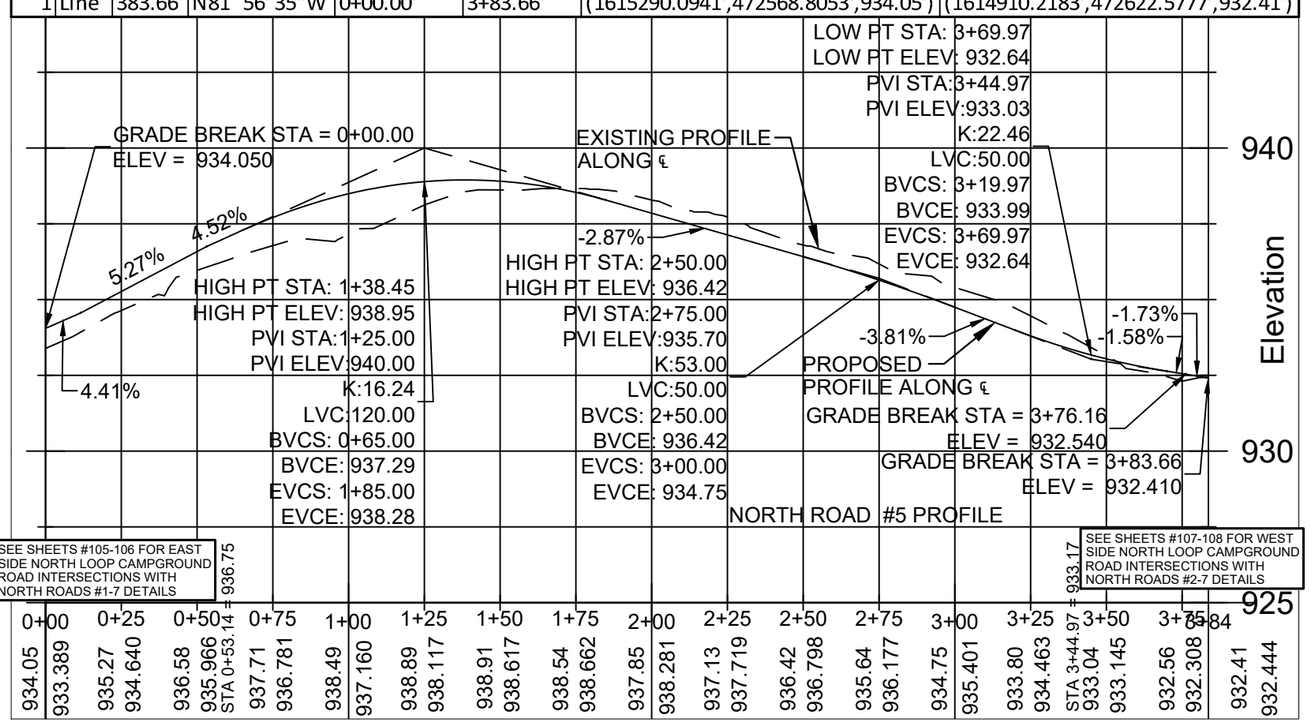
- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP PP/LP POWER POLE/ LIGHT POLE

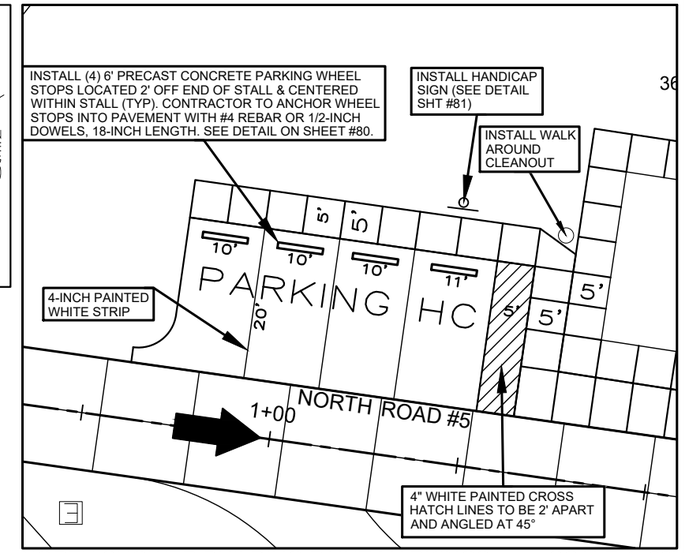



STA 0+53.14 TO STA 3+44.97
NORTH ROAD #5 CROSS-SECTION
NO SCALE

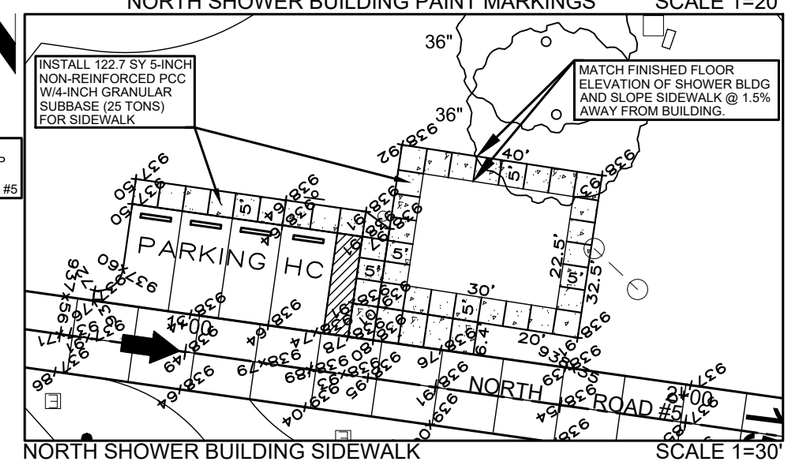



| NORTH CAMPGROUND ROAD #5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Type | Length | Direction | Start Station | End Station | Start Point | End Point |
| 1 | Line | 383.66' | N81° 56' 35"W | 0+00.00' | 3+83.66' | (1615290.0941',472568.8053',934.05') | (1614910.2183',472622.5777',932.41') |

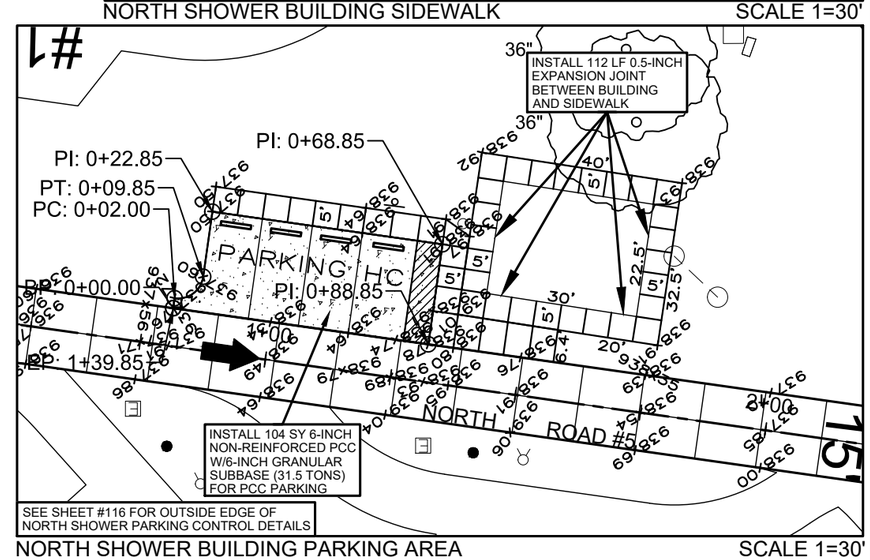



NORTH SHOWER BUILDING PAINT MARKINGS SCALE 1=20'




NORTH SHOWER BUILDING SIDEWALK SCALE 1=30'




NORTH SHOWER BUILDING PARKING AREA SCALE 1=30'

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

PAVING PLAN NORTH ROAD #5

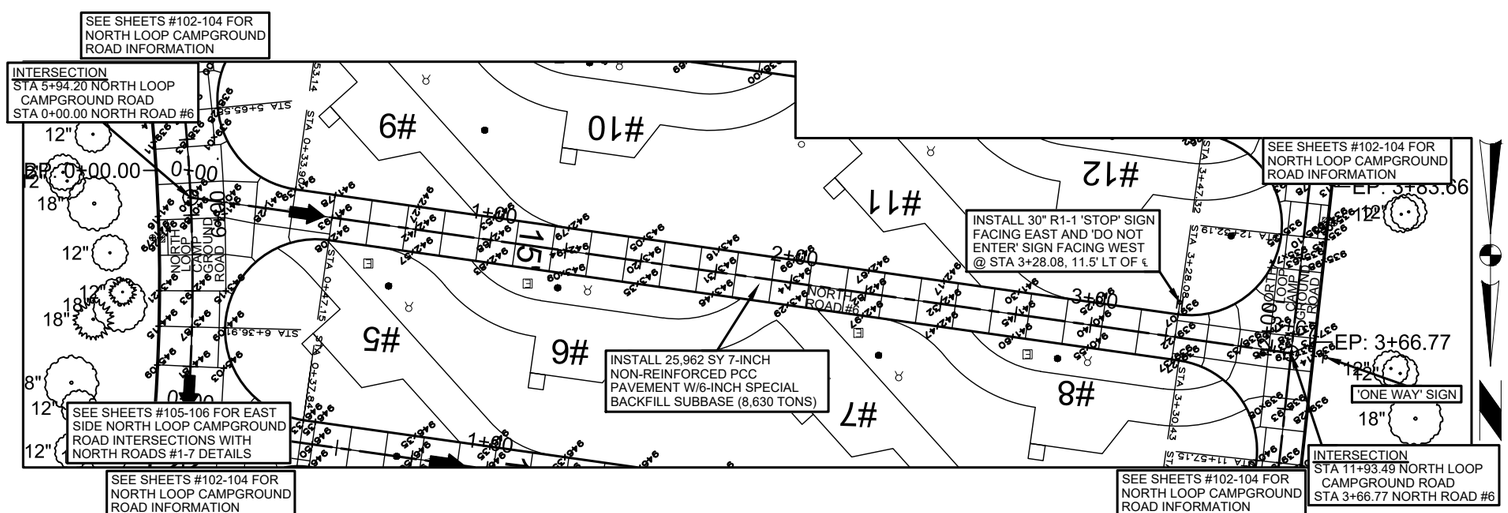
CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

