

GENERAL NOTES

THE LATEST EDITIONS OF THE FOLLOWING DOCUMENTS AND ANY SUPPLEMENTS THERETO, SHALL GOVERN ALL CONSTRUCTION ITEMS ON THIS PLAN UNLESS OTHERWISE NOTED.

- STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, 6TH EDITION (SSSWCW)
- THE WISCONSIN D.O.T. STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION
- MDNR STORMWATER RUNOFF TECHNICAL STANDARDS.
- WISDOT PAL APPROVED EROSION CONTROL MEASURES LIST, LATEST EDITION.
- VILLAGE OF HARTLAND STANDARDS & REQUIREMENTS FOR DEVELOPMENT, LATEST EDITION.

THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO MINIMIZE EROSION, WATER POLLUTION AND SILTATION CAUSED BY CONSTRUCTION OF THIS PROJECT. EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARDS.

EROSION CONTROL PLAN: PRIOR TO BEGINNING WORK, AN APPROVED EROSION CONTROL PLAN WILL BE PROVIDED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY IMPLEMENTING THE APPROVED PLAN.

THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATIONS OF THE BENCHMARKS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL ALSO FIELD VERIFY LOCATION, ELEVATION AND SIZE OF EXISTING UTILITIES, AND VERIFY FLOOR, CURB OR PAVEMENT ELEVATIONS WHERE MATCHING INTO EXISTING WORK. THE CONTRACTOR SHALL FIELD VERIFY HORIZONTAL CONTROL BY REFERENCING SHOWN COORDINATES TO KNOWN PROPERTY LINES. NOTIFY ENGINEER OF DISCREPANCIES IN EITHER VERTICAL OR HORIZONTAL CONTROL PRIOR TO PROCEEDING WITH WORK.

THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION (CALL DIGGERS HOTLINE AT 800-242-8511). COST OF REPLACEMENT OR REPAIR OF EXISTING UTILITIES DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY

EXISTING UTILITY INFORMATION IS SHOWN FROM SURVEY WORK, FIELD OBSERVATIONS, AVAILABLE PUBLIC RECORDS, AND AS-BUILT DRAWINGS. EXACT LOCATIONS AND ELEVATIONS OF UTILITIES SHALL BE DETERMINED PRIOR TO INSTALLING NEW WORK. EXCAVATE TEST PITS AS REQUIRED.

PROPERTY CORNERS SHALL BE CAREFULLY PROTECTED UNTIL THEY HAVE BEEN REFERENCED BY A PROFESSIONAL LAND SURVEYOR. PROPERTY MONUMENTS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

ENGINEER SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF PERFORMING ANY CONSTRUCTION.

ALL TRENCHING SHALL BE PERFORMED ACCORDING TO OSHA STANDARDS.

ALL ITEMS SHALL INCLUDE ALL THE NECESSARY MATERIALS AND LABOR TO COMPLETE THE ITEM IN PLACE.

THE CONTRACTOR SHALL CLEAN ALL ADJACENT STREETS OF ANY SEDIMENT OR DEBRIS AS REQUIRED BY MUNICIPAL ORDINANCE.

# LAKE COUNTRY LUTHERAN

## PRELIMINARY DEVELOPMENT PLANS

### CAMPUS DRIVE

### VILLAGE OF HARTLAND, WISCONSIN



#### VICINITY MAP

NOT TO SCALE

**DEVELOPER:**  
NEUMANN DEVELOPMENTS, INC.  
N27W24025 PAUL COURT, SUITE 100  
PEWAUKEE, WI 53072  
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#### SHEET INDEX

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**PROJECT:**  
**"EAST 50 ACRES" RESIDENTIAL DEVELOPMENT**  
**LAKE COUNTRY LUTHERAN LAND**  
**VILLAGE OF HARTLAND, WISCONSIN**  
**BY: NEUMANN DEVELOPMENTS, INC.**  
**N27W24025 PAUL COURT, SUITE 100**  
**PEWAUKEE, WI 53072**

#### REVISION HISTORY

| DATE     | DESCRIPTION           |
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| 03/08/20 | PLAN COMMISSION       |
| 04/10/20 | PRELIMINARY SUBMITTAL |
| 04/28/20 | REVISED SITE PLAN     |
| 06/08/20 | REVISED SITE PLAN     |
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#### DATE:

MAY 8, 2020

#### JOB NUMBER:

19023-953

#### DESCRIPTION:

**COVER SHEET**

#### SHEET

**T1**

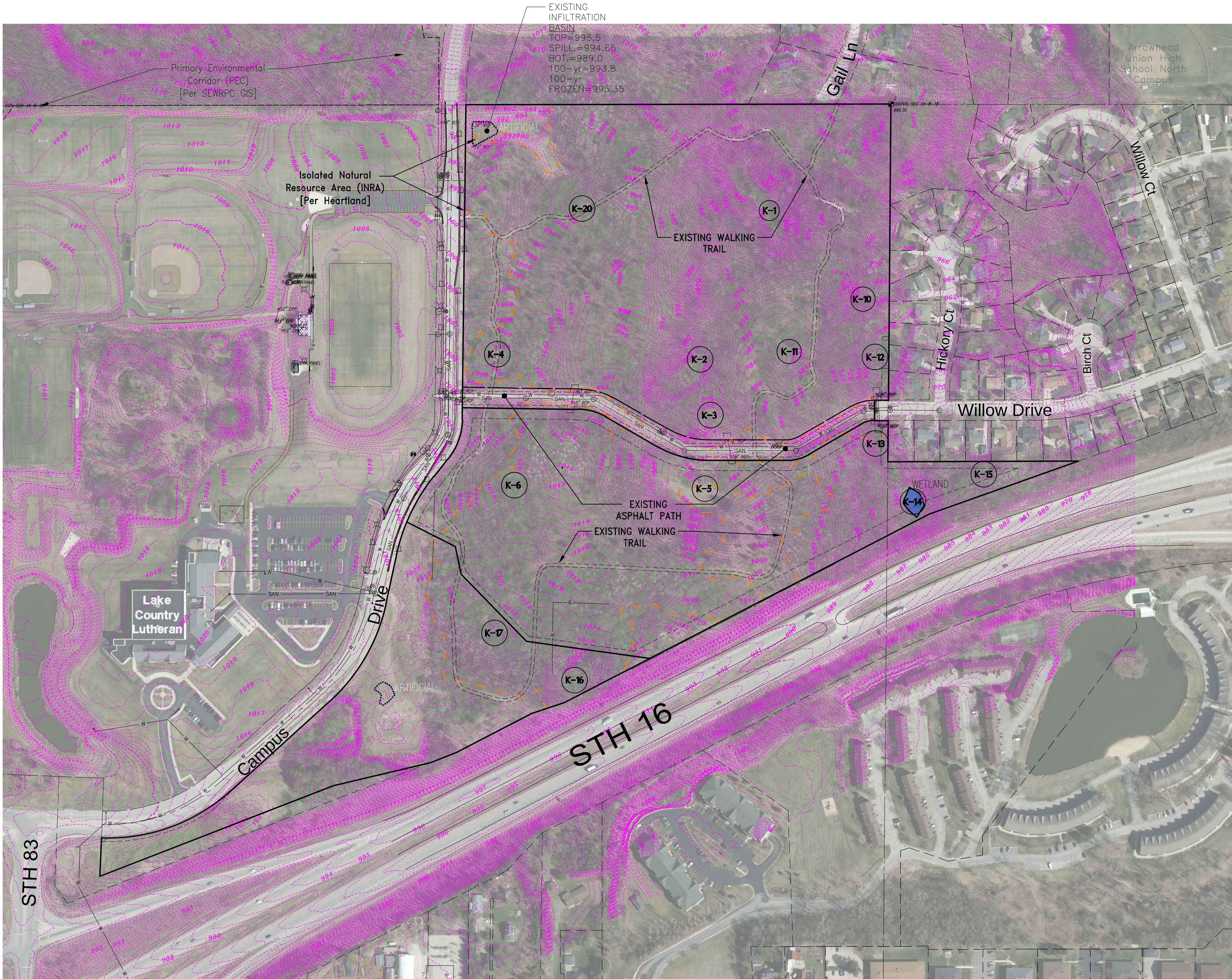


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**CALL DIGGERS HOTLINE 1-800-242-8511**

**NOTE:**  
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**ISOLATED NATURAL RESOURCE AREA NOTE:**

Isolated Natural Resource Area boundary shown (In orange) hereon was delineated by Heartland Ecological Group Inc. in February 2020.

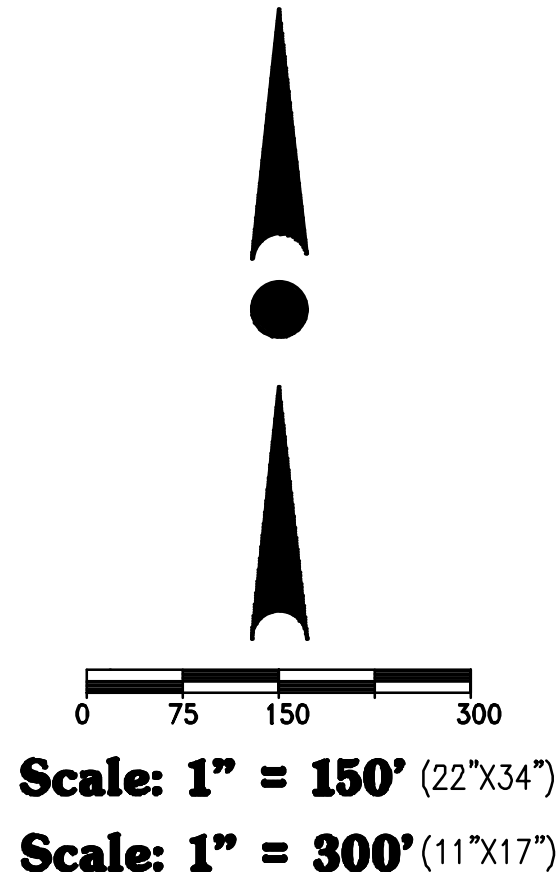
**HORIZONTAL DATUM PLANE:**

ALL BEARINGS ARE REFERENCED TO GRID NORTH OF THE WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE (NAD-27), IN WHICH THE NORTH LINE OF THE S.W. 1/4 OF SECTION 34, TOWN 8 NORTH, RANGE 18 EAST, BEARS N89°54'10"E.

