

**ISABELLA COUNTY**  
**Application for Special Use Permit**

**Applicant:**

Name Lapham Associates Owner  Agent  Other interest (circle one)  
Address 116 S. Third Street, West Branch, MI 48661  
Phone (989) 345- 5030 Fax (989) 345- 7302

**Property Owner: (if different from applicant)**

Name Gilmore Township  
Address 7972 N. Winn Road, Farwell, MI 48622  
Phone (989) 588- 7052 Fax \_\_\_\_\_

**Property Location:**

Township Gilmore Section 14 Zoning District AG-2  
Address 1998 Stevenson Lake Road, Farwell, MI 48622  
Tax I.D. Number 08-014-30-004-01

**Description of Project and Proposed Use:**

Proposed demolition of the existing Gilmore Township Hall building, and construction of a new build for use as public Township Hall.

Scott E. Bell Digitally signed by Scott E. Bell Date: 2023.11.17 14:31:17 -05'00' November 17, 2023  
Signature of Applicant Date

**Optional:** I hereby grant permission for members of the Isabella County Planning Commission and Zoning Administrator to enter the above described property for the purposes of gathering information related to this application.

Scott E. Bell Digitally signed by Scott E. Bell Date: 2023.11.17 14:31:43 -05'00' November 17, 2023  
Signature of Applicant Date

**NOTE:** All information received by this department is subject to the Freedom of Information Act. Under this Act, persons are allowed to request copies of said information. This includes, but not limited to, all copyrighted drawings/blueprints.

**Office Use Only**

File No. PSUP230006 Fee \$175.00 Check # CC#317729 Receipt No. 12786  
Date Application Received 11-20-23 Application Received By MR  
Legal Description Attached?  YES  NO Site Plan Attached?  YES  NO  
Applicable Ordinance Section(s) 12.05 GG

June 5, 2023

Isabella County Zoning Board of Appeals  
c/o Ray Johnson, Zoning Administrator  
200 N. Main St. Room 105  
Mt. Pleasant, MI 48858

RE: Special Use request for Gilmore Township Hall Project

Mr. Johnson,

Gilmore Township is proposing to build a new township hall on their existing township hall property. The proposed building will provide a more energy efficient and usable building to meet the township's growing needs. The new build will include parking, utilities, and stormwater management facilities. This proposed development is allowed in the AG-2 district as a Special Use as a Public and Institutional Use. In an effort to provide all the necessary information for the Planning Commission to make their decision for this approval we have prepared the following:

1. *Is the special use allowed within the site's zoning district and does the use agree with the County's comprehensive plan?*

The site is the current township hall that has been there for many years. The improvements proposed will only make the site more functional as a township hall. No mention of this type of use is referenced in your current master plan but rural township halls are typically found in residential areas as many townships may not even have other districts.

2. *Will the proposed use be detrimental to adjacent properties or land uses?*

As mentioned in the prior requirement the site is the existing township hall. The proposed improvements although may utilize more of the site are not anticipated to significantly change the current impact from the township hall. Therefore, it is our opinion that there will not be any detrimental effects on adjacent properties.

3. *How will the proposed use be designed, constructed, operated and maintained in a manner harmonious with the character of adjacent property and surrounding areas?*

The operation of the new township hall will not be different than the existing township hall is utilized. Typical day to day business of the township will be handled at the new building. Elections will be held at the new building. It is expected that the new building will be used by township residents for small gatherings such as baby showers or birthday parties.

4. *Will any hazard to adjacent property be generated by the special use or will it involve uses, activities, materials or equipment which will be detrimental to the health, safety or welfare of persons or property due to traffic, noise, smoke, odor, fumes or glare?*

Since the use as township offices, an election polling place, and small resident gatherings is currently taking place no detrimental changes will impact adjacent properties. The use as a township hall does not create noise, smoke, odor, fumes or glare.

5. *Does the special use require and have an appropriate and adequate waste handling system? If so, can person(s) responsible for the proposed special use demonstrate that the Central Michigan District Health Department has approved such a system or facility for continual use?*

Typical sanitary waste water will be treated using a standard onsite wastewater treatment utilizing a typical trench disposal system. This system's design is compliant with the "Michigan Criteria for Subsurface Sewage Disposal" and soil borings have been performed to determine the suitability of the soils. A permit application will be submitted to the Central Michigan District Health Department for their approval.