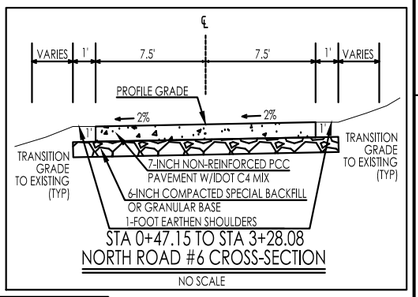
| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 115

| OUTSIDE EDGE OF NORTH SHOWER PARKING AREA | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 2.00' | | S8° 03' 25"W | 0+00.00' | 0+02.00' | | | | (1615209.3135',472572.6653',937.76') | (1615209.0332',472570.6850',937.72') | |
| 2 | Curve | 7.85' | 5.00' | | 0+02.00' | 0+09.85' | 90.0000 (d) | 7.07' | S53° 03' 25"W | (1615209.0332',472570.6850',937.72') | (1615203.3818',472566.4351',937.60') | (1615208.3324',472565.7344') |
| 3 | Line | 13.00' | | S8° 03' 25"W | 0+09.85' | 0+22.85' | | | | (1615203.3818',472566.4351',937.60') | (1615201.5597',472553.5635',937.50') | |
| 4 | Line | 46.00' | | N81° 56' 35"W | 0+22.85' | 0+68.85' | | | | (1615201.5597',472553.5635',937.50') | (1615156.0138',472560.0106',938.91') | |
| 5 | Line | 20.00' | | N8° 03' 25"E | 0+68.85' | 0+88.85' | | | | (1615156.0138',472560.0106',938.91') | (1615158.8169',472579.8132',938.78') | |
| 6 | Line | 51.00' | | S81° 56' 35"E | 0+88.85' | 1+39.85' | | | | (1615158.8169',472579.8132',938.78') | (1615209.3135',472572.6653',937.76') | |

SEE SHEET #115 FOR NORTH SHOWER PARKING AREA DETAILS



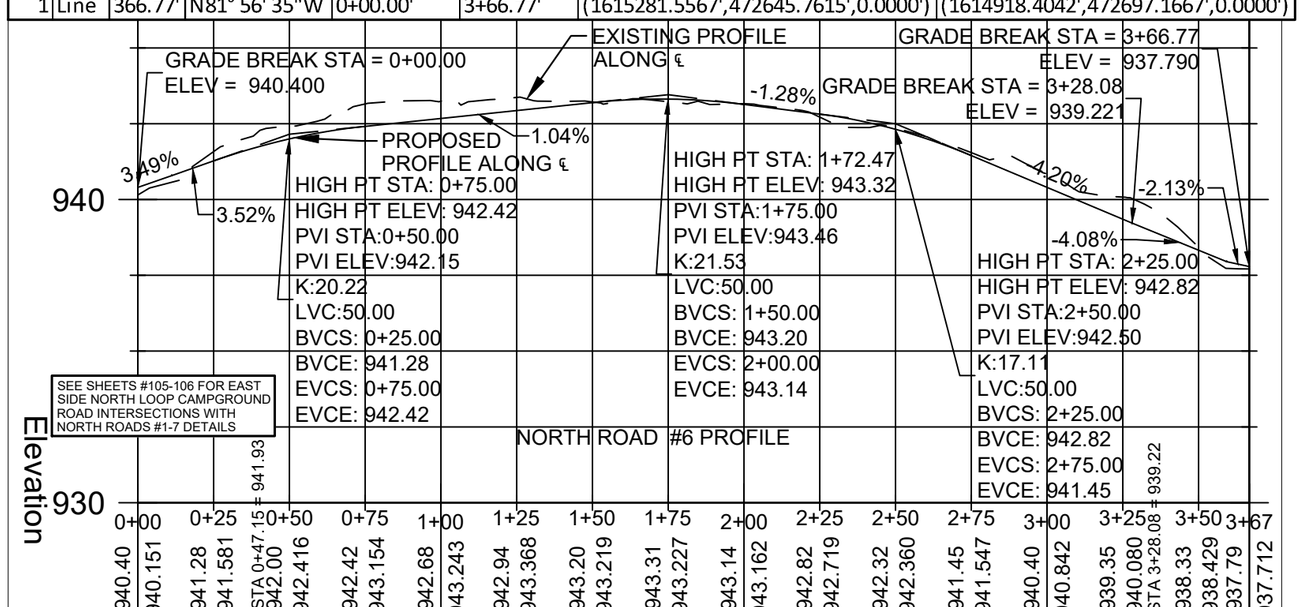

0 50
FEET

## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — POWER POLE/ LIGHT POLE

| NORTH CAMPGROUND ROAD #6 | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Type | Length | Direction | Start Station | End Station | Start Point | End Point |
| 1 | Line | 366.77' | N81° 56' 35"W | 0+00.00' | 3+66.77' | (1615281.5567',472645.7615',0.0000') | (1614918.4042',472697.1667',0.0000') |




| PROPOSED PROFILE GRADE NORTH ROAD #6 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 940.40' | | 3.49% | | | | |
| 2 | 0+11.19' | 940.79' | 3.49% | 3.52% | 0.03% | | | |
| 3 | 0+50.00' | 942.15' | 3.52% | 1.04% | 2.47% | Crest | 50.00' | 20.221 |
| 4 | 1+75.00' | 943.46' | 1.04% | -1.28% | 2.32% | Crest | 50.00' | 21.534 |
| 5 | 2+50.00' | 942.50' | -1.28% | -4.20% | 2.92% | Crest | 50.00' | 17.114 |
| 6 | 3+28.08' | 939.22' | -4.20% | -4.08% | 0.12% | | | |
| 7 | 3+59.26' | 937.95' | -4.08% | -2.13% | 1.95% | | | |
| 8 | 3+66.77' | 937.79' | -2.13% | | | | | |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

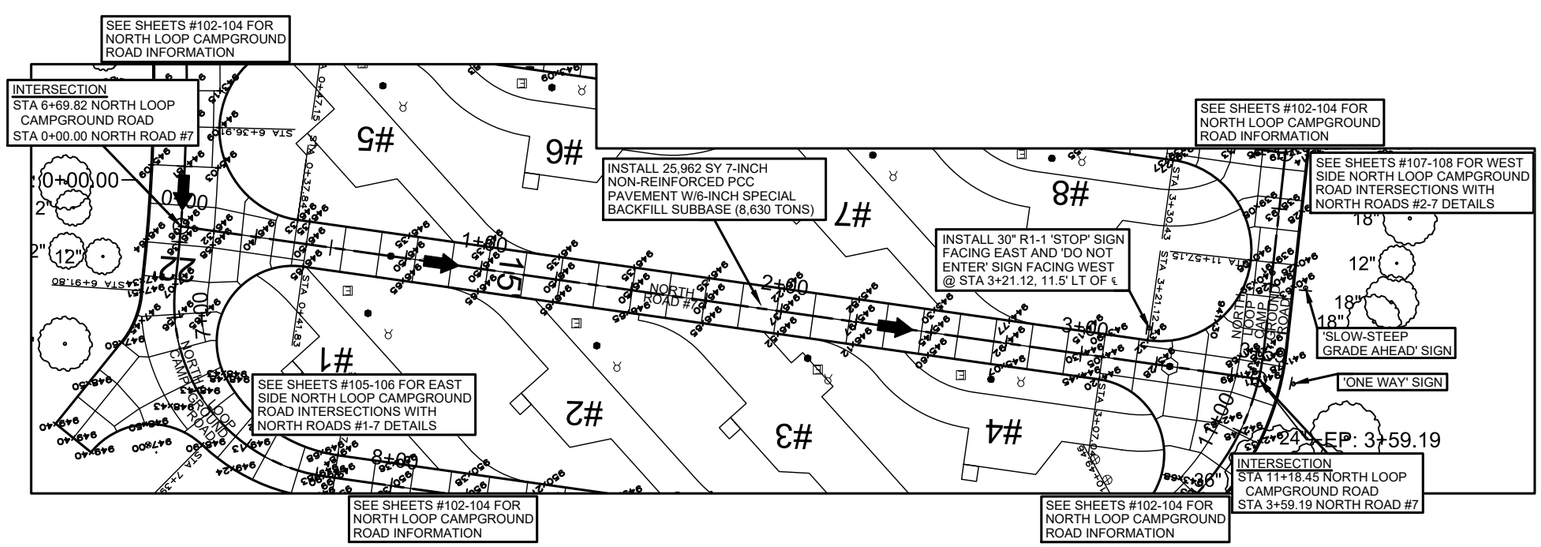
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

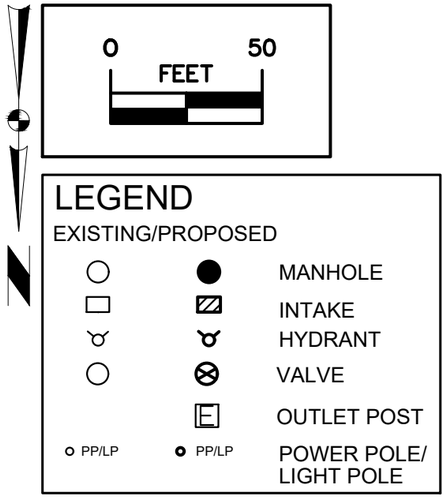
PAVING PLAN NORTH ROAD #6

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

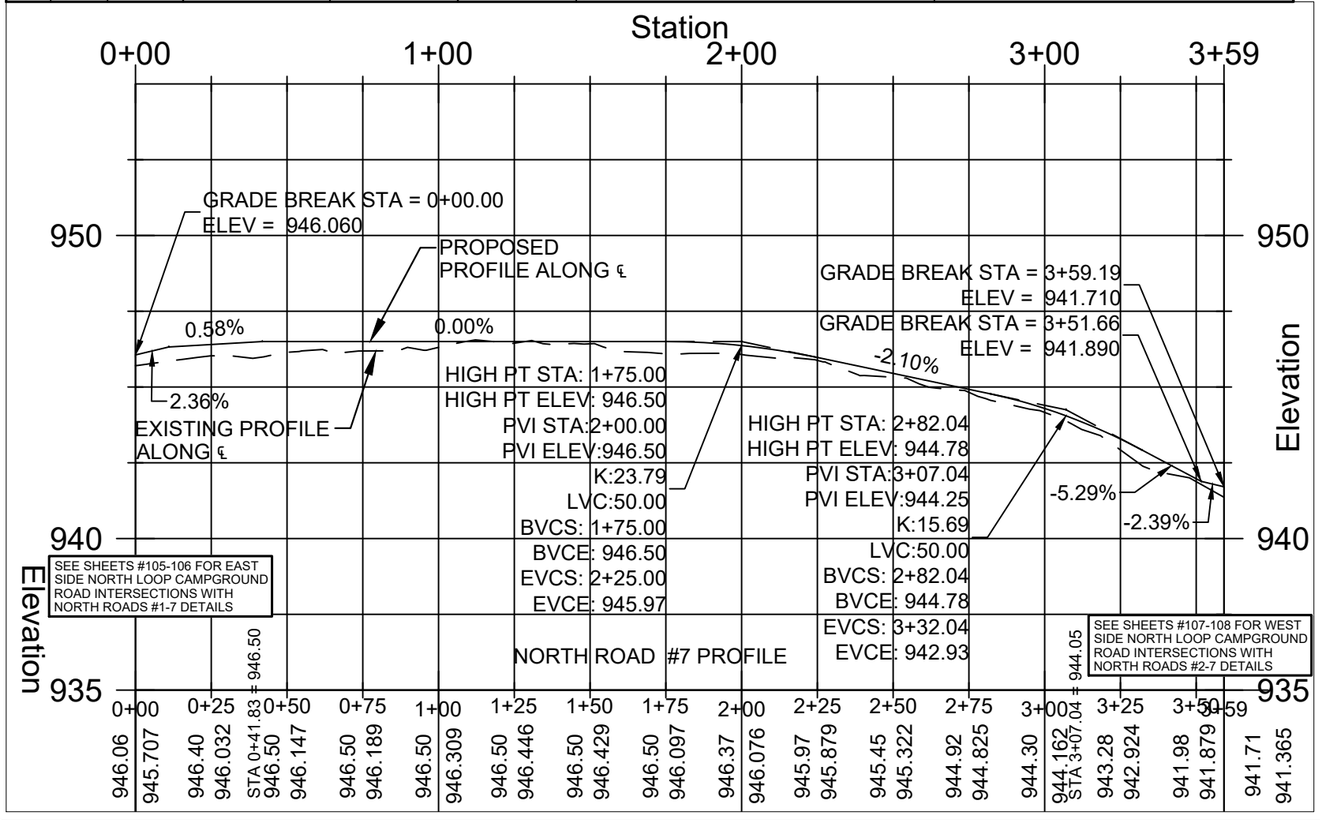
| NO. | BY / DATE | REVISION |
|---|---|---|