**VERTICAL DATUM PLANE:**

All elevations are referenced to the National Geodetic Vertical Datum of 1929 via a ground survey by Trio Engineering, LLC, and Waukesha County GIS topographic data.

|           |                 | Storm Event | Existing |
|-----------|-----------------|-------------|----------|
| Kettle 1  | Spillway-975    | 100-yr      | 953.25   |
|           | Bottom-944      | FROZEN      | 964.03   |
| Kettle 2  | Spillway-973.7  | 100-yr      | 973.89   |
|           | Bottom-966      | FROZEN      | 975.56   |
| Kettle 3  | Spillway-976    | 100-yr      | 976.29   |
|           | Bottom-972      | FROZEN      | 976.79   |
| Kettle 4  | Spillway-1008.5 | 100-yr      | 1008.13  |
|           | Bottom-1007     | FROZEN      | 1008.66  |
| Kettle 5  | Spillway-985.1  | 100-yr      | 984.22   |
|           | Bottom-982.5    | FROZEN      | 985.82   |
| Kettle 6  | Spillway-1012.7 | 100-yr      | 1012.10  |
|           | Bottom-1011     | FROZEN      | 1012.96  |
| Kettle 10 | Spillway-964.5  | 100-yr      | 960.89   |
|           | Bottom-953      | FROZEN      | 965.08   |
| Kettle 11 | Spillway-980.5  | 100-yr      | 980.51   |
|           | Bottom-979      | FROZEN      | 980.84   |
| Kettle 12 | Spillway-963    | 100-yr      | 960.40   |
|           | Bottom-956      | FROZEN      | 965.08   |
| Kettle 13 | Spillway-966    | 100-yr      | 960.14   |
|           | Bottom-959.4    | FROZEN      | 963.41   |
| Kettle 14 | Spillway-961.3  | 100-yr      | 961.49   |
|           | Bottom-955      | FROZEN      | 963.41   |
| Kettle 15 | Spillway-972.5  | 100-yr      | 972.15   |
|           | Bottom-970      | FROZEN      | 972.77   |
| Kettle 16 | Spillway-1007   | 100-yr      | 1007.15  |
|           | Bottom-1005     | FROZEN      | 1008.04  |
| Kettle 17 | Spillway-1012   | 100-yr      | 1012.19  |
|           | Bottom-1011     | FROZEN      | 1012.87  |
| Kettle 20 | Spillway-995.5  | 100-yr      | 993.60   |
|           | Bottom-992      | FROZEN      | 995.21   |



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**BY: NEUMANN DEVELOPMENTS, INC.**  
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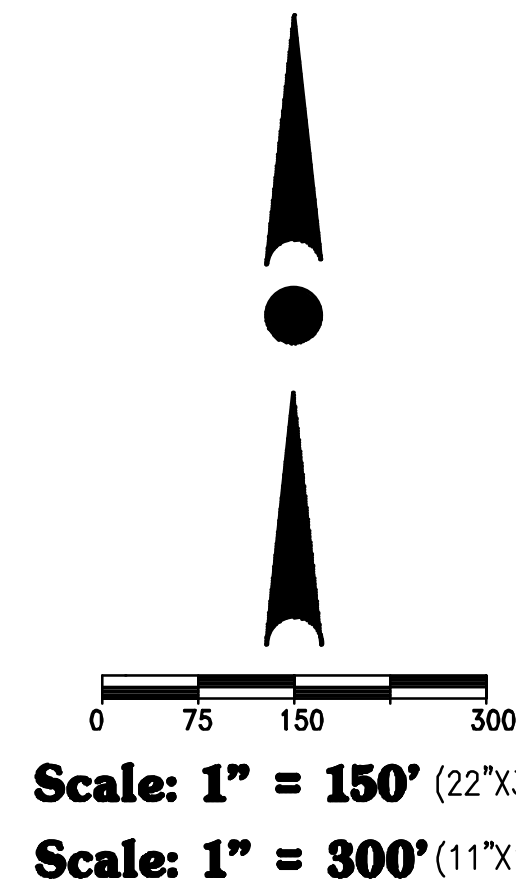
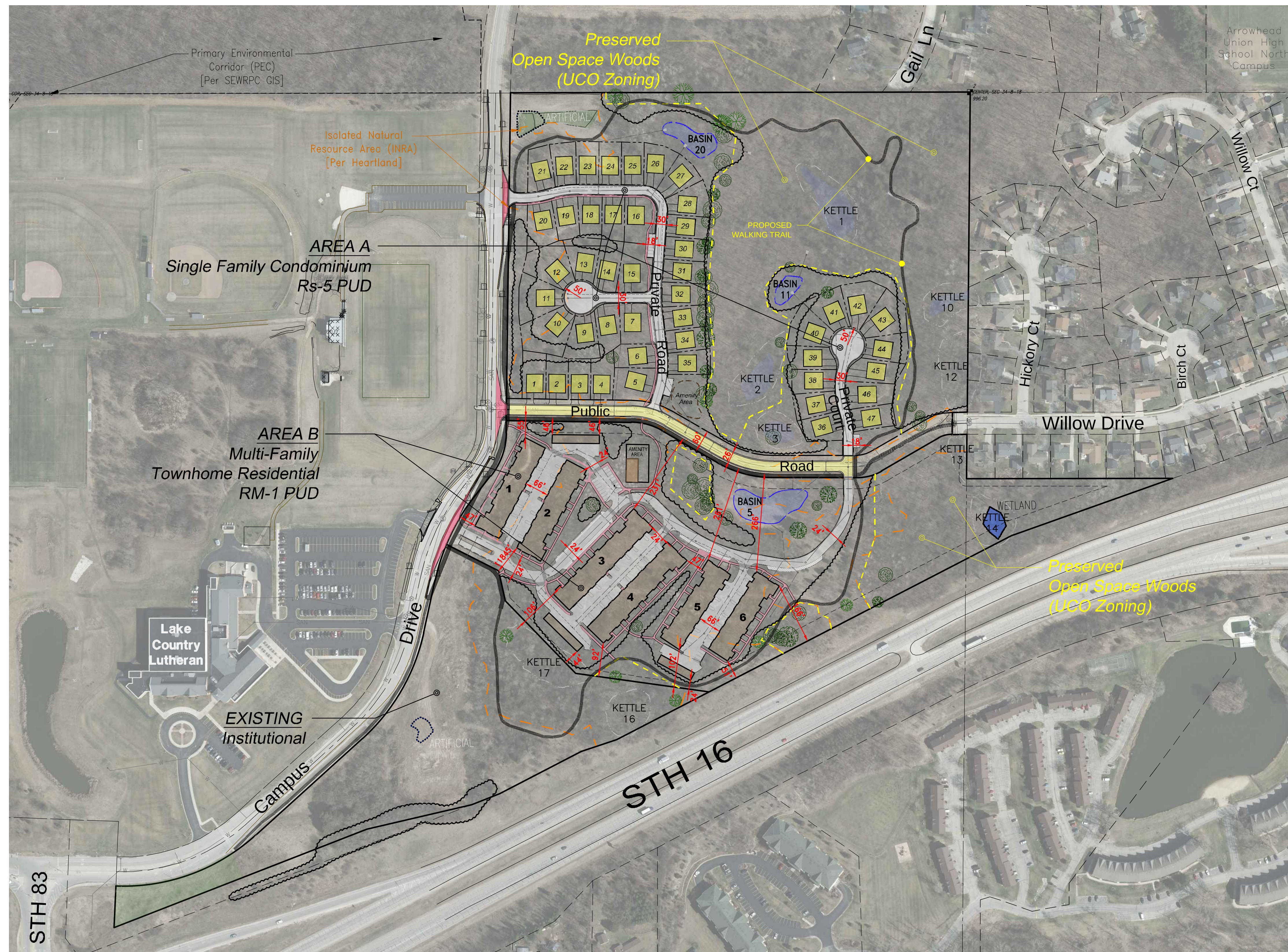
**JOB NUMBER:**  
**19023-953**

**DESCRIPTION:**  
**EXISTING**  
**SITE PLAN**

**SHEET**

**C1.0**





## DEVELOPMENT SUMMARY

|                            |   |              |
|----------------------------|---|--------------|
| Total Area                 |   |              |
| Area A - RS-5 (PUD)        | = | 27.435 acres |
| Area B - RM-1 (PUD)        | = | 16.968 acres |
| Existing Institutional I-1 | = | 8.910 acres  |
| Total Area                 | = | 53.313 acres |

|                                                      |   |              |
|------------------------------------------------------|---|--------------|
| <u>Proposed UCO (Isolated Natural Resource Area)</u> |   |              |
| Area A - UCO                                         | = | 11.018 acres |
| Area B - UCO                                         | = | 4.246 acres  |
| Proposed UCO Area                                    | = | 15.264 acres |

## AREA A Development Summary

|                          |                |
|--------------------------|----------------|
| - Total Area:            | 27.435 acres   |
| - Public Road Dedication | -1.746 acres   |
| - UCO Area:              | - 11.018 acres |
| - Net Area:              | 14.671 acres   |

- Proposed Zoning: RS-5 PUD  
"Clustered Conservancy Community"

- 47 - Single Family Condominiums
- Net Density =  $47 / 14.671 = 3.20$  units/acre

## AREA B Development Summary

|               |               |
|---------------|---------------|
| - Total Area: | 16.968 acres  |
| - UCO Area:   | - 4.246 acres |
| - Net Area:   | 12.722 acres  |

- Proposed Zoning: RM-1 PUD  
"Townhome Residential"

- 138 - Townhome Residential Units
- Net Density =  $138 / 12.722 = 10.847$  units/acre

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ENGINEER / SURVEYOR:

**TRIO ENGINEERING, LLC**  
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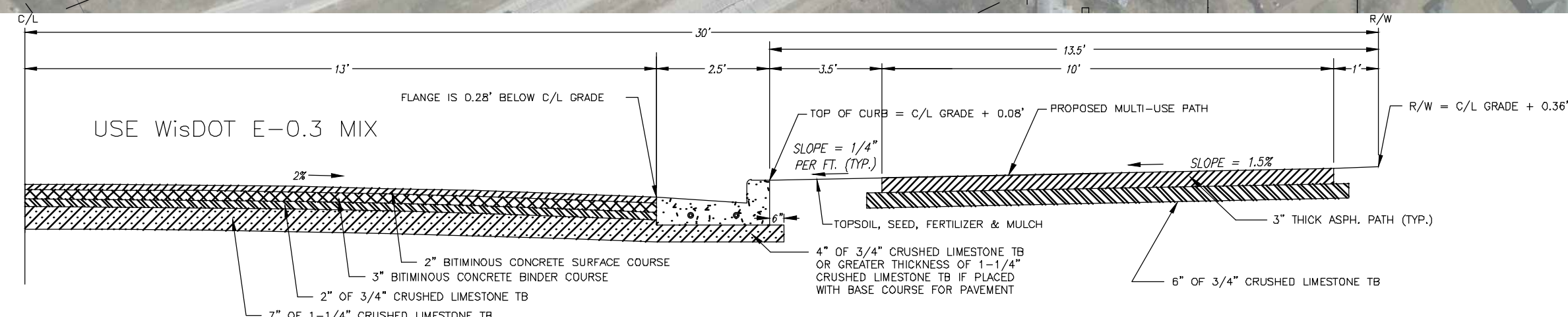
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**DESCRIPTION:**

## OVERALL SITE PLAN "A"

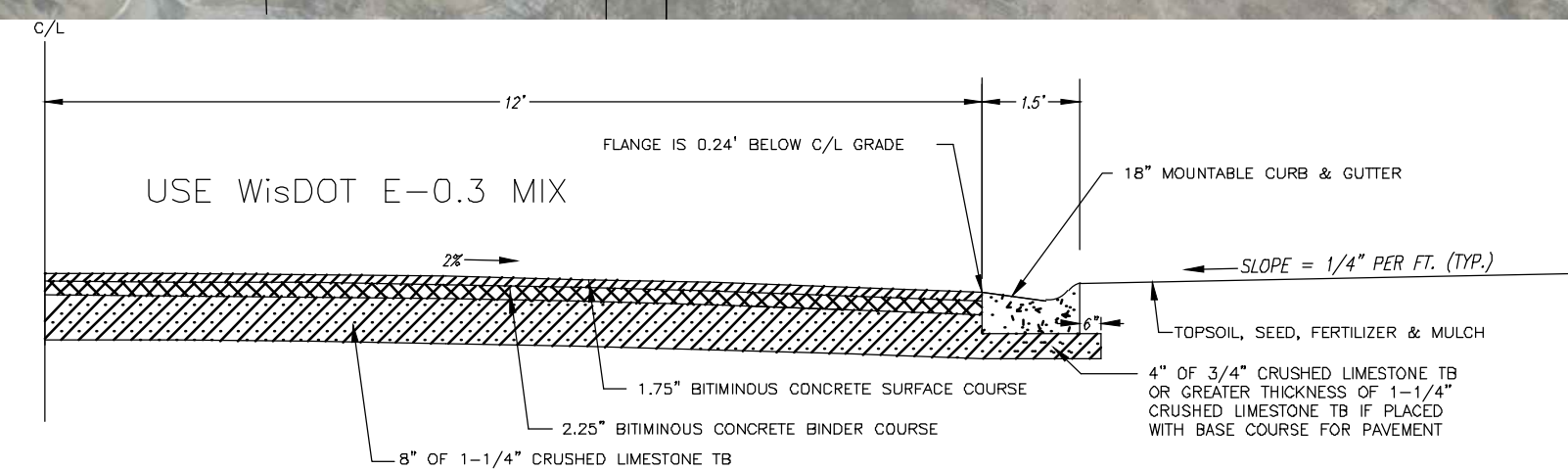
# SHEET

## C1.1A



TYPICAL PUBLIC ROAD CROSS SECTION  
26' PAVEMENT WITH 30" STANDARD CURB

NOT TO SCALE



TYPICAL PRIVATE ROAD CROSS SECTION  
24' PAVEMENT WITH 18" MOUNTABLE CURB & GUTTER

NOT TO SCALE









**LEGEND:**

- 850 - EXISTING CONTOUR
- 860 - PROPOSED CONTOUR
- × 842.0 - PROPOSED SPOT GRADE
- HP - HIGH POINT
- LP - LOW POINT
- RIM - STORM SEWER STRUCTURE RIM

**WISCONSIN**

JOSHUA D. PUDELKO  
E-39420  
WAUKESHA, WI

**PROFESSIONAL ENGINEER**

**TRIO**

DESIGN • LAND SURVEYING  
CIVIL ENGINEERING

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**JOB NUMBER:**  
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**DESCRIPTION:**  
GRADING PLAN - NORTH

**SHEET**

**C1.2**

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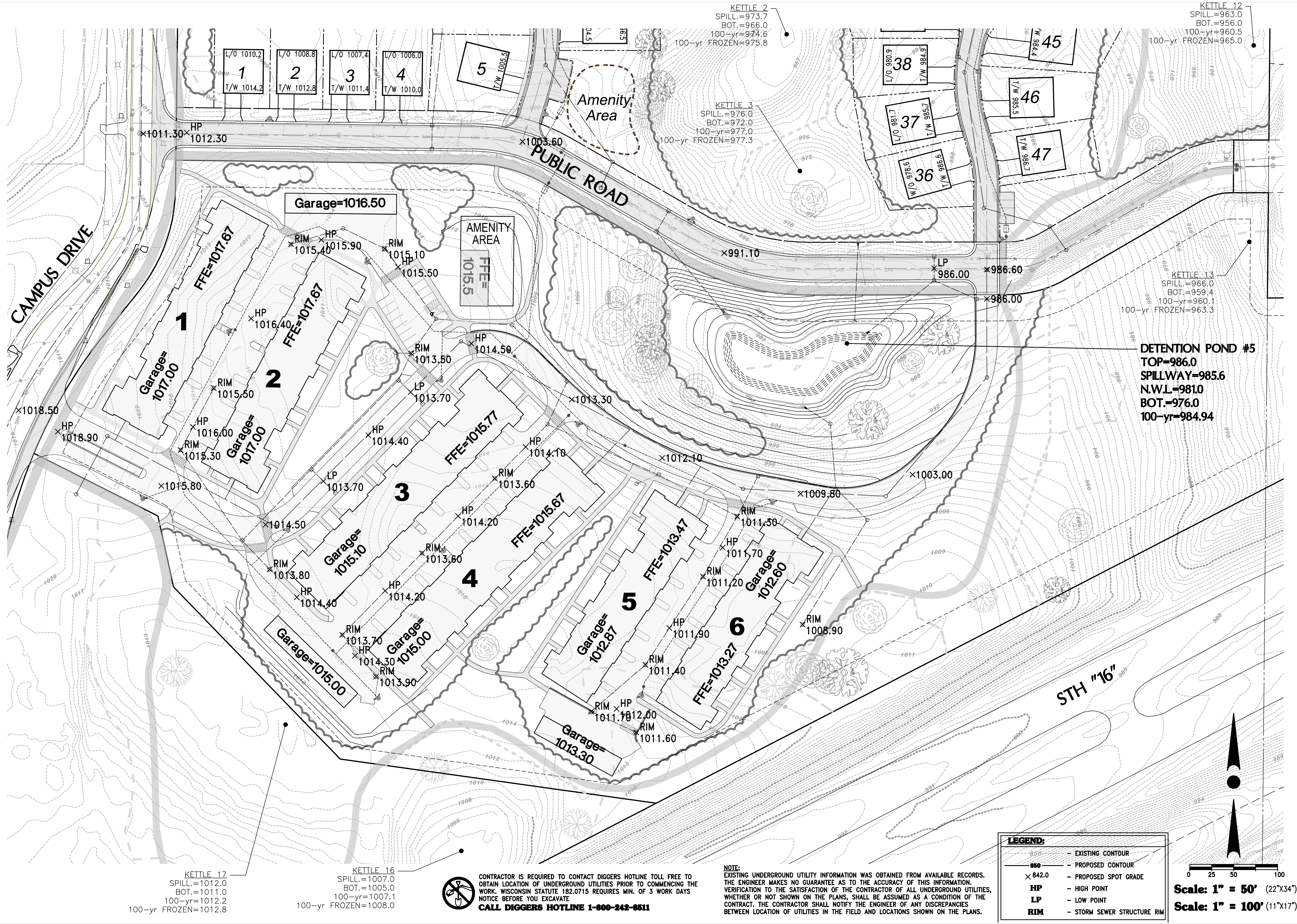
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**DESCRIPTION:**  
GRADING PLAN - SOUTH