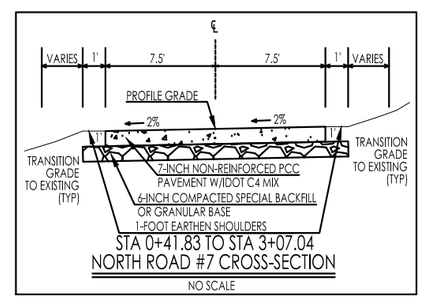
DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 116




| NORTH CAMPGROUND ROAD #7 | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Type | Length | Direction | Start Station | End Station | Start Point | End Point |
| 1 | Line | 359.19' | N81° 56' 35"W | 0+00.00' | 3+59.19' | (1615282.8492',472721.3262',0.0000') | (1614927.2010',472771.6691',0.0000') |




| PROPOSED PROFILE GRADE NORTH ROAD #7 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 946.06' | | 2.36% | | | | |
| 2 | 0+11.02' | 946.32' | 2.36% | 0.58% | 1.78% | | | |
| 3 | 0+41.83' | 946.50' | 0.58% | 0.00% | 0.58% | | | |
| 4 | 2+00.00' | 946.50' | 0.00% | -2.10% | 2.10% | Crest | 50.00' | 23.787 |
| 5 | 3+07.04' | 944.25' | -2.10% | -5.29% | 3.19% | Crest | 50.00' | 15.686 |
| 6 | 3+51.66' | 941.89' | -5.29% | -2.39% | 2.90% | | | |
| 7 | 3+59.19' | 941.71' | -2.39% | | | | | |

CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

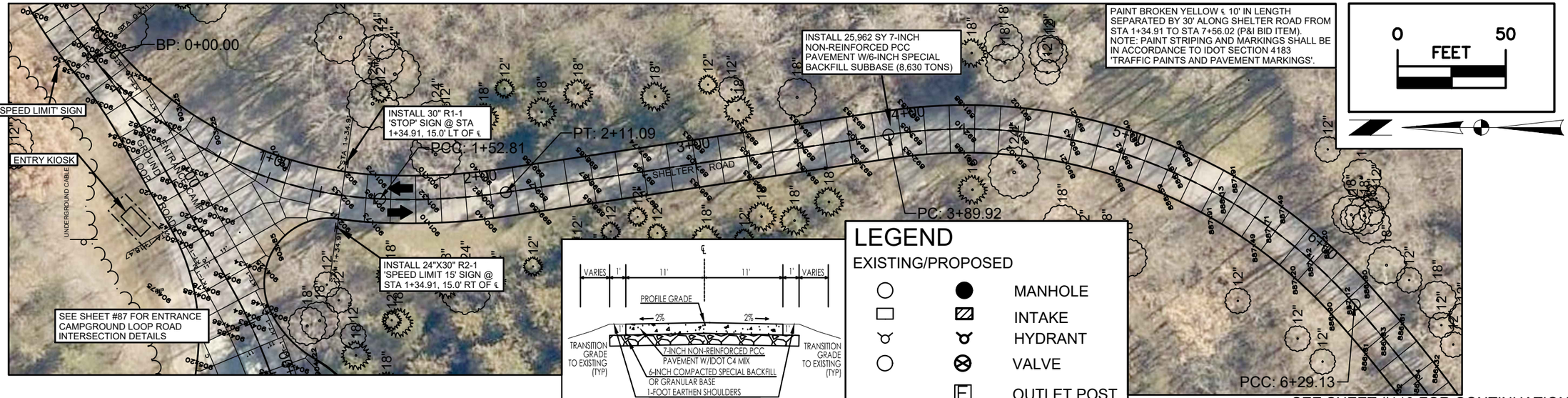
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

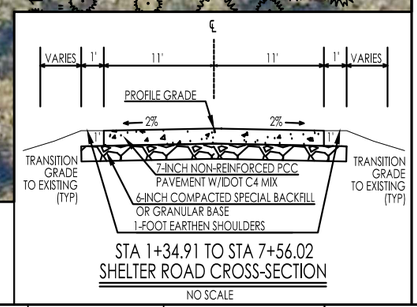
PAVING PLAN NORTH ROAD #7

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY | DATE | REVISION |
|---|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 117



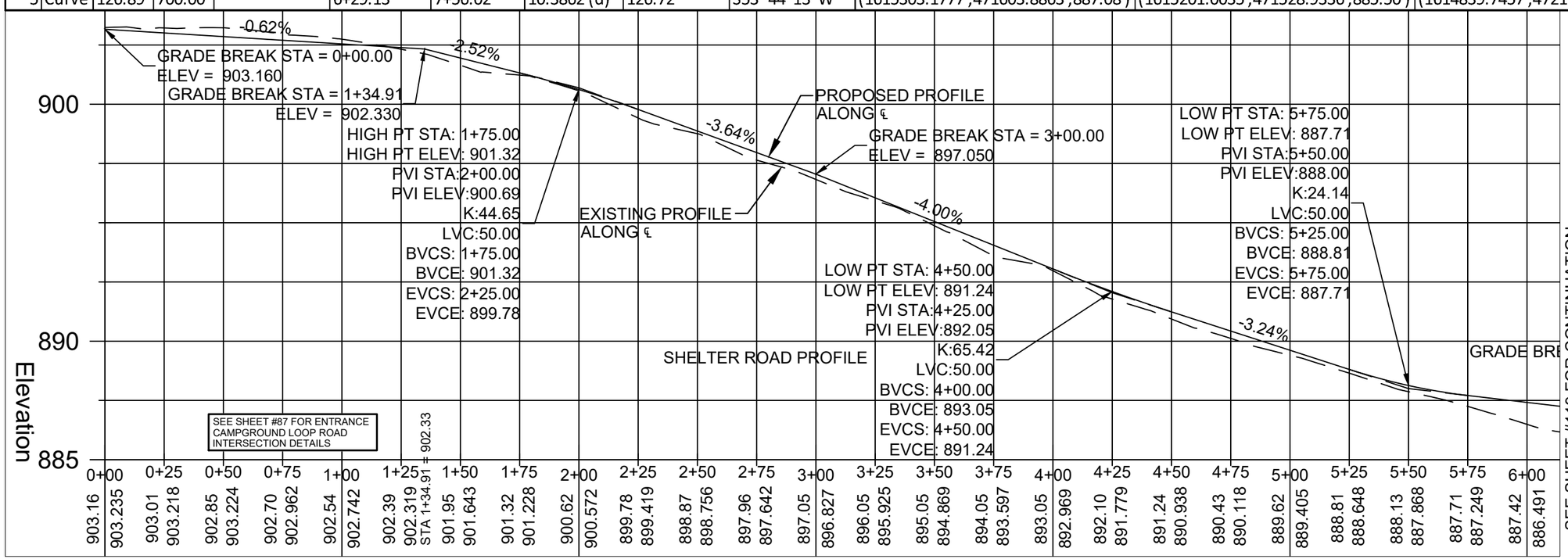

STA 1+34.91 TO STA 7+56.02
SHELTER ROAD CROSS-SECTION
NO SCALE

## LEGEND

EXISTING/PROPOSED

- MANHOLE
- INTAKE
- HYDRANT
- VALVE
- OUTLET POST
- PP/LP — PP/LP — POWER POLE/ LIGHT POLE

| SHELTER ROAD | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Curve | 152.81' | 185.00' | | 0+00.00' | 1+52.81' | 47.3261 (d) | 148.50' | S26° 13' 55"W | (1615417.5870',472187.6444',903.16') | (1615351.9484',472054.4360',901.88') | (1615536.7625',472046.1445') |
| 2 | Curve | 58.28' | 300.00' | | 1+52.81' | 2+11.09' | 11.1300 (d) | 58.18' | S2° 59' 46"E | (1615351.9484',472054.4360',901.88') | (1615354.9897',471996.3306',900.26') | (1615651.6469',472040.9904') |
| 3 | Line | 178.84' | | S8° 33' 40"E | 2+11.09' | 3+89.92' | | | | (1615354.9897',471996.3306',900.26') | (1615381.6125',471819.4853',893.45') | |
| 4 | Curve | 239.20' | 240.00' | | 3+89.92' | 6+29.13' | 57.1051 (d) | 229.42' | S19° 59' 29"W | (1615381.6125',471819.4853',893.45') | (1615303.1777',471603.8863',887.08') | (1615144.2867',471783.7576') |
| 5 | Curve | 126.89' | 700.00' | | 6+29.13' | 7+56.02' | 10.3862 (d) | 126.72' | S53° 44' 13"W | (1615303.1777',471603.8863',887.08') | (1615201.0035',471528.9336',885.50') | (1614839.7457',472128.5108') |




CONSULTANT:

IOWA DEPARTMENT OF NATURAL RESOURCES

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

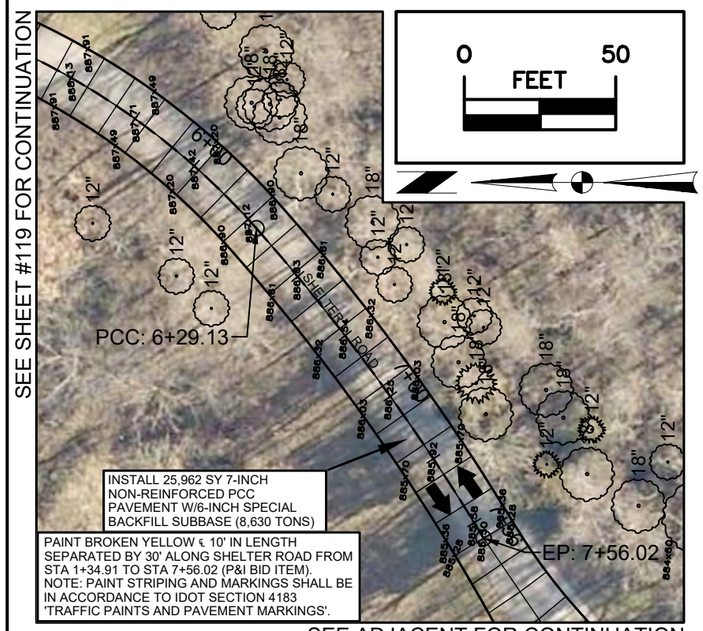
PAVING PLAN SHELTER ROAD

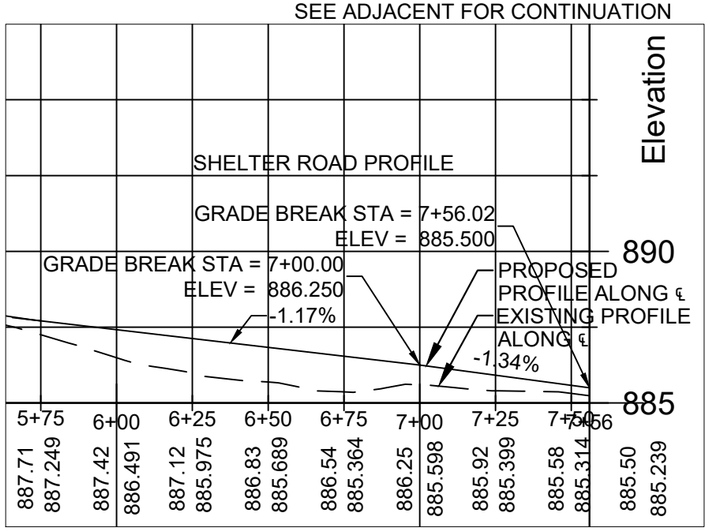
CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

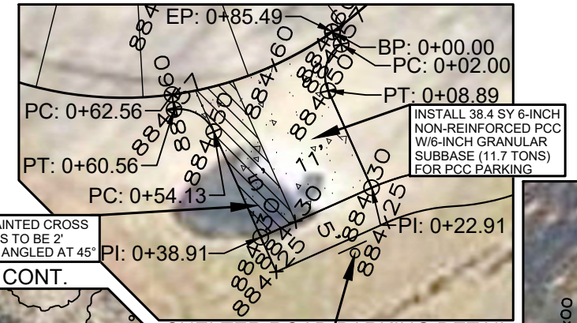
| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 118

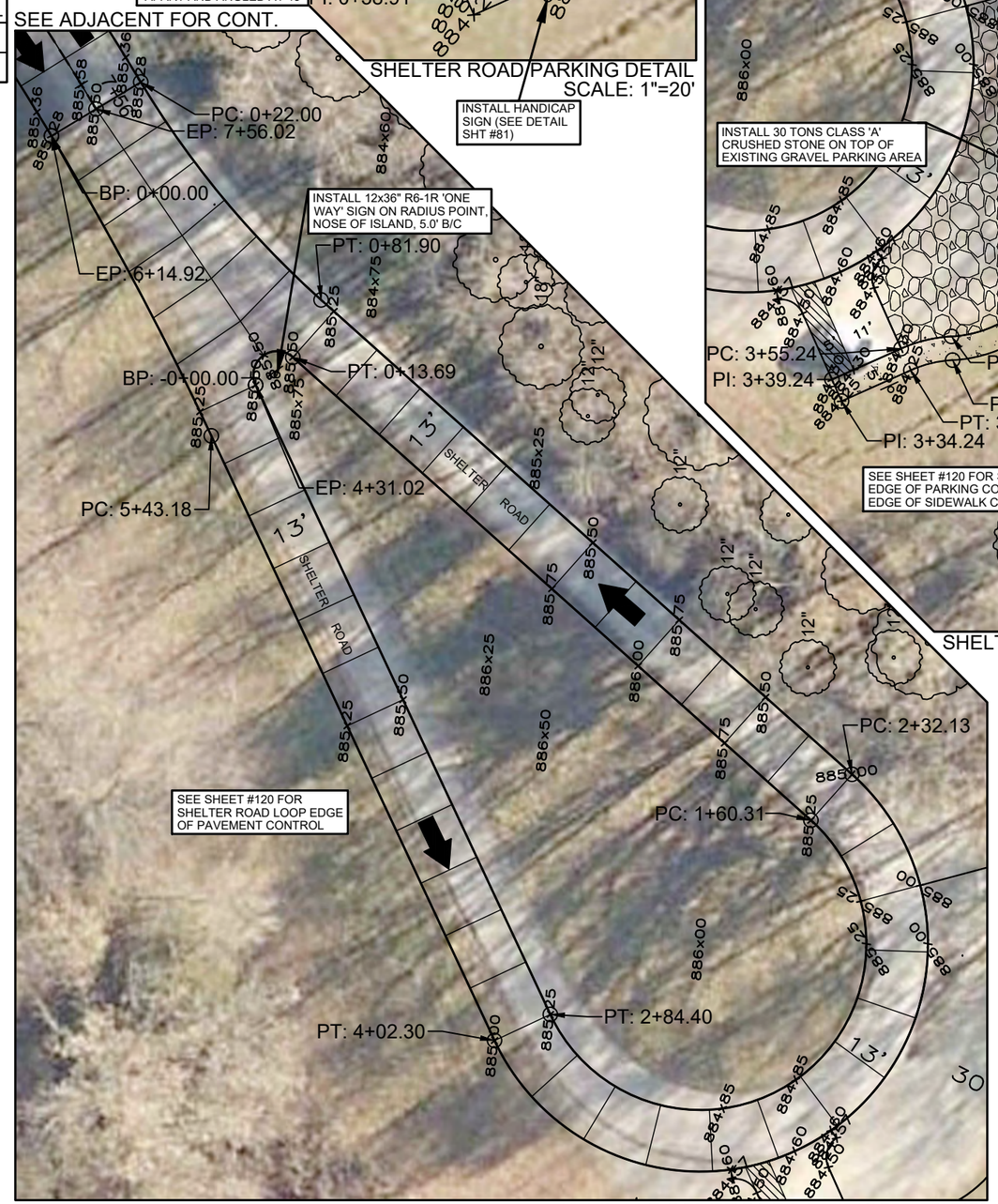
| PROPOSED PROFILE GRADE SHELTER ROAD | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. | PVI Sta | PVI Elev | % In | % Out | % DIFF | Type | Length | K Value |
| 1 | 0+00.00' | 903.16' | | -0.62% | | | | |
| 2 | 1+34.91' | 902.33' | -0.62% | -2.52% | 1.90% | | | |
| 3 | 2+00.00' | 900.69' | -2.52% | -3.64% | 1.12% | Crest | 50.00' | 44.646 |
| 4 | 3+00.00' | 897.05' | -3.64% | -4.00% | 0.36% | | | |
| 5 | 4+25.00' | 892.05' | -4.00% | -3.24% | 0.76% | Sag | 50.00' | 65.418 |
| 6 | 5+50.00' | 888.00' | -3.24% | -1.17% | 2.07% | Sag | 50.00' | 24.141 |
| 7 | 7+00.00' | 886.25' | -1.17% | -1.34% | 0.17% | | | |
| 8 | 7+56.02' | 885.50' | -1.34% | | | | | |



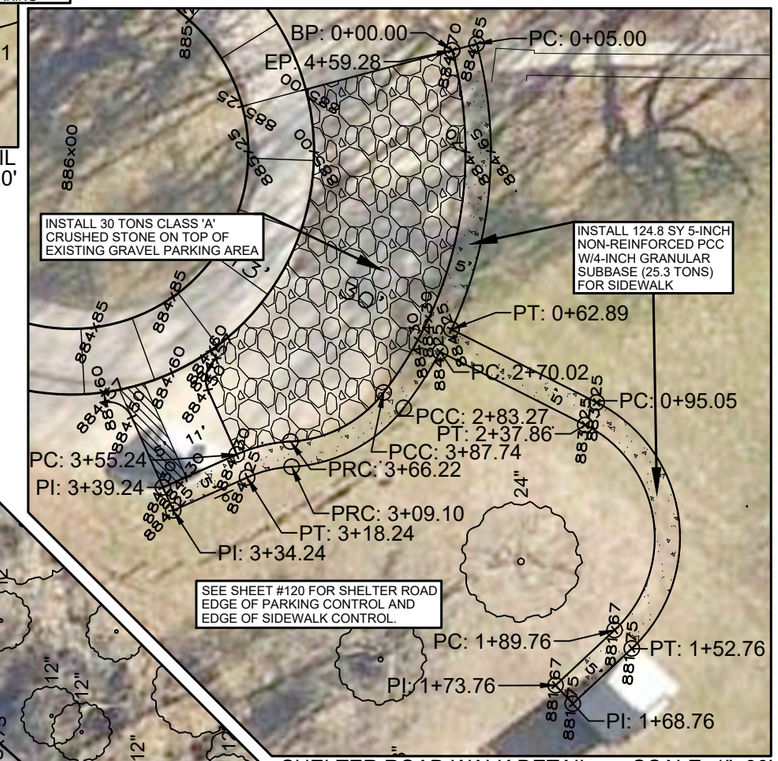




SHELTER ROAD PARKING DETAIL
SCALE: 1"=20'




SHELTER ROAD LOOP DETAIL SCALE: 1"=30'




SHELTER ROAD WALK DETAIL SCALE: 1"=30'

NOTE: ADJUST SIDEWALK ALIGNMENT AS NECESSARY TO ALIGN WITH FRONT OF RESTROOM BUILDING. MATCH ELEVATIONS OF RESTROOM BUILDING. SLOPE SIDEWALK AWAY FROM BUILDING AT 1.5%.

## LEGEND

EXISTING/PROPOSED

| | | |
|---|---|---|
| ○ | ● | MANHOLE |
| □ | ▨ | INTAKE |
| | | HYDRANT |
| ○ | ⊗ | VALVE |
| | | OUTLET POST |
| PP/LP | PP/LP | POWER POLE/ LIGHT POLE |

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

PAVING PLAN SHELTER ROAD

CONSTRUCTION PROJECT FOR:

LAKE AHQUABI CAMPGROUND UPGRADE PROJECT

WARREN COUNTY, IOWA

| NO. | BY DATE | REVISION |
|---|---|---|

DRAWN BY: | PROJECT NUMBER: 22-05-91-01

CHK'D BY: | DATE: 12/29/2021

SHEET No: 119

| OUTSIDE EDGE OF SHELTER ROAD LOOP | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 22.00' | | S31° 04' 11"E | 0+00.00' | 0+22.00' | | | | (1615195.3265',471538.3555',855.28') | (1615206.6804',471519.5116',855.28') | |
| 2 | Curve | 59.90' | 200.00' | | 0+22.00' | 0+81.90' | 17.1615 (d) | 59.68' | S50° 20' 58"W | (1615206.6804',471519.5116',855.28') | (1615160.7288',471481.4288',885.25') | (1615309.8969',471348.2039') |
| 3 | Line | 150.22' | | S41° 46' 07"W | 0+81.90' | 2+32.13' | | | | (1615160.7288',471481.4288',885.25') | (1615060.6610',471369.3859',885.00') | |
| 4 | Curve | 170.17' | 48.00' | | 2+32.13' | 4+02.30' | 203.1269 (d) | 94.05' | N36° 40' 04"W | (1615060.6610',471369.3859',885.00') | (1615004.4958',471444.8256',885.00') | (1615024.8607',471401.3599') |
| 5 | Line | 140.88' | | N64° 53' 44"E | 4+02.30' | 5+43.18' | | | | (1615004.4958',471444.8256',885.00') | (1615132.0673',471504.5964',885.25') | |
| 6 | Curve | 71.74' | 689.00' | | 5+43.18' | 6+14.92' | 5.9654 (d) | 71.70' | N61° 54' 46"E | (1615132.0673',471504.5964',885.25') | (1615195.3265',471538.3555',855.28') | (1614839.7457',472128.5108') |
| INSIDE EDGE OF SHELTER ROAD LOOP | | | | | | | | | | | | |
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Curve | 13.69' | 5.00' | | 0+00.00' | 0+13.69' | 156.8731 (d) | 9.80' | S36° 40' 04"E | (1615142.7840',471495.2614',885.50') | (1615148.6345',471487.4031',885.25') | (1615144.9053',471490.7337') |
| 2 | Line | 146.62' | | S41° 46' 07"W | 0+13.69' | 1+60.31' | | | | (1615148.6345',471487.4031',885.25') | (1615050.9651',471378.0455',885.25') | |
| 3 | Curve | 124.08' | 35.00' | | 1+60.31' | 2+84.40' | 203.1269 (d) | 68.58' | N36° 40' 04"W | (1615050.9651',471378.0455',885.25') | (1615010.0113',471433.0536',885.50') | (1615024.8607',471401.3599') |
| 4 | Line | 146.62' | | N64° 53' 44"E | 2+84.40' | 4+31.02' | | | | (1615010.0113',471433.0536',885.50') | (1615142.7840',471495.2614',885.50') | |