**SHEET**  
C1.3



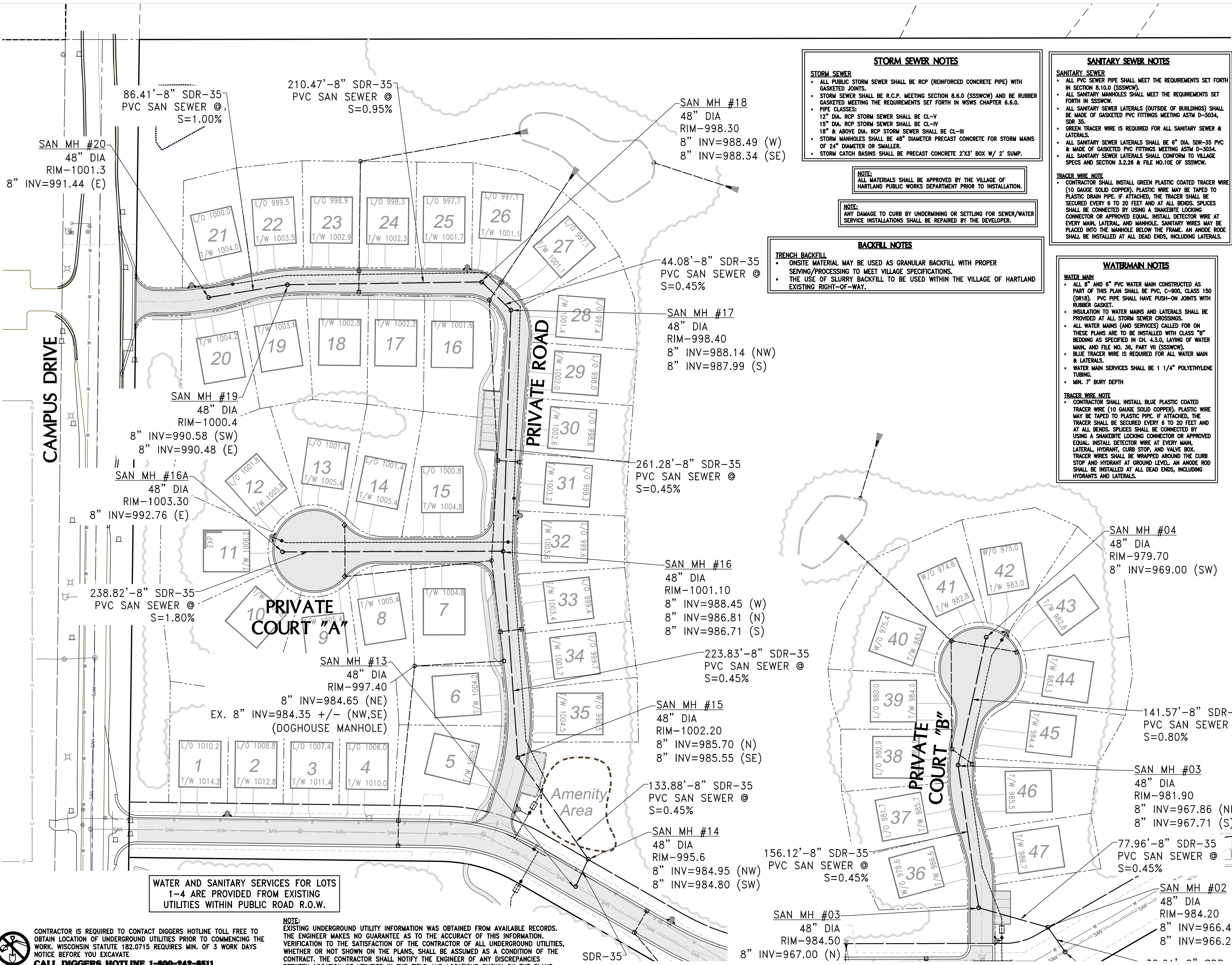
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WATER AND SANITARY SERVICES FOR LOTS 1-4 ARE PROVIDED FROM EXISTING UTILITIES WITHIN PUBLIC ROAD R.O.W.



#### STORM SEWER NOTES

- STORM SEWER**
- ALL PUBLIC STORM SEWER SHALL BE RCP (REINFORCED CONCRETE PIPE) WITH GASKETED JOINTS.
  - STORM SEWER SHALL BE R.C.P. MEETING SECTION 8.6.0 (SSSWCW) AND BE RUBBER GASKETED MEETING THE REQUIREMENTS SET FORTH IN WSWs CHAPTER 6.6.0.
  - PIPE CLASSES:
    - 12" DIA. RCP STORM SEWER SHALL BE CL-V
    - 15" DIA. RCP STORM SEWER SHALL BE CL-IV
    - 18" & ABOVE DIA. RCP STORM SEWER SHALL BE CL-III
  - STORM MANHOLES SHALL BE 48" DIAMETER PRECAST CONCRETE FOR STORM MAINS OF 24" DIAMETER OR SMALLER.
  - STORM CATCH BASINS SHALL BE PRECAST CONCRETE 2'X3' BOX W/ 2' SUMP.

NOTE:  
ALL MATERIALS SHALL BE APPROVED BY THE VILLAGE OF HARTLAND PUBLIC WORKS DEPARTMENT PRIOR TO INSTALLATION.

NOTE:  
ANY DAMAGE TO CURB BY UNDERMINING OR SETTLING FOR SEWER/WATER SERVICE INSTALLATIONS SHALL BE REPAIRED BY THE DEVELOPER.

#### BACKFILL NOTES

- TRENCH BACKFILL**
- ON-SITE MATERIAL MAY BE USED AS GRANULAR BACKFILL WITH PROPER SEIVING/PROCESSING TO MEET VILLAGE SPECIFICATIONS.
  - THE USE OF SLURRY BACKFILL TO BE USED WITHIN THE VILLAGE OF HARTLAND EXISTING RIGHT-OF-WAY.

#### SANITARY SEWER NOTES

- SANITARY SEWER**
- ALL PVC SEWER PIPE SHALL MEET THE REQUIREMENTS SET FORTH IN SECTION 8.10.0 (SSSWCW).
  - ALL SANITARY MANHOLES SHALL MEET THE REQUIREMENTS SET FORTH IN SSSWCW.
  - ALL SANITARY SEWER LATERALS (OUTSIDE OF BUILDINGS) SHALL BE MADE OF GASKETED PVC FITTINGS MEETING ASTM D-3034, SDR 35.
  - GREEN TRACER WIRE IS REQUIRED FOR ALL SANITARY SEWER & LATERALS.
  - ALL SANITARY SEWER LATERALS SHALL BE 6" DIA. SDR-35 PVC & MADE OF GASKETED PVC FITTINGS MEETING ASTM D-3034.
  - ALL SANITARY SEWER LATERALS SHALL CONFORM TO VILLAGE SPECS AND SECTION 3.2.26 & FILE NO.10E OF SSSWCW.

**TRACER WIRE NOTE**

- CONTRACTOR SHALL INSTALL GREEN PLASTIC COATED TRACER WIRE (10 GAUGE SOLID COPPER). PLASTIC WIRE MAY BE TAPED TO PLASTIC DRAIN PIPE. IF ATTACHED, THE TRACER SHALL BE SECURED EVERY 6 TO 20 FEET AND AT ALL BENDS. SPLICES SHALL BE CONNECTED BY USING A SNAKEBITE LOCKING CONNECTOR OR APPROVED EQUAL. INSTALL DETECTOR WIRE AT EVERY MAIN, LATERAL, AND MANHOLE. SANITARY WIRES MAY BE PLACED INTO THE MANHOLE BELOW THE FRAME. AN ANODE ROD SHALL BE INSTALLED AT ALL DEAD ENDS, INCLUDING LATERALS.

#### WATERMAIN NOTES

- WATER MAIN**
- ALL 8" AND 6" PVC WATER MAIN CONSTRUCTED AS PART OF THIS PLAN SHALL BE PVC, C-900, CLASS 150 (DR18). PVC PIPE SHALL HAVE PUSH-ON JOINTS WITH RUBBER GASKET.
  - INSULATION TO WATER MAINS AND LATERALS SHALL BE PROVIDED AT ALL STORM SEWER CROSSINGS.
  - ALL WATER MAINS (AND SERVICES) CALLED FOR ON THESE PLANS ARE TO BE INSTALLED WITH CLASS "B" BEDDING AS SPECIFIED IN CH. 4.3.0, LAYING OF WATER MAIN, AND FILE NO. 36, PART VII (SSSWCW).
  - BLUE TRACER WIRE IS REQUIRED FOR ALL WATER MAIN & LATERALS.
  - WATER MAIN SERVICES SHALL BE 1 1/4" POLYETHYLENE TUBING.
  - MIN. 7' BURY DEPTH

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EMAIL: info@trioeng.com

**PROJECT:**  
"EAST 50 ACRES" RESIDENTIAL DEVELOPMENT  
LAKE COUNTRY LUTHERAN LAND  
VILLAGE OF HARTLAND, WISCONSIN  
BY: NEUMANN DEVELOPMENTS, INC.  
N27W24025 PAUL COURT, SUITE 100  
PEWAUKEE, WI 53072

| REVISION HISTORY |                       |
|------------------|-----------------------|
| DATE             | DESCRIPTION           |
| 03/08/20         | PLAN COMMISSION       |
| 04/10/20         | PRELIMINARY SUBMITTAL |
| 04/28/20         | REVISED SITE PLAN     |
| 05/08/20         | REVISED SITE PLAN     |
|                  |                       |
|                  |                       |
|                  |                       |
|                  |                       |
|                  |                       |
|                  |                       |