| OUTSIDE EDGE OF SHELTER ROAD PARKING AREA | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 2.00' | | S54° 57' 47"W | 0+00.00' | 0+02.00' | | | | (1614985.5592',471373.8028',884.60') | (1614983.9216',471372.6546',884.57') | |
| 2 | Curve | 6.89' | 5.00' | | 0+02.00' | 0+08.89' | 78.9942 (d) | 6.36' | N74° 32' 02"W | (1614983.9216',471372.6546',884.57') | (1614977.7915',471374.3507',884.50') | (1614979.8277',471369.7841') |
| 3 | Line | 14.01' | | S65° 58' 08"W | 0+08.89' | 0+22.91' | | | | (1614977.7915',471374.3507',884.50') | (1614964.9944',471368.6448',884.30') | |
| 4 | Line | 16.00' | | N24° 01' 52"W | 0+22.91' | 0+38.91' | | | | (1614964.9944',471368.6448',884.30') | (1614958.4787',471383.2580',884.30') | |
| 5 | Line | 15.23' | | N65° 58' 08"E | 0+38.91' | 0+54.13' | | | | (1614958.4787',471383.2580',884.30') | (1614972.3880',471389.4598',884.50') | |
| 6 | Curve | 6.43' | 5.00' | | 0+54.13' | 0+60.56' | 73.6313 (d) | 5.99' | N29° 09' 12"E | (1614972.3880',471389.4598',884.50') | (1614975.3071',471394.6931',884.57') | (1614970.3518',471394.0264') |
| 7 | Line | 2.00' | | N82° 20' 16"E | 0+60.56' | 0+62.56' | | | | (1614975.3071',471394.6931',884.57') | (1614977.2893',471394.9598',884.60') | |
| 8 | Curve | 22.93' | 48.00' | | 0+62.56' | 0+85.49' | 27.3746 (d) | 22.72' | S21° 20' 59"E | (1614977.2893',471394.9598',884.60') | (1614985.5592',471373.8028',884.60') | (1615024.8607',471401.3599') |

| OUTSIDE EDGE OF SHELTER ROAD SIDEWALK AREA | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Length | Radius | Direction | Start Station | End Station | Delta angle | Chord length | Chord Direction | Start Point | End Point | Center Point |
| 1 | Line | 5.00' | | S14° 56' 45"E | 0+00.00' | 0+05.00' | | | | (1615044.9774',471325.9986',884.70') | (1615046.2670',471321.1678',884.65') | |
| 2 | Curve | 57.89' | 83.00' | | 0+05.00' | 0+62.89' | 39.9589 (d) | 56.72' | N84° 57' 59"W | (1615046.2670',471321.1678',884.65') | (1614989.7664',471326.1443',884.25') | (1615024.8607',471401.3599') |
| 3 | Line | 32.17' | | S26° 44' 20"W | 0+62.89' | 0+95.05' | | | | (1614989.7664',471326.1443',884.25') | (1614975.2933',471297.4165',883.25') | |
| 4 | Curve | 57.71' | 30.00' | | 0+95.05' | 1+52.76' | 110.2206 (d) | 49.22' | S81° 50' 58"W | (1614975.2933',471297.4165',883.25') | (1614926.5751',471290.4389',881.75') | (1614948.5013',471310.9143') |
| 5 | Line | 16.00' | | N43° 02' 25"W | 1+52.76' | 1+68.76' | | | | (1614926.5751',471290.4389',881.75') | (1614915.6549',471302.1329',881.75') | |
| 6 | Line | 5.00' | | N46° 57' 35"E | 1+68.76' | 1+73.76' | | | | (1614915.6549',471302.1329',881.75') | (1614919.3093',471305.5454',881.67') | |
| 7 | Line | 16.00' | | S43° 02' 25"E | 1+73.76' | 1+89.76' | | | | (1614919.3093',471305.5454',881.67') | (1614930.2295',471293.8515',881.67') | |
| 8 | Curve | 48.09' | 25.00' | | 1+89.76' | 2+37.86' | 110.2206 (d) | 41.01' | N81° 50' 58"E | (1614930.2295',471293.8515',881.67') | (1614970.8279',471299.6661',883.25') | (1614948.5013',471310.9143') |
| 9 | Line | 32.17' | | N26° 44' 20"E | 2+37.86' | 2+70.02' | | | | (1614970.8279',471299.6661',883.25') | (1614985.3010',471328.3939',884.25') | |
| 10 | Curve | 13.25' | 83.00' | | 2+70.02' | 2+83.27' | 9.1449 (d) | 13.23' | N56° 57' 45"W | (1614985.3010',471328.3939',884.25') | (1614974.2072',471335.6086',884.25') | (1615024.8607',471401.3599') |
| 11 | Curve | 25.82' | 30.00' | | 2+83.27' | 3+09.10' | 49.3192 (d) | 25.03' | N27° 43' 49"W | (1614974.2072',471335.6086',884.25') | (1614962.5588',471357.7670',884.25') | (1614992.5157',471359.3741') |
| 12 | Curve | 9.15' | 25.00' | | 3+09.10' | 3+18.24' | 20.9603 (d) | 9.09' | N13° 33' 03"W | (1614962.5588',471357.7670',884.25') | (1614960.4278',471366.6086',884.25') | (1614937.5947',471356.4278') |
| 13 | Line | 16.00' | | N24° 01' 52"W | 3+18.24' | 3+34.24' | | | | (1614960.4278',471366.6086',884.25') | (1614953.9121',471381.2218',884.25') | |
| 14 | Line | 5.00' | | N65° 58' 08"E | 3+34.24' | 3+39.24' | | | | (1614953.9121',471381.2218',884.25') | (1614958.4787',471383.2580',884.30') | |
| 15 | Line | 16.00' | | S24° 01' 52"E | 3+39.24' | 3+55.24' | | | | (1614958.4787',471383.2580',884.30') | (1614964.9944',471368.6448',884.30') | |
| 16 | Curve | 10.97' | 30.00' | | 3+55.24' | 3+66.22' | 20.9603 (d) | 10.91' | S13° 33' 03"E | (1614964.9944',471368.6448',884.30') | (1614967.5516',471358.0349',884.30') | (1614937.5947',471356.4278') |
| 17 | Curve | 21.52' | 25.00' | | 3+66.22' | 3+87.74' | 49.3192 (d) | 20.86' | S27° 43' 49"E | (1614967.5516',471358.0349',884.30') | (1614977.2586',471339.5696',884.30') | (1614992.5157',471359.3741') |
| 18 | Curve | 71.55' | 78.00' | | 3+87.74' | 4+59.28' | 52.5559 (d) | 69.07' | S78° 40' 05"E | (1614977.2586',471339.5696',884.30') | (1615044.9774',471325.9986',884.70') | (1615024.8607',471401.3599') |

CONSULTANT:


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


PAVING PLAN SHELTER ROAD

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 120

R2-1
SPEED LIMIT (ENGLISH)

*Optically space numerals about centerline

| | A | B | C | D | E | F | G | H | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 18 | 24 | .375 | .625 | 3 | 3 E | 2 | 8 E | 7.188 | 5.5 | 1.5 |
| C | 24 | 30 | .375 | .625 | 4 | 4 E | 2 | 10 E | 9.563 | 7.313 | 1.5 |
| | 36 | 48 | .625 | .875 | 6 | 6 E | 5 | 14 E | 14.375 | 11 | 2.25 |
| | 48 | 60 | .75 | 1.25 | 8 | 8 E | 6 | 16 E | 19.125 | 14.625 | 3 |

SIGNAGE QUANTITIES
3 EA R2-1 24"x30" 'SPEED LIMIT 15' SIGN
16 EA R1-1 'STOP' SIGN
10 EA R5-1 'DO NOT ENTER' SIGN
8 EA R6-1L 'ONE WAY' LEFT SIGN
1 EA R6-1R 'ONE WAY' RIGHT SIGN
4 EA 12"x18" 'SLOW-STEEP GRADE AHEAD' (K-5750)
IN 3M DIAMOND GRADE FLUORESCENT YELLOW

SEE SHEETS #81-120 FOR SIGN LOCATIONS.

CONSULTANT:

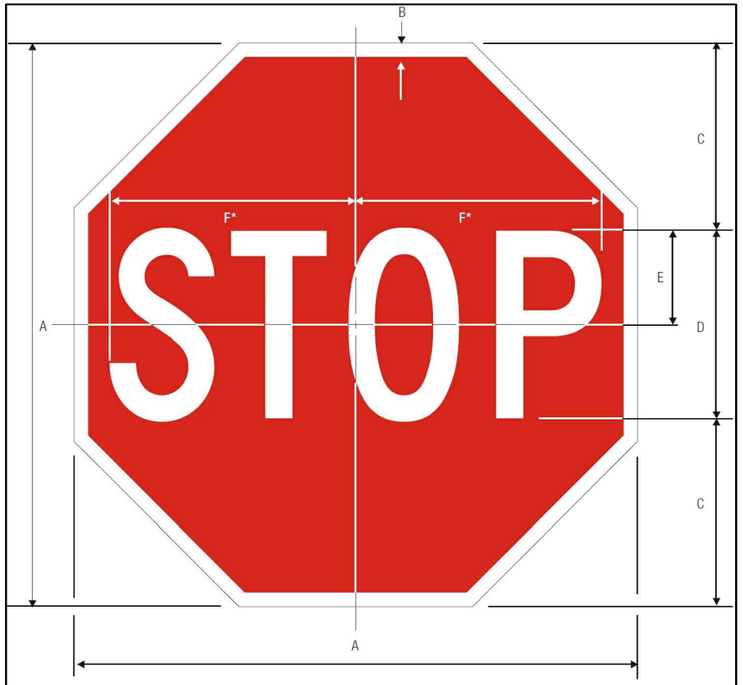
IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

SIGNAGE DETAILS

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 121

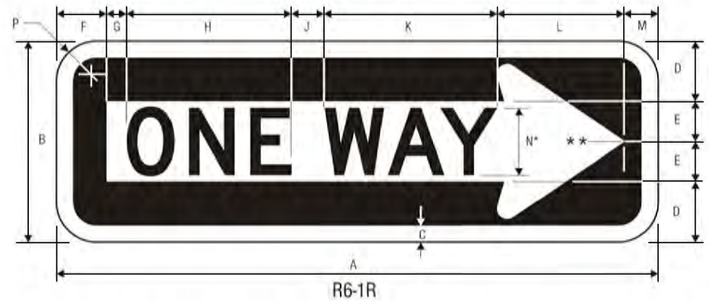



R1-1
STOP

*Reduce spacing 40%

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 30 | .75 | 10 | 10 C | 5 | 12.5 |