**DATE:**  
MAY 8, 2020

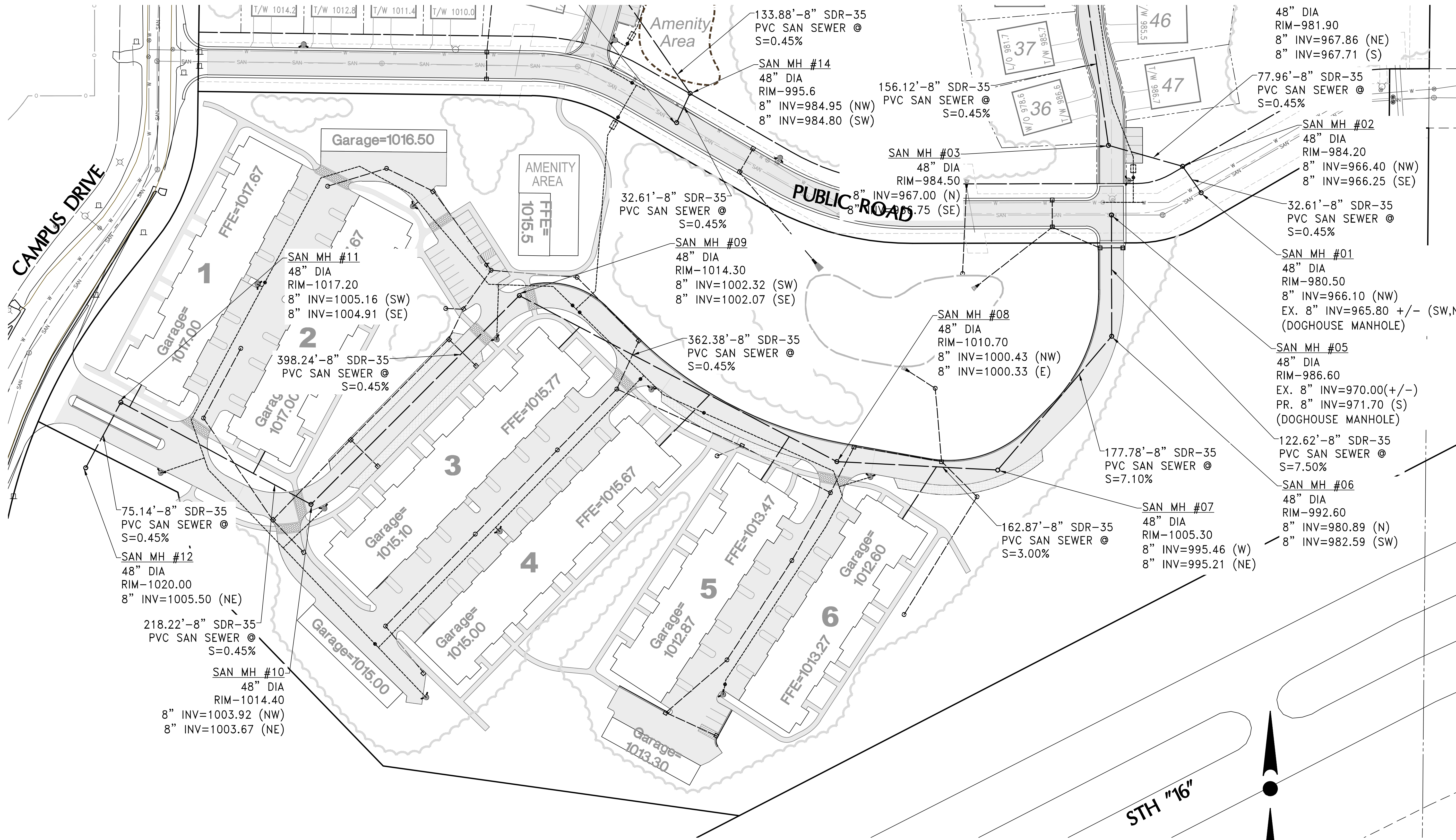
**JOB NUMBER:**  
19023-953

**DESCRIPTION:**  
UTILITY PLAN - NORTH

**SHEET**  
**C1.4**



H:\C900\953\19023-01\PRELIMINARY\PRELIMINARY CIVIL\_LAKE COUNTRY LUTHERAN-22X34.DWG



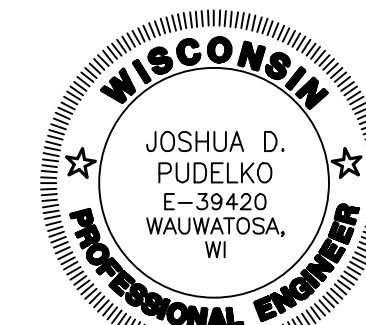
CONTRACTOR IS REQUIRED TO CONTACT DIGGERS HOTLINE TOLL FREE TO OBTAIN LOCATION OF UNDERGROUND UTILITIES PRIOR TO COMMENCING THE WORK. WISCONSIN STATUTE 182.0715 REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE  
**CALL DIGGERS HOTLINE 1-800-242-8511**

NOTE:  
EXISTING UNDERGROUND UTILITY INFORMATION WAS OBTAINED FROM AVAILABLE RECORDS. THE ENGINEER MAKES NO GUARANTEE AS TO THE ACCURACY OF THIS INFORMATION. VERIFICATION TO THE SATISFACTION OF THE CONTRACTOR OF ALL UNDERGROUND UTILITIES, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE ASSUMED AS A CONDITION OF THE CONTRACT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN LOCATION OF UTILITIES IN THE FIELD AND LOCATIONS SHOWN ON THE PLANS.

0 25 50 100

Scale: 1" = 50' (22"x34")

Scale: 1" = 100' (11"x17")



4100 N. CALHOUN ROAD  
BROOKFIELD, WI 53005  
PHONE: (262) 790-1480  
FAX: (262) 790-1481  
EMAIL: info@trioeng.com

**PROJECT:**  
**"EAST 50 ACRES" RESIDENTIAL DEVELOPMENT**  
**LAKE COUNTRY LUTHERAN LAND**  
**VILLAGE OF HARTLAND, WISCONSIN**  
**BY: NEUMANN DEVELOPMENTS, INC.**  
**N27W24025 PAUL COURT, SUITE 100**  
**PEWAUKEE, WI 53072**

| REVISION HISTORY |                       |
|------------------|-----------------------|
| DATE             | DESCRIPTION           |
| 03/08/20         | PLAN COMMISSION       |
| 04/10/20         | PRELIMINARY SUBMITTAL |
| 04/28/20         | REVISED SITE PLAN     |
| 05/08/20         | REVISED SITE PLAN     |
|                  |                       |
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**DATE:**  
MAY 8, 2020

**JOB NUMBER:**  
19023-953

**DESCRIPTION:**  
UTILITY PLAN - SOUTH

**SHEET**

**C1.5**



SECTION 33 05 00 HARTLAND COMMON WORK RESULTS FOR UTILITIES

- PART 2 – PRODUCTS  
2.03 BACKFILL  
A. GRANULAR: LIMESTONE SCREENING NOT ALLOWED.  
B. SPOIL: MAXIMUM PARTICLE SIZE 3-INCHES.  
2.04 LOCATION AIDS  
A. TRACER WIRE:  
a. FOR OPEN-CUT: DIRECT-BURIAL-RATED INSULATED #10 AWG SOLID COPPER CONDUCTOR.  
4. SPLICES: COPPERHEAD INDUSTRIES DRYCONN®3-WAY DIRECT BURY LUG CONNECTOR 3WB-01 OR APPROVED EQUAL.  
5. COLOR:  
a. WATER: BLUE.  
b. SANITARY: GREEN.  
B. LOCATION BOXES FOR TRACER WIRE ACCESS.  
1. BURIED:  
a. SNAKEPIT TEST STATION, BY COPPERHEAD INDUSTRIES, OR APPROVED EQUAL.  
C. GROUNDING ANODE ROD TO HAVE A MINIMUM OF 1 POUND OF MAGNESIUM AND #10 AWG WIRE.  
D. MARKER FLAG:  
1. "HYDRAFINDER".  
2. 5 FEET LONG.  
3. FIBERGLASS, RED AND WHITE.  
4. SPRING LOAD ACTION.

- PART 3 – EXECUTION  
3.04 LOCATION AIDS  
A. DETECTOR WIRE:  
1. PLACE MAXIMUM 3 INCHES DIRECTLY ABOVE PIPE. (NO NEED TO TAPE TO PIPE)  
3. TEST DETECTOR WIRE CONTINUITY PRIOR TO ACCEPTANCE OF PIPE INSTALLATION.  
B. INSTALL DETECTOR WIRE AT:  
1. WATER MAINS.  
a. EVERY HYDRANT. EXTEND DETECTOR WIRE THROUGH A TEST STATION BOX THAT IS TO BE LOCATED ADJACENT TO THE HYDRANT.  
b. EVERY CURB STOP. EXTEND DETECTOR WIRE UP CURB STOP BOX AND CONNECT TO CURB STOP LID.  
2. SEWERS, LATERALS.  
a. EVERY MANHOLE.  
b. SANITARY WIRES CAN BE PLACED INTO THE MANHOLE BELOW THE FRAME.  
c. EVERY LATERAL. EXTEND DETECTOR WIRE TO TOP OF HARDWOOD MARKER AT END OF LATERAL.  
C. GROUNDING ANODE ROD:  
1. INSTALL AT EVERY HYDRANT USING WIRE CONNECTOR EXTENDED FROM MAIN.  
2. INSTALL AT EVERY CURB STOP BOX USING WIRE CONNECTOR EXTENDED FROM MAIN.  
D. DEMONSTRATE CONTINUITY OF DETECTOR WIRES TO ENGINEER. CONNECT OHM METER IN A SERIES LOOP WITH DETECTOR WIRE AND ABOVE-GROUND WIRE. CIRCUIT RESISTANCE SHALL NOT EXCEED 5 OHMS.  
E. TEST LOCATING. CONTACT OWNER AT (262) 367-2714 TO LOCATE ALL UTILITIES.  
1. AFTER COMPLETION OF CONTINUITY TEST.  
2. BEFORE ACCEPTANCE FOR USE.  
3.06 INSULATION  
A. WHERE STORM SEWER CROSS OVER WATER MAIN OR LATERALS.  
3.07 BEDDING AND COVER  
A. USE 6 INCHES OF BEDDING MATERIAL.  
3.08 TRENCH BACKFILLING AND CONSOLIDATION  
A. MATERIAL:  
1. FOR NEW DEVELOPMENTS.  
a. GRANULAR. UTILIZE SPOIL IF IT MEETS THE GRADATION OF GRANULAR. MAXIMUM PARTICLE SIZE ALLOWED IS 3-INCHES. SCREEN EXISTING MATERIAL, OTHERWISE PROVIDE HAULED IN GRANULAR.  
b. AGGREGATE SLURRY. USE WHERE PERMANENT ASPHALT PATCHES ARE BEING USED OR AS DIRECTED BY ENGINEER.  
3. OTHER AREAS: SPOIL.  
4. AROUND AND OVER UNDERGROUND FACILITIES: FOLLOW RESPECTIVE OWNER'S REQUIREMENTS.  
B. CONSOLIDATION: EITHER OF THE FOLLOWING METHODS MAY BE USED FOR NEW DEVELOPMENTS OR VILLAGE PROJECTS.  
1. FLOODING. FOLLOWING SWS 2.6.14(A). INSERTIONS SHALL BE MADE IN A GRID PATTERN WITH 3-FOOT MAXIMUM SPACING BOTH LONGITUDINALLY AND Laterally.  
2. MECHANICAL COMPACTION. FOLLOW SWS 2.6.14(B) EXCEPT CONTRACTOR SHALL FURNISH AND PAY FOR COMPACTION TESTING SERVICES FROM A GEOTECHNICAL TESTING FIRM APPROVED BY THE VILLAGE.  
a. IN ADDITION, ALL UTILITY STRUCTURES WITHIN THE VILLAGE RIGHT-OF-WAY OR UNDER OTHER PAVED AREAS SHALL BE FURTHER CONSOLIDATED BY FLOODING. FOLLOW SWS 2.6.12(A). INSERTIONS SHALL BE MADE IN A GRID PATTERN WITH 3-FOOT MAXIMUM SPACING BOTH LONGITUDINALLY AND Laterally TO A MINIMUM RADIUS OF 6 FEET FROM THE STRUCTURE.  
3. REPAIR ANY TRENCH THAT SETTLES WITHIN ONE YEAR AFTER FINAL COMPLETION.

SECTION 33 11 00 HARTLAND WATER UTILITY DISTRIBUTION PIPING

- PART 2 – PRODUCTS  
2.02 WATER MAIN PIPE AND APPURTENANCES  
A. PIPE, 5-INCH AND LARGER.  
2. PVC:  
a. FOR 3 THROUGH 12-INCH DIAMETER: AWWA C-900, CLASS 150, AND HAVE A MINIMUM PRESSURE CLASS OF 235 PSI AND A THICKNESS OF DR 18.  
B. RESILIENT SEATED GATE VALVES:  
h. ALL BOLTS SHALL BE 300 SERIES (18-8) STAINLESS STEEL.  
i. AFC 2500 SERIES OR CLOW C2640.  
C. VALVE ENCLOSURES:  
1. BOXES:  
b. MANUFACTURERS: TYLER 6860 OR EAST JORDAN.  
d. VALVE BOX ADAPTERS: ADAPTOR, INC.  
e. POLYETHYLENE FILM WRAP AROUND ALL VALVE BOXES.  
D. HYDRANT ASSEMBLY.  
1. FOLLOW AWWA C502 AND SWS 8.26.0:  
a. BURY DEPTHS: 7'-6" MINIMUM.  
d. 5-1/4 INCH MINIMUM MAIN VALVE OPENING, NATIONAL STANDARD 2-1/2 INCH HOSE NOZZLE AND A 5-INCH STORZ NOZZLE-FACTORY INSTALLED. NOZZLES SHALL BE MECHANICALLY ATTACHED.  
e. FACTORY PAINTED RED, WITH ALL CAPS PAINTED WHITE.  
g. HYDRANTS SHALL BE FACTORY INSTALLED WITH 304 STAINLESS STEEL BOLTS BETWEEN BARREL AND SHOE.  
h. UPPER STAND PIPE DIMENSION OF 16 INCHES.  
2. AMERICAN FLOW CONTROL INC. (FORMERLY WATEROUS) WB-67 PACER.  
4. MARKER FLAG:  
a. "HYDRAFINDER".  
b. 5 FEET LONG.  
c. FIBERGLASS, RED AND WHITE.  
d. SPRINGLOAD ACTION.  
E. FITTINGS:  
1. JOINTS:  
a. BURIED: MECHANICAL  
2. PRESSURE RATING  
a. FULLY BODY: 250 PSI.  
b. COMPACT: 350 PSI.  
3. MATERIAL:  
a.DUCTILE IRON:  
1.) CLASS 52 WALL THICKNESS.  
4.) COR-BLUE TEE BOLTS.

- F. SERVICE LINES, VALVES AND FITTINGS.  
1. LINES:  
a. 2 INCH AND SMALLER SHALL FOLLOW SWS 8.24.0 AND:  
2.) POLYETHYLENE (HDPE) SDR 9 CTS. STAINLESS STEEL STIFFENERS SHALL BE USED.  
2. CORPORATION VALVES FOR COPPER OR HDPE:  
b. COMPRESSION FITTINGS: MUELLER B-25008 (1, 1 1/2, OR 2 INCH), FORD FB1000-5Q FULL PORT (1 1/4 INCH ONLY).  
c. USE COMPRESSION FITTINGS WITH STAINLESS STEEL STIFFENERS FOR HDPE.  
3. CURB VALVES FOR COPPER OR HDPE:  
b. COMPRESSION FITTINGS: MUELLER B-25155 (1 OR 1 1/2 INCH) MINNEAPOLIS PATTERN, OR APPROVED EQUAL WITH LID PENTAGONAL BRASS PLUG. A.Y. MCDONALD NOT ALLOWED.  
4. CURB BOXES:  
a. SCREW-ON STYLE.  
b. MUELLER H-10300 WITH TRACER WIRE LID OR A.Y. MCDONALD 5610TW.  
c. LID PENTAGONAL BRASS PLUG.  
5. VALVE STEM EXTENSION TO WITHIN 18 INCHES OF SURFACE ON 1 AND 1-1/4-INCH CURB STOPS.  
6. NO SPLICES WILL BE ALLOWED BETWEEN THE MAIN AND THE CURB STOP.  
I. RESTRAINED JOINTS FOR PVC PIPE:  
1. EBBA IRON SERIES 2000 PVC MEGALUG.  
2. IN ADDITION TO MEGALUGS, HARDWOOD OR SOLID CONCRETE BLOCK BUTTRESSES MAY BE USED.

- PART 3 – EXECUTION  
3.01 WATER MAIN INSTALLATION  
D. SET VALVE BOXES TO 1/2 BELOW FINISH GRADE AFTER CURB AND GUTTER PLACEMENT AND BEFORE ASPHALT PLACEMENT.  
F. HYDRANTS:  
1. LOCATE HYDRANT VALVES BEHIND CURB AS SHOWN ON DETAIL DRAWING WM-01. ALL JOINTS ALONG HYDRANT LEAD SHALL BE RESTRAINED.  
b. RESTRAINED JOINTS FOR PVC PIPE:  
1.) EBBA IRON SERIES 2000 PVC MEGALUG  
3.) POSITION CENTERLINE OF LOWEST HYDRANT OUTLET NOZZLE 20 INCHES (PLUS-OR-MINUS) ABOVE FINISH GRADE.  
G. BUTTRESSES: NO POURED BUTTRESSES WILL BE ALLOWED. HARDWOOD OR SOLID CONCRETE BLOCK BUTTRESSES MAY SUPPLEMENT MECHANICAL RESTRAINTS.  
H. PRESSURE TEST PIPELINES FOLLOWING SWS 4.15.0. COMBINATION LEAK/PRESSURE TEST AT 150 PSI FOR TWO HOURS IS ALLOWED.  
I. DISINFECT PIPELINES FOLLOWING SWS 4.3.12 AND 4.16.0 UTILIZING GRANULAR CHLORINE NOT TABLETS. AFTER SUCCESSFUL PRESSURE TEST, VILLAGE SHALL TAKE TWO SUCCESSIVE SAFE WATER SAMPLES PRIOR TO APPROVAL OF INSTALLED PIPE FIRST AFTER FLUSHING CHLORINE AND SECOND IN 24 HOURS.  
J. ALL CHLORINATED, CHEMICALLY TREATED OR CONTAMINATED FLUSHING WATER SHALL BE DISCHARGED TO THE VILLAGE SANITARY SEWER VIA FLEXIBLE HOSE PROVIDED BY CONTRACTOR. CONTRACTOR SHALL NOTIFY OWNER PRIOR TO DISCHARGING TO SANITARY SEWER AND SHALL MONITOR/QUANTIFY AND REPORT THE TOTAL FLOWS TO THE OWNER. METER AVAILABLE FROM DPW OPERATIONS SUPERVISOR BY CALLING (414) 630-8167. ALL OTHER FLUSHING WATER MAY BE DISCHARGED TO GRASSED AREAS, PROVIDED THAT THERE IS NO CHANCE FOR NEGATIVE IMPACT TO PRIVATE PROPERTY. WATER WASTED FROM PIPELINE THAT MAY REACH BODIES OF SURFACE WATER MAY NOT CONTAIN ANY SUBSTANCES IN CONCENTRATIONS THAT ADVERSELY AFFECT THE WATER AS DETERMINED BY THE WISCONSIN ADMINISTRATIVE CODE NR 105 AND 106. FOR CHLORINE, NO TOTAL RESIDUAL CHLORINE MAY BE MEASURED IN WATER BEING DISCHARGED TO A SURFACE WATER. ADVISE THE VILLAGE OF PROPOSED DISCHARGE SCHEDULE TO ARRANGE DNR-REQUIRED MEASUREMENTS. CONTRACTOR SHALL REVIEW FLUSHING PLAN WITH VILLAGE AND RECEIVE APPROVAL PRIOR TO CHLORINATING AND FLUSHING ANY WATER MAIN.  
K. SERVICES:  
5. FOR 2 INCH AND SMALLER FOLLOW SWS PART V AND:  
A. PROVIDE CURB VALVE AND BOX AT 1 FOOT INSIDE RIGHT-OF-WAY LINE OR AS DIRECTED BY ENGINEER.  
B. PROVIDE 2 BY 6-INCH HARDWOOD MARKER AT CURB BOX LOCATION FROM INVERT OF SERVICE TO 2 FEET ABOVE FINISHED GRADE.  
C. PROVIDE TAILPIECE. FOLLOW SWS DRAWING FILE NO. 51 DRAWING.  
L. CONNECTIONS TO EXISTING MAINS AND SERVICES:  
1. CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE OWNER WHEN CONNECTING INTERSECTING STREETS TO THE NEW WATER MAIN IN ORDER TO MINIMIZE INCONVENIENCE AND DISRUPTION CAUSED BY THE TEMPORARY DISCONTINUANCE OF WATER SERVICE. THE CONTRACTOR SHALL NOTIFY THE VILLAGE AT LEAST 72 HOURS PRIOR TO SHUTTING OFF ANY WATER SERVICE. WATER SERVICE TO RESIDENCES SHALL NOT BE SHUT DOWN FOR A PERIOD LONGER THAN EIGHT (8) HOURS. NOR AFTER 4:00 P.M. OR ON WEEKENDS, WITHOUT APPROVAL OF THE OWNER. RESIDENTIAL WATER SERVICE MAY ONLY BE SHUT DOWN BETWEEN THE HOURS OF 7:30 A.M. TO 4:00 P.M., EXCEPT THAT RESIDENTIAL WATER SERVICES MAY BE SHUT DOWN OUTSIDE OF THESE HOURS WITH THE OWNER'S PERMISSION. WATER SERVICE TO BUSINESSES OR OTHER ENTITIES SHALL NOT BE SHUT DOWN FOR A PERIOD LONGER THAN TWO (2) HOURS UNLESS SATISFACTORY ARRANGEMENTS ARE MADE WITH THE BUSINESS OR OTHER ENTITIES AFFECTED. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO RETURN SERVICE AT THE END OF EACH WORKING DAY, INCLUDING THE USE OF TEMPORARY VALVES OR PLUGS.