COLORS: LEGEND – WHITE (RETROREFLECTIVE)
BACKGROUND – RED (RETROREFLECTIVE)

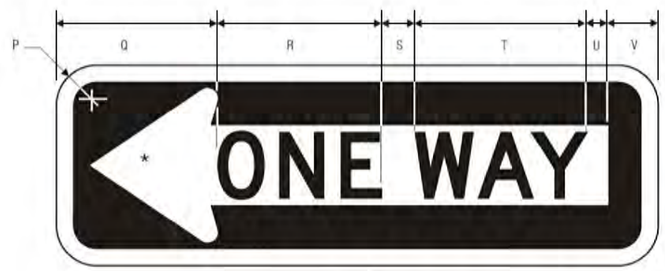



R6-1R
ONE WAY

| A | B | C | D | E | F | G | H | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | 12 | .5 | 3.375 | 2.625 | 3 | 1.25 | 9.125 | 2 | 9.625 | 9 | 2 |

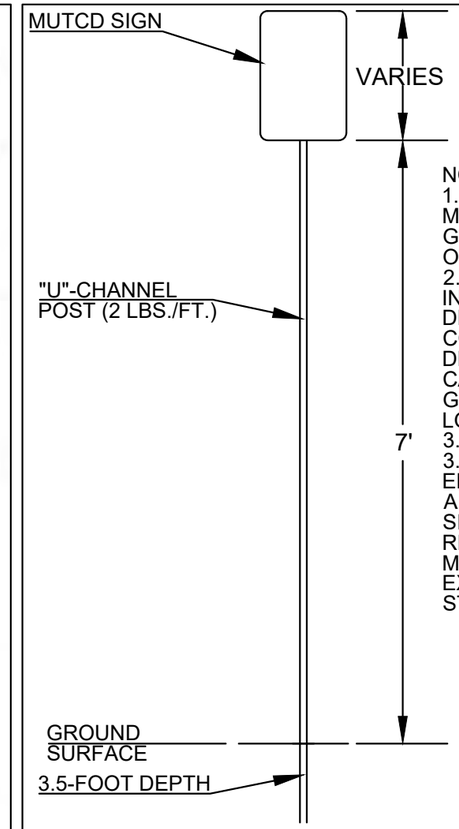
| N | P | Q | R | S | T | U | V |
|---|---|---|---|---|---|---|---|
| 4 D | 1.5 | 11 | 9.125 | 2 | 9.625 | 1.25 | 3 |

*Series 2000 Standard Alphabets.
**See page 6-2 for arrow design.




R6-1L
ONE WAY

COLORS: LEGEND – BLACK
BACKGROUND – BLACK
ARROW – WHITE (RETROREFLECTIVE)




NOTES
1. SIGNS SHALL BE MOUNTED 7' FROM FINISH GRADE TO BOTTOM EDGE OF SIGN FACE.
2. SIGNAGE FOR TO BE INSTALLED AT LOCATIONS DESIGNATED IN THE CONSTRUCTION DRAWINGS. "U" CHANNEL CAN BE DRIVEN INTO GROUND AT SAID LOCATION TO A DEPTH OF 3.5 FEET.
3. ALL SIGNAGE SHALL BE ENGINEER GRADE .080 ALUMINUM REFLECTIVE SIGN MEETING THE REQUIREMENTS OF THE MUTCD AND ADAAG EXCEPT FOR THE 'SLOW STEEP GRADE SIGN'.

## SIGN DETAIL
NOT TO SCALE

CONSULTANT:

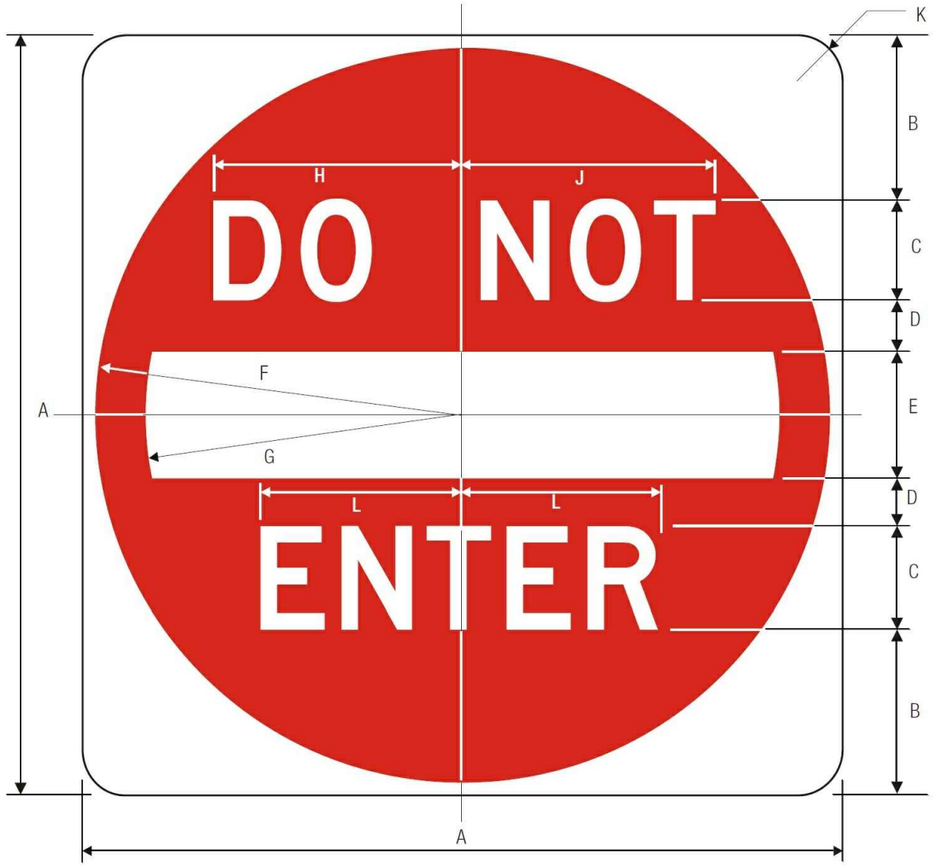
IOWA DEPARTMENT OF NATURAL RESOURCES
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034

SIGNAGE DETAILS

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

DRAWN BY:
CHK'D BY:
PROJECT NUMBER: 22-05-91-01
DATE: 12/29/2021
SHEET No: 122




R5-1
DO NOT ENTER

| A | B | C | D | E | F | G | H | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 6.5 | 4 D | 2 | 5 | 14.5 | 12.5 | 9.75 | 10 | 1.875 | 7.875 |

COLORS: SYMBOL – RED (RETROREFLECTIVE)
LEGEND & BACKGROUND – WHITE (RETROREFLECTIVE)

12"x18" 'SLOW-STEEP GRADE AHEAD' IN 3M DIAMOND GRADE
FLUORESCENT YELLOW
ROAD TRAFFIC SIGNS COMPANY (K-5750) (OR APPROVED EQUAL)

CONSULTANT:

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

SIGNAGE DETAILS

CONSTRUCTION PROJECT FOR:
LAKE AHQUABI CAMPGROUND UPGRADE PROJECT
WARREN COUNTY, IOWA

| NO. | BY / DATE | REVISION |
|---|---|---|

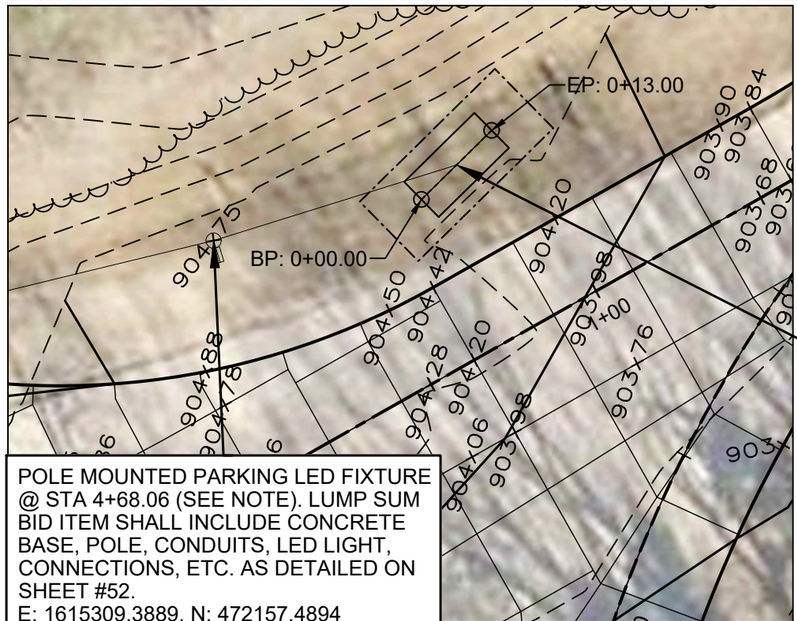
DRAWN BY:
PROJECT NUMBER: 22-05-91-01
CHK'D BY:
DATE: 12/29/2021
SHEET No: 123

# GENERAL NOTES

A. FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
B. WOOD ROOF DECKING TO RECEIVE TWO (2) COATS OF CLEAR GLOSS, UV RESISTANT, POLYURETHANE.
C. REFER TO SITE PLAN FOR MORE INFORMATION.
D. ALL BOLTS, NUTS, WASHERS TO BE HOT DIP GALVANIZED, ALL WASHERS TO BE LOCK-WASHERS. SCREWS TO BE TRIPLE-COATED DECKING SCREWS.
E. SLOPE SLAB TO DRAIN 1%.
F. CONTRACTOR TO RESTORE ALL DISTURBED AREAS OF CONSTRUCTION.