SECTION 33 30 00 HARTLAND SANITARY SEWERAGE

- PART 2 – PRODUCTS  
2.01 GRAVITY SANITARY SEWER  
A. PIPE, IF NOT SHOWN ON DRAWINGS, USE ONE TYPE FROM FOLLOWING:  
1. POLYVINYL CHLORIDE AND FITTINGS SOLID WALL:  
a. 4 THROUGH 15 INCH: TYPE PSM, FOLLOW ASTM D3034, SDR 35.  
B. C900 PVC PIPE WITH DUCTILE IRON FITTINGS TO BE USED FOR EXTRA DEPTH SEWER, AS SHOWN ON THE DRAWINGS.  
D. STRUCTURES:  
1. MANHOLES:  
a. FOLLOW SWS 3.5.0. AND SWS 8.39.0. NO STEPS ALLOWED IN TOP FIVE FEET OF STRUCTURE, MEASURED DOWN FROM RIM ELEVATION.  
2. FRAME:  
a. NEENAH R-1661-B (NON-MODERNIZED)  
3. COVER: SELF SEALING, CONCEALED PICK HOLE, NO VENTS. FOLLOW SWS DRAWING FILE NO. 14B, APPROXIMATE WEIGHT 108 POUNDS.  
4. PIPE TO MANHOLE CONNECTION: FOLLOW SWS 3.5.7.  
5. FRAME AND CHIMNEY SEALANTS: FOLLOW SWS 8.42.0. BETWEEN GRADE RINGS AND CASTING. BUTYL RUBBER ROPE JOINT SEALANT (MASTIC) AND BACK PLASTER GROUT ON THE EXTERIOR OF THE STRUCTURE. NO BACK PLASTER INSIDE STRUCTURE. NO CHIMNEY SEALS.  
6. GROUT: IPATOP PENNGROUT, NON-SHRINK CEMENTITIOUS GROUT BY IPA SYSTEMS.  
9. EXTERNAL JOINT WRAP IF GROUND WATER IS ABOVE BOTTOM OF MANHOLE:  
a. CADILLAC, INC.  
b. ESKY – WRAP.  
c. MAC WRAP.

- PART 3 – EXECUTION  
3.01 GRAVITY SANITARY SEWER INSTALLATION  
A. BEFORE STARTING, BULKHEAD AND/OR PLUG THE CONNECTION TO EXISTING SEWER. LEAVE IN PLACE UNTIL NEW SEWER HAS BEEN CLEANED AND ACCEPTED.  
C. SET MANHOLE FRAMES TO 1/4 TO 1/2-INCH BELOW FINISH GRADE AFTER PLACEMENT OF CURB AND GUTTER AND BEFORE ASPHALT PLACEMENT. PROVIDE ASPHALT RAMPING IF ONLY BINDER IS BEING PAVED. SET GRADE RINGS AND CASTING FLANGES ONTO A BUTYL RUBBER ROPE JOINT SEALANT (MASTIC).  
1. CONTRACTOR SHALL INSTALL CONCRETE COLLAR AT THEIR COST AROUND MANHOLE IF 1/4 TO 1/2- INCH TOLERANCE CANNOT BE ACHIEVED.  
D. CHIMNEY:  
1. NO STEPS ALLOWED.  
3. USE SINGLE MONOLITHIC PRECAST CONCRETE RING AND TWO 2-INCH PRECAST CONCRETE ADJUSTING RINGS FOR MANHOLE CHIMNEY.  
E. LATERALS: FOLLOW SWS PART V AND:  
2. PROVIDE 2 BY 6-INCH HARDWOOD MARKER AT END OF LATERAL FROM INVERT TO LATERAL TO 2 FEET ABOVE FINISH GRADE.  
G. AIR TEST: FOLLOW SWS 3.7.3.  
H. GO-NO-GO TEST: FOLLOW SWS 3.2.6(i)4.

- I. MANHOLE VACUUM TEST:  
a. FOLLOW SWS 3.7.6.  
b. TEST AFTER BACKFILLING.  
J. USE EXTERNAL JOINT WRAP ON MANHOLE JOINTS BELOW THE GROUND WATER LEVEL.  
K. TELEWISE MAINS AND RECORD VIDEO. USE SELF-PROPELLED CRAWLER CAMERA. DO NOT USE JETTER-PROPELLED CAMERA. FOLLOW SWS 7.1.2. PERFORM AFTER:  
1. MANHOLE BENCHES INSTALLED.  
L. CONVEY COPY OF VIDEO RECORD TO OWNER. FURNISH DVD.

SECTION 33 40 00 HARTLAND STORM DRAINAGE

- PART 2 – PRODUCTS  
2.01 STORM SEWER  
B. STRUCTURES:  
1. MANHOLES: NO STEPS ALLOWED IN TOP FIVE FEET OF STRUCTURE, MEASURED DOWN FROM RIM ELEVATION.  
2. CATCH BASIN FRAME AND COVER: NEENAH R-3067-L FOR CURB SECTION AND NEENAH R-3290-C FOR DRIVEWAY SECTION.  
3. CATCH BASIN: FOLLOW SWS 3.6.0 FOR PRECAST.  
4. MANHOLE FRAME AND COVER: NEENAH R-1661 OPEN GRATE, APPROXIMATE WEIGHT 500 POUNDS.  
6. INLET AND CATCH BASIN GROUT: IPATOP PENNGROUT, NON-SHRINK CEMENTITIOUS GROUT BY IPA SYSTEMS. BACKPLASTER ALLOWED ON EXTERIOR OF STRUCTURE ONLY.  
7. BUTYL RUBBER (MASTIC) SHALL BE USED BETWEEN SECTIONS, ADJUSTING RINGS, AND FRAME. BACKPLASTER GROUT ON EXTERIOR OF STRUCTURE ONLY.  
D. PIPE GRATES: FOLLOW SWS 8.16.0. 15-INCH ENDWALLS AND LARGER. WAUSAU CONCRETE PLATE A20 OR APPROVED EQUAL.

- PART 3 – EXECUTION  
3.01 STORM SEWER INSTALLATION  
B. SET MANHOLE FRAMES TO 1/4 TO 1/2-INCH BELOW FINISH GRADE AFTER PLACEMENT OF CURB AND GUTTER AND BEFORE ASPHALT PLACEMENT. PROVIDE ASPHALT RAMPING IF ONLY BINDER IS BEING PAVED. SET CASTING FLANGES ONTO A CONTINUOUS LAYER OF MASTIC ROPE.  
1. CONTRACTOR SHALL INSTALL CONCRETE COLLAR AT THEIR COST AROUND MANHOLE IF 1/4 TO 1/2- INCH TOLERANCE CANNOT BE ACHIEVED.  
C. SET INLET FRAMES TO FINISH GRADE, UNLESS INTERIM INLETS ARE CALLED FOR ON THE DRAWINGS. SET CASTING FLANGES ONTO A CONTINUOUS LAYER OF MASTIC ROPE.

SECTION 34 71 00 HARTLAND ROADWAY CONSTRUCTION

- PART 1 – GENERAL  
1.01 SUBMITTALS  
A. ACTION:  
1. FOLLOW 01 33 00 FOR:  
a. PRODUCT DATA.  
b. SIEVE ANALYSES FROM STATE-CERTIFIED LABORATORY.  
c. MIX DESIGN. SUBMIT AT LEAST 7 DAYS BEFORE PAVING:  
1) ASPHALTIC CONCRETE PAVEMENT. FOLLOW STATE SPECIFICATION 460.2.7.  
2) PORTLAND CEMENT CONCRETE CURB AND GUTTER, DRIVEWAY, SIDEWALK.  
3) HIGH-EARLY-STRENGTH CONCRETE. FOLLOW STATE SPECIFICATION 415.2.1.  
d. WISCONSIN DOT-VERIFIED HOT MIX ASPHALT (HMA) PAVEMENT MIX DESIGN FOR EACH PAVEMENT CLASSIFICATION SPECIFIED. SUBMIT AT LEAST 7 DAYS BEFORE PAVING.  
B. INFORMATIONAL:  
1. BASE COMPACTION TEST REPORTS: FOLLOW 01 43 26.  
2. SUBBASE COMPACTION TEST REPORTS. FOLLOW 01 43 26.  
3. PAVING MIX DELIVERY TICKETS.  
a. ASPHALTIC MATERIALS:  
1) FURNISH TICKET BEFORE PLACING MATERIAL.  
2) DISPLAY ON TICKET:  
a) PROJECT.  
b) DATE.  
c) TIME.  
d) TICKET NUMBER.  
e) TYPE OF MIX.  
f) GROSS WEIGHT.  
g) TARE WEIGHT.  
h) NET WEIGHT.  
i) JOB TOTAL.  
b. CONCRETE:  
1) FURNISH TICKETS AFTER DELIVERY.  
2) DISPLAY ON TICKET:  
a) PROJECT.  
b) DATE.  
c) TIME.  
d) TICKET NUMBER.  
e) CLASS OF CONCRETE.  
f) GRADE OF CONCRETE.  
g) CEMENT WEIGHT.  
h) FLY ASH TYPE AND WEIGHT.  
i) FINE AGGREGATE WEIGHT.  
j) COARSE AGGREGATE WEIGHT.  
k) GALLONS OF WATER.  
l) TIME WATER WAS ADDED.  
m) ADDITIVES.  
4. BASE COURSE DELIVERY TICKETS THAT DISPLAY:  
a. PROJECT.  
b. DATE.  
c. TICKET NUMBER.  
d. TYPE OF MATERIAL.  
e. GROSS WEIGHT.  
f. TARE WEIGHT.  
g. NET WEIGHT.  
h. JOB TOTAL.  
5. WRITTEN CONCRETE CYLINDER COMPRESSION TEST RESULTS. SUBMIT TO ENGINEER.  
6. PROVIDE QUALITY MANAGEMENT PROGRAM FOLLOWING STATE SPECIFICATIONS 460.2.8.1. GENERAL AND 460.2.8.2. CONTRACTOR TESTING CONTROL PLAN INCLUDING:  
a. DO NOT USE 460.2.8.3. DEPARTMENT TESTING.  
1.07 QUALITY MANAGEMENT PROGRAM  
A. AS A CONDITION OF ACCEPTANCE, ARRANGE, CONDUCT, AND PAY FOR TESTS NECESSARY TO DEMONSTRATE SATISFACTORY COMPLIANCE WITH CONTRACT DOCUMENTS. MAKE ADJUSTMENTS AT THE PLANT NECESSARY TO MEET REQUIREMENTS OF SPECIFICATIONS INCLUDING THE INSTRUCTIONS.  
B. LAB TESTING:  
1. TEST MATERIAL FROM THE PLANT AT LEAST ONCE A DAY.  
2. MEET THE FOLLOWING PARAMETERS:  
a. AIR VOIDS (VA): FOLLOW STATE SPECIFICATIONS 460.2.8.3.1.6 AND FOLLOW STATE SPECIFICATION-ADDITIONAL SPECIAL PROVISION 460.2.1 ISSUED UNDER ASP-6.  
b. VOIDS IN THE MINERAL AGGREGATE (VMA): FOLLOW STATE SPECIFICATIONS TABLE 460-1.  
c. GRADATIONS: JOB MIX FORMULA (JMF): FOLLOW PARAGRAPH 1 OF STATE SPECIFICATION-ADDITIONAL SPECIAL PROVISION 460.2.8.2.1.5 ISSUED UNDER ASP-6.  
C. DENSITY TESTING:  
1. TAKE A MINIMUM ONE TEST PER LOCATION AND ONE TEST PER 250 TONS.  
a. USE NUCLEAR METHOD.  
b. TARGETS SPECIFIED HEREINAFTER.  
2. LOCATIONS WILL BE AT ENGINEER'S REQUEST.  
D. RESULTS AND REPORTS:  
1. MAKE FIELD ADJUSTMENTS TO KEEP MATERIAL WITHIN SPECIFIED TOLERANCES. IF TEST RESULTS FALL OUT OF TOLERANCE, INCREASE TESTING FREQUENCY UNTIL MATERIAL IS WITHIN SPECIFICATION.  
2. SUBMIT TEST REPORTS WITHIN 48 HOURS TO ENGINEER.