# KEYNOTES

1. 8X8 CEDAR-TONE TREATED LUMBER COLUMNS.
2. 6" THICK 4000PSI CONCRETE SLAB WITH #4 REBAR 24" O.C. BOTH DIRECTIONS AND 6" SUBBASE WITH 12" X 12" THICKENED SLAB EDGE WITH TWO (2) #4 REBAR RUNNING CONTINUOUSLY THE PERIMETER OF THE SLAB. SLOPE CONCRETE (1% SLOPE) WITH LIGHT BROOM FINISH.
3. 12" X 12" 4000 PSI CONCRETE COLUMN FOOTING WITH #4 REBAR LADDER, 48" DEEP MINIMUM. TOP OF FOOTING TO EXTEND, 1" MINIMUM, ABOVE SLAB HEIGHT FOR WATER DRAINAGE. TOP EDGE OF FOOTING TO BE 1" RADIUS ROUNDED, AS SHOWN.
4. ½" CONTINUOUS PERIMETER EXPANSION JOINT WITH SELF-LEVELING URETHANE SEALANT, COLOR TO BE GRAY.
5. CONCRETE CONTROL JOINTS (SAW CUTS).
6. 8X6 CEDAR-TONE TREATED LUMBER TRUSS CHORD.
7. 8X4 CEDAR-TONE TREATED LUMBER TRUSS WEB.
8. 2X6 T&G ROOF DECKING, TWO COATS OF CLEAR GLOSS EXTERIOR GRADE (UV RESISTANT) POLYURETHANE WITH SELF-ADHERED WATER AND ICE OVER ENTIRE ROOF. NEW CERTAINTEED LANDMARK PREMIUM SHINGLES (WEATHERED WOOD). DRIP EDGE TO BE DARK BRONZE.
9. 1X8 CEDAR-TONE TREATED FASCIA.
10. ⅜" STEEL CONNECTOR PLATE BRACKET, BOTH SIDES OF TRUSS, POWDER-COAT PLATES BLACK PRIOR TO INSTALLATION.
11. ½" DIAMETER HOT DIP GALVANIZED HEX-HEAD BOLTS WITH NUTS AND LOCK WASHERS.
12. ½" GRADE A36 STEEL COLUMN LEVELING PLATE WITH ANCHORS, EMBED 24" MINIMUM WITH 1" DIAMETER, HOT-DIPPED GALVANIZED ALL-THREAD. POWDER-COAT EXPOSED PLATES BLACK PRIOR TO INSTALLATION. REFER TO 02/A-101 FOR MORE INFORMATION.
13. 2X6 T&G DECKING, TWO COATS OF CLEAR GLOSS EXTERIOR GRADE (UV RESISTANT) POLYURETHANE. CONNECT TO COLUMNS WITH 3X2X$\frac{3}{16}$ ANGLE IRON AND LAG BOLTS. MOUNT 2'-0" ABOVE CONCRETE SLAB, CENTER ON COLUMN. HEIGHT OF T&G SHALL BE 7'-0" A.F.F. POWDER COAT ANGLE IRON PRIOR TO INSTALLATION.
14. 2X8 CEDAR-TONE TREATED BOARD SUPPORTED BY 2 - 2X6 CEDAR-TONE TREATED BOARDS FOR WRITING COUNTER, AS SHOWN. MOUNT WITH TOP OF 2X8 3'-0" MAXIMUM FROM TOP OF FINISHED CONCRETE.




| ENTRY KIOSK CENTERLINE CONTROL LINE | | | | | | | |
|---|---|---|---|---|---|---|---|
| No. | Type | Length | Direction | Start Station | End Station | Start Point | End Point |
| 1 | Line | 13.00' | N45° 29' 01"E | 0+00.00' | 0+13.00' | (1615336.8120',472162.9111') | (1615346.0816',472172.0256') |

POLE MOUNTED PARKING LED FIXTURE @ STA 4+68.06 (SEE NOTE). LUMP SUM BID ITEM SHALL INCLUDE CONCRETE BASE, POLE, CONDUITS, LED LIGHT, CONNECTIONS, ETC. AS DETAILED ON SHEET #52.
E: 1615309.3889, N: 472157.4894
FINISH GRADE=904.75
TOP OF BASE=905.75

ENTRY KIOSK @ STA 5+01.64 (SEE KIOSK DETAIL SHEETS #125-127 FOR DETAILS). CONTRACTOR TO INSTALL LITHONIA LIGHTING CNY LED CANOPY LIGHT (MODEL #CNY LED P1 40K MVOLT DDB M4) WITH WOOD BLOCKING DUE TO PITCHED ROOF. INSTALL NEW METAL CONDUIT. LUMP SUM BID ITEM SHALL INCLUDE ANY NEW WIRING, CONDUITS, LED LIGHT, CONNECTIONS, ETC. SEE SHEET #52 FOR ELECTRICAL CIRCUIT #6 DETAILS.
E: 1615341.4468, N: 472167.4684
FINISH GRADE=904.35

0 20
FEET

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ENTRY KIOSK DETAILS

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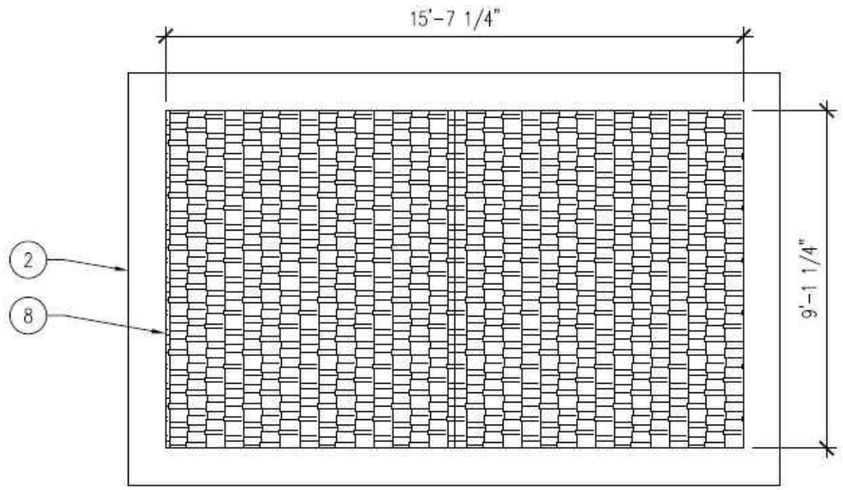
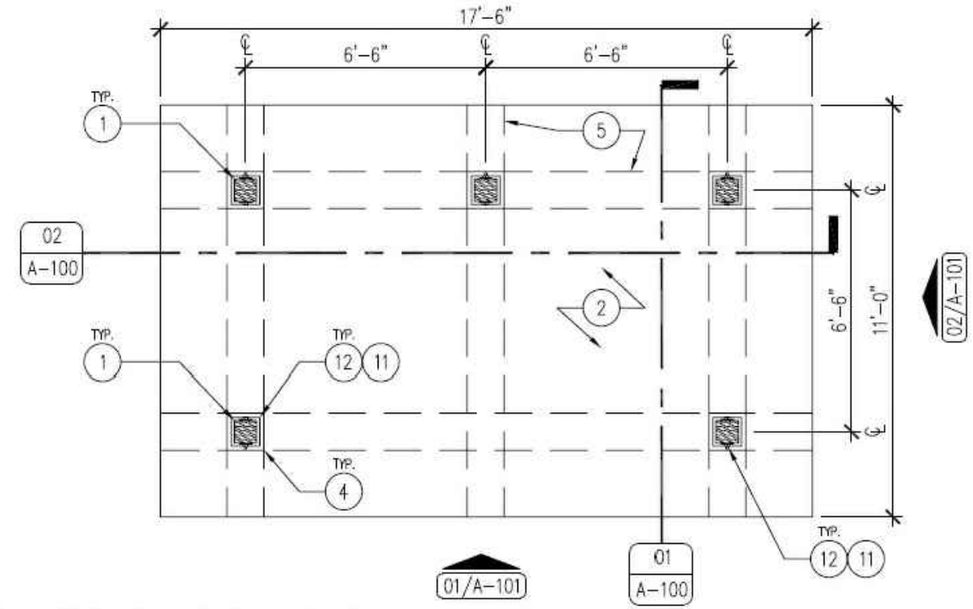
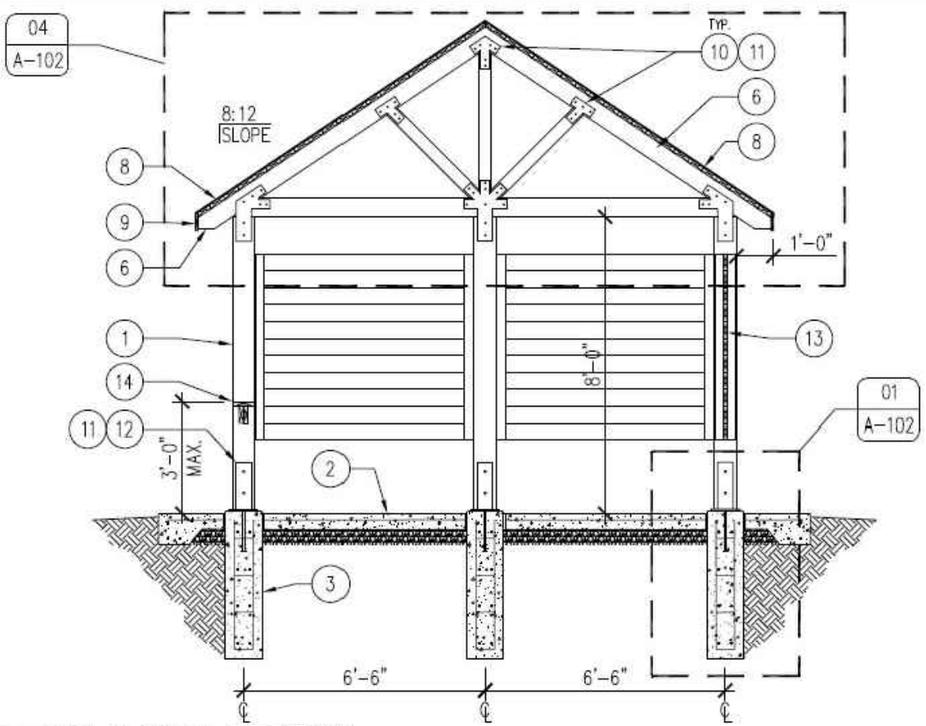


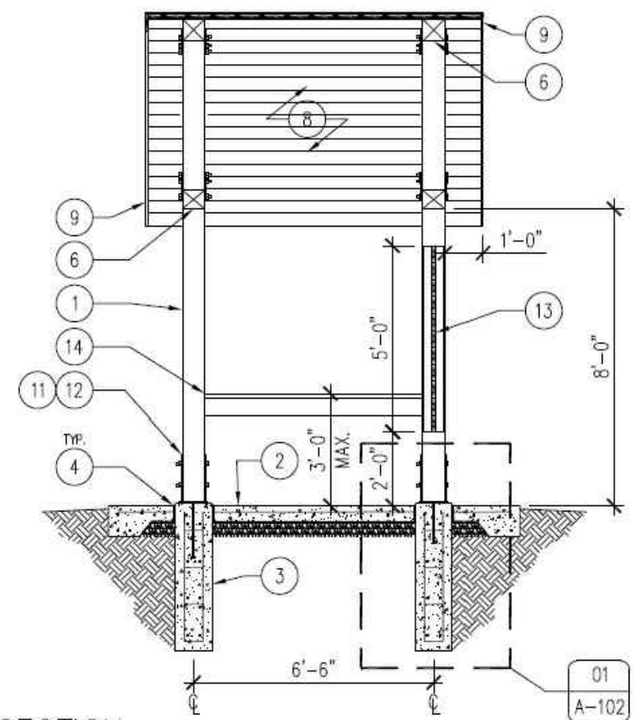

04 ROOF PLAN
SCALE: 1/4" = 1'-0"




03 REFERENCE FLOOR PLAN
SCALE: 1/4" = 1'-0"




02 BUILDING SECTION
SCALE: 1/4" = 1'-0"




01 BUILDING SECTION
SCALE: 1/4" = 1'-0"

CONSULTANT:

**IOWA DEPARTMENT OF NATURAL RESOURCES**

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

ENTRY KIOSK DETAILS

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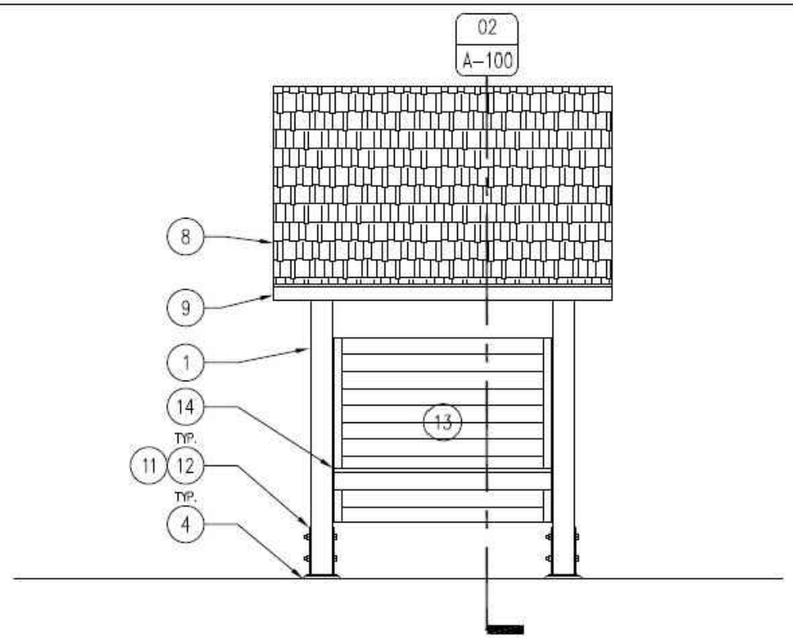
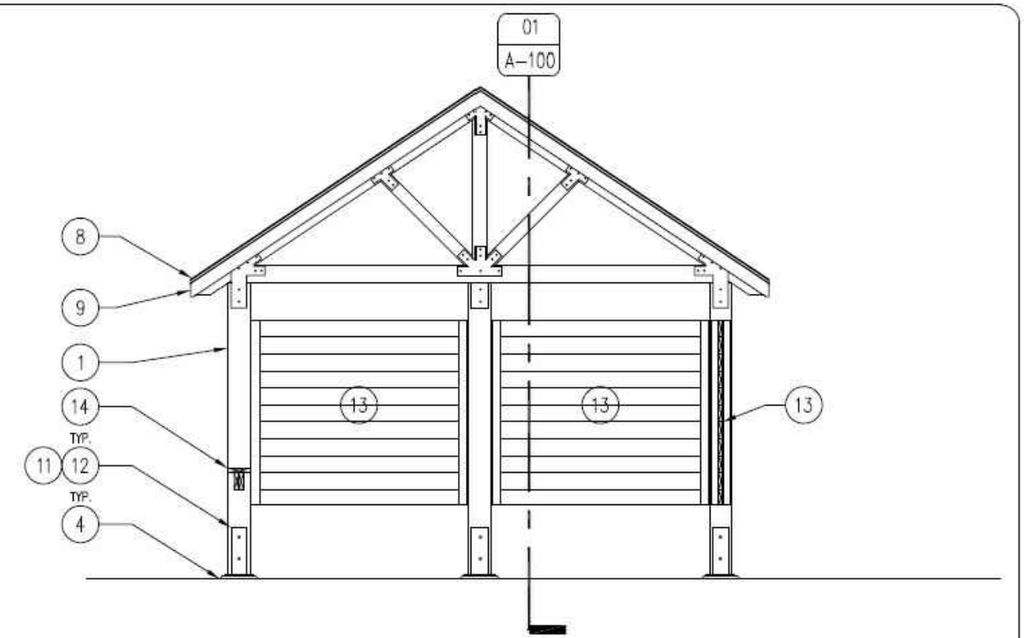
SHEET No: 125

04 NOT USED
SCALE: 1/4" = 1'-0"

03 NOT USED
SCALE: 1/4" = 1'-0"




02 BUILDING ELEVATION
SCALE: 1/4" = 1'-0"




01 BUILDING ELEVATION
SCALE: 1/4" = 1'-0"

CONSULTANT:

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ENTRY KIOSK DETAILS

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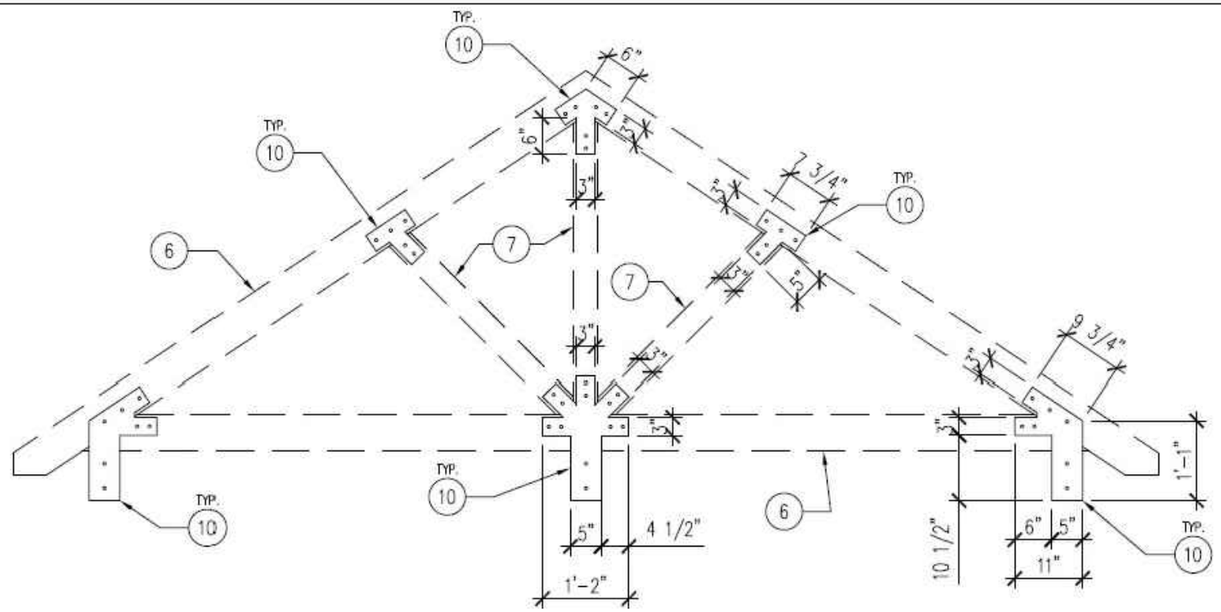
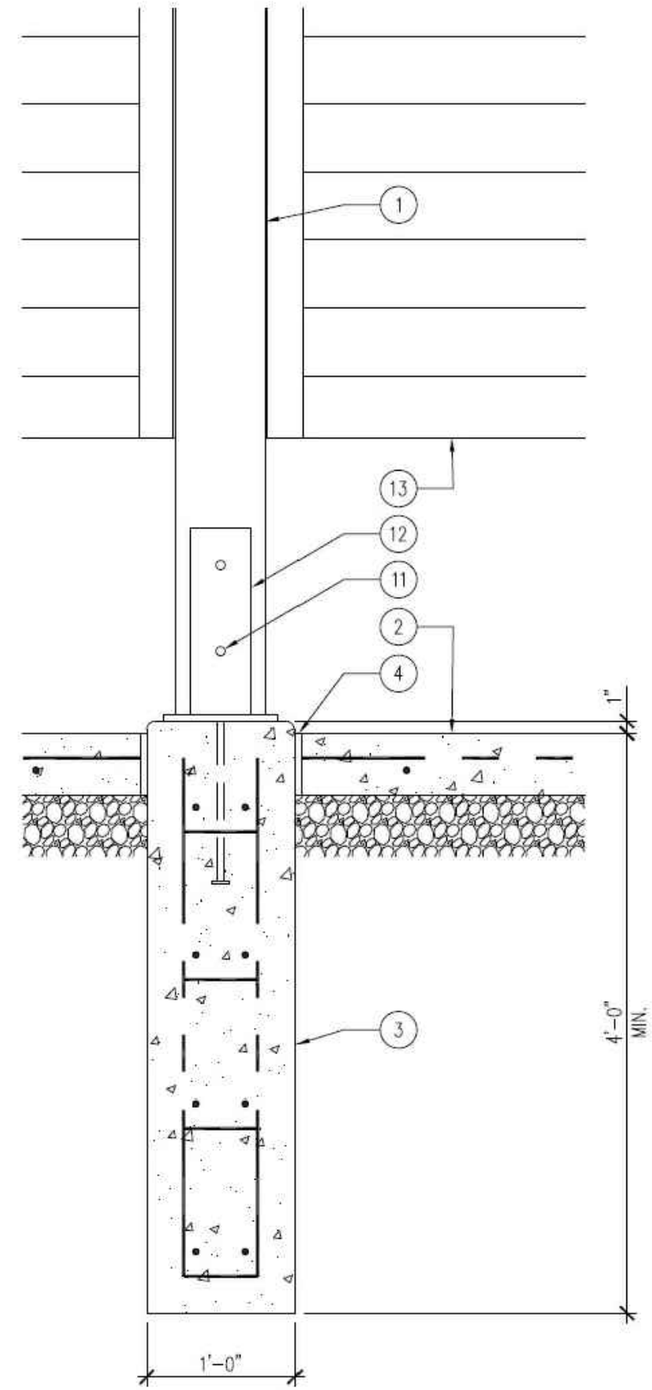
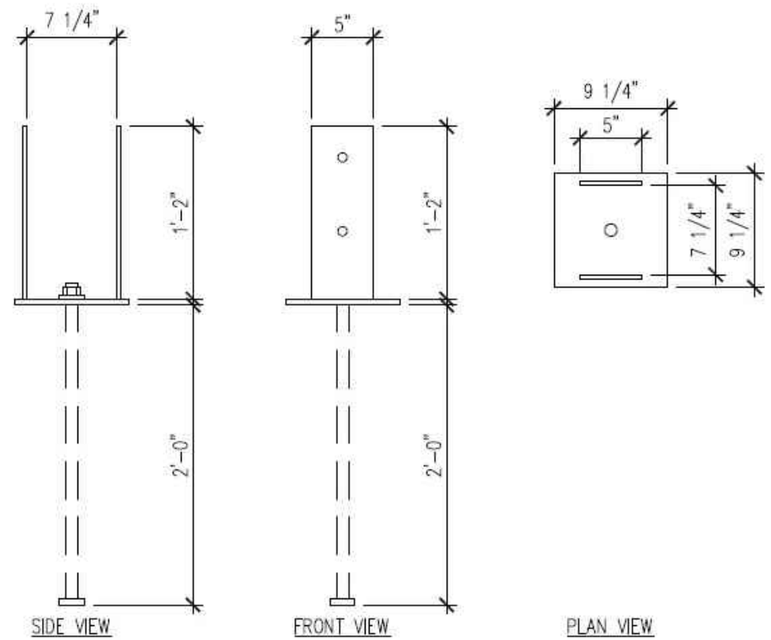



04 DETAIL – TRUSS CONNECTORS
SCALE: 1/2" = 1'-0"




01 DETAIL – FOOTING
SCALE: 1" = 1'-0"




02 DETAIL – COLUMN BASE PLATE
SCALE: 1" = 1'-0"

03 NOT USED
SCALE: 1" = 1'-0"

CONSULTANT:

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ENTRY KIOSK DETAILS

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