- PART 2 – PRODUCTS  
2.01 EMBANKMENTS OR SUBGRADE FILL  
A. FOLLOW STATE SPECIFICATIONS 207. DO NOT USE LOGS, STUMPS, BRUSH, PERISHABLE MATERIAL, FROZEN MATERIALS OR HUMUS-BEARING MATERIALS. NO STONES LARGER THAN 3-INCHES OR LUMPS ALLOWED WITHIN ENTIRE SUBGRADE OF ROADWAY, APPROACHES, CURB AND GUTTER, SIDEWALK OR PATHWAYS.  
2.02 EXCAVATION OF SUBGRADE CUT.  
A. FOLLOW STATE SPECIFICATIONS 205. NO ORGANIC MATERIAL OR STONES LARGER THAN 3-INCHES ALLOWED WITHIN UPPER 12-INCHES OF SUBGRADE OF ROADWAY, APPROACHES, CURB AND GUTTER, OR SIDEWALK OR PATHWAYS. SCARIFYING IS REQUIRED.  
2.03 EXCAVATION BELOW SUBGRADE (EBS) BACKFILL  
A. BREAKER RUN: STATE SPECIFICATION 311, MAXIMUM PARTICLE SIZE 3 INCHES.  
B. GEOTEXTILE SUBGRADE STABILIZATION MATERIAL: FOLLOW STATE SPECIFICATION 645, TYPE SAS.  
2.04 BASE COURSE  
A. USE CRUSHED LIMESTONE TRAFFIC BOND. SEE HARTLAND DETAILS DRAWINGS FOR THICKNESS AND GRADATION.  
2.05 ASPHALTIC CONCRETE PAVEMENT (HMA)  
A. BINDER COURSE (LOWER AND INTERMEDIATE LAYERS): FOLLOW STATE SPECIFICATION 460.2 AND:  
1. TYPE: SEE HARTLAND DETAIL DRAWINGS.  
2. BINDER GRADATION: SEE HARTLAND DETAIL DRAWINGS.  
3. MAXIMUM RECYCLED CONTENT: FOLLOW STATE SPECIFICATIONS 460.2.5.  
B. SURFACE COURSE (UPPER LAYER): FOLLOW STATE SPECIFICATION 460.2 AND:  
1. TYPE: SEE HARTLAND DETAIL DRAWINGS.  
2. SURFACE GRADATION: SEE HARTLAND DETAIL DRAWINGS.  
3. MAXIMUM RECYCLED MATERIAL CONTENT: FOLLOW STATE SPECIFICATIONS 460.2.5.  
C. TACK COAT: FOLLOW STATE SPECIFICATION 455.2.5 ASPHALTIC MATERIAL CSS-1H.  
2.06 INCIDENTAL CONSTRUCTION  
A. CONCRETE CURB AND GUTTER:  
1. FOLLOW STATE SPECIFICATIONS 601. MAXIMUM PARTICLE SIZE 3-INCHES, WITHIN SUBGRADE. FOLLOW 2.04 OF THIS SECTION FOR BASE COURSE.  
2. DO NOT ADD CALCIUM CHLORIDE.  
B. CONCRETE SIDEWALKS AND RAMPS:  
1. FOLLOW STATE SPECIFICATIONS 602.2. MAXIMUM PARTICLE SIZE 3-INCHES, WITHIN SUBGRADE. FOLLOW 2.04 OF THIS SECTION FOR BASE COURSE.  
2. DO NOT ADD CALCIUM CHLORIDE.  
C. CURB RAMPS.  
1. DETECTABLE WARNING FIELD COLOR: YELLOW.  
2. FOLLOW STATE SPECIFICATIONS 602.2. FURNISH METAL DETECTABLE WARNING FIELD FROM THE DOT APPROVED PRODUCTS LIST FOR THE COLOR DEFINED ABOVE.  
3. MAXIMUM PARTICLE SIZE 3-INCHES, WITHIN SUBGRADE. FOLLOW 2.04 OF THIS SECTION FOR BASE COURSE.  
E. PAVEMENT MARKING: FOLLOW STATE SPECIFICATIONS 646:  
1. EPOXY.  
F. DRAINAGE FACILITIES:  
1. CULVERT PIPE.  
b. RCP IN VALLAGE RIGHT-OF-WAY  
2. BEDDING: 3/8-INCH CLEAR STONE CHIPS.

- PART 3 – EXECUTION  
3.01 EARTHWORK  
B. ROADWAY AND DRAINAGE EXCAVATION.  
1. NO ORGANIC MATERIAL OR STONES LARGER THAN 3-INCHES ALLOWED WITHIN UPPER 12-INCHES OF SUBGRADE IN A CUT SECTION. NO ORGANIC MATERIAL OR STONES LARGER THAN 3-INCHES ALLOWED WITHIN ENTIRE SUBGRADE LAYER IN A FILL SECTION.  
D. SUBGRADE PROOF ROLL: ALLOW ENGINEER TO INSPECT PREPARED SUBGRADE AND TO WITNESS PROOF ROLL TEST BY A FULLY LOADED QUAD AXLE DUMP TRUCK. RECONSTRUCT WHERE DEFLECTION IS GREATER THAN 1/2 INCH. ADDITIONAL PROOF ROLL TESTS WILL BE PERFORMED UNTIL ENTIRE SUBGRADE PASSES.  
3.02 BASE COURSE  
A. CRUSHED AGGREGATE BASE COURSE:  
1. COMPACTION: STANDARD COMPACTION.  
b. ALLOW ENGINEER TO INSPECT PREPARED BASE COURSE AND TO WITNESS PROOF ROLL TEST BY A FULLY LOADED QUAD AXLE DUMP TRUCK. RECONSTRUCT WHERE DEFLECTION IS GREATER THAN 1/2 INCH. ADDITIONAL PROOF ROLL TESTS WILL BE PERFORMED UNTIL ENTIRE BASE COURSE PASSES.  
2. ALLOWABLE DEVIATION FROM DESIGN GRADE: 1/2 INCH.  
3.05 INCIDENTAL CONSTRUCTION  
A. CONCRETE CURB AND GUTTER:  
1. JOINTS.  
a. CONSTRUCT EXPANSION JOINTS AT:  
1) 5 FEET FROM INLETS OR CATCH BASINS.  
2) END OF CURVES.  
3) 100 FEET MAXIMUM INTERVALS.  
4) AT ONE END OF ALL CURB AND GUTTER REMOVED AND REPLACED.  
5) SINGLE LAYER 1/2-INCH THICK EXPANSIVE MATERIAL.  
b. CONSTRUCT CONTRACTION JOINTS AT 10 FEET SPACING.  
1) MINIMUM SPACING: 6 FEET.  
2) MAXIMUM SPACING: 12 FEET.  
3) MATCH ABUTTING CONCRETE JOINTS.  
4) DEPTH: MINIMUM 2 INCHES.  
2. CURING:  
a. APPLY IMPERVIOUS COATING WITHIN ONE HOUR OF PLACEMENT. COAT ALL SIDES OF CURB  
B. SIDEWALKS  
2. CURB RAMPS: FOLLOW STATE SPECIFICATIONS 602.3.  
3. CURING:  
a. FOLLOW STATE SPECIFICATIONS 415.3.12.  
b. APPLY IMPERVIOUS COATING WITHIN ONE HOUR OF PLACEMENT.  
c. COAT ALL SIDES OF SIDEWALK INCLUDING EXPOSED SURFACE AFTER FORMS REMOVED.  
d. APPLY TWO COATS IN PERPENDICULAR DIRECTIONS.  
C. CONCRETE DRIVE APPROACHES:  
1. JOINTS.  
a. EXPANSION JOINTS ABUTTING CURB OR WALK: USE 1/2-INCH EXPANSION JOINT FILLER.  
2. CURING:  
a. APPLY TWO COATS IN PERPENDICULAR DIRECTIONS.  
F. DRAINAGE FACILITIES:  
3. BACKFILL WITH:  
a. EXCAVATED MATERIAL-WHEN GRANULAR GRADATION IS MET. MAXIMUM PARTICLE SIZE 3-INCHES.  
b. GRANULAR BACKFILL.  
4. CONSOLIDATE BACKFILL BY: FLOODING.



**PROJECT:**  
**"EAST 50 ACRES"** RESIDENTIAL DEVELOPMENT  
LAKE COUNTRY LUTHERAN LAND  
VILLAGE OF HARTLAND, WISCONSIN  
BY: NEUMANN DEVELOPMENTS, INC.  
N27W24025 PAUL COURT, SUITE 100  
PEWAUKEE, WI 53072

| REVISION HISTORY |                       |
|------------------|-----------------------|
| DATE             | DESCRIPTION           |
| 03/08/20         | PLAN COMMISSION       |
| 04/10/20         | PRELIMINARY SUBMITTAL |
| 04/28/20         | REVISED SITE PLAN     |
| 05/08/20         | REVISED SITE PLAN     |
|                  |                       |
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|                  |                       |
|                  |                       |
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**DATE:**  
**MAY 8, 2020**

**JOB NUMBER:**  
**19023-953**

**DESCRIPTION:**

**CONSTRUCTION SPECIFICATIONS**

**SHEET**

**C1.6**