6. *Will the special use need to be conducted before 8:00 a.m. or after 8:00 p.m.? If yes, why?*

The building may occasionally be used after 8:00 p.m. for elections or long public meetings that may happen from time to time.

We appreciate the Planning Commission's time and believe that this use for this site is compliant with the general requirements and specific design standards identified in Section 12.05 (DD) of the ordinance. We look forward to your approval.

Sincerely,  
LAPHAM ASSOCIATES



Scott E. Bell, AICP Project Manager

Y:\Engineer\P230341 Gilmore Township - Hall\Zoning\SUP supporting Letter.doc

# Gilmore Township Offices



## Section 14, T.16N., R.05W., Gilmore Township, Isabella County, Michigan

SITE ADDRESS: 1998 W. Stevenson Lake Rd., Farwell, MI 48622

### Property Description:

Part of the Southwest One-quarter of the Southwest One-quarter, Section 14, T16N-R5W, Gilmore Township, Isabella County, State of Michigan, described as: Beginning at the Southwest Corner of Section 14; thence S89°59'37"E, along the South Line of said Section 14, 258.71 feet; thence N00°30'04"W, parallel with the West Section line, 208.71 feet; thence N89°59'37"W, parallel with the South Section line, 258.71 feet to the West Section line; thence S00°30'04"E, along the West Section line, 208.71 feet back to the Point of Beginning. This property is subject to an easement for the installation and maintenance of public utilities within the right-of-way of Stevenson Lake Road and Vandecar Road. Containing 1.24 acres, more or less, and being subject to restrictions, reservations, easements, rights-of-way, zoning, governmental regulations, and matters visible, if any, upon or affecting said lands.

### Sheet Index:

- C-1 Cover Sheet
- C-2 General Notes
- C-3 Topographic Survey
- C-4 Demolition Plan
- C-5 Site Plan
- C-5.1 Site Details
- C-6 Grading Plan
- C-7 Utility Plan
- C-8 Stormwater Management Plan
- C-9 SESC Plan
- C-10 SESC Key
- C-11 Landscaping Plan



**LOCATION MAP**  
N.T.S.

### Submission Table:

Nov. 17, 2023      Submit initial site plan to the Isabella County for Site Plan Approval approval.

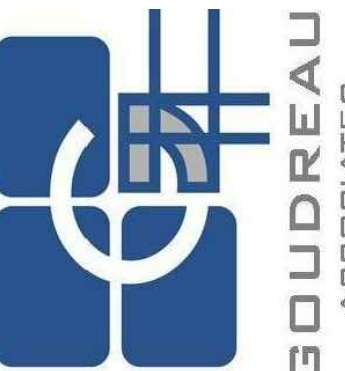


PROJECT NUMBER: P-20341	SCALE: N/A
ENGINEER: Timothy L. Lapham, P.E. 6201027595	DRAWN BY: S.E. Bell
DATE: Nov. xx, 2023	SHEET C-1
REVISED:	REVISED:
REVISED:	REVISED:

**Cover Sheet**

**Gilmore Township Office**

1998 W. Stevenson Lake Rd.  
Farwell, MI 48622



**GOUDREAU**  
ASSOCIATES

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APPROVED USE FOR:	<b>C-1</b>
● PRELIMINARY	
○ PERMIT/BID	
○ CONSTRUCTION	
○ FINAL RECORD	

- SOIL EROSION:** The DEVELOPER shall submit a detailed Soil Erosion and Sedimentation Control plan and obtain an Act 451 Part 91, Soil Erosion and Sedimentation Control permit. This includes the payment of fees and the providing of necessary bonds. **No earth changes or excavation shall be started prior to the issuance of this permit.** The DEVELOPER shall protect all existing and proposed storm sewer facilities on and adjacent to the site during excavation and construction. All sediment shall be contained on site. Any silt in county drains, storm sewer, culverts, etc. as a result of this project, shall be removed by the DEVELOPER at the cost of the DEVELOPER.
- FLOOD PLAIN OR WETLAND CONSTRUCTION:** The DEVELOPER shall apply to the Michigan Department of Environment Great Lakes and Energy (EGLE) for a permit for the alteration and/or occupation of a flood plain or floodway, as required under PA 451. Evidence of this permit may be required prior to plan approval.
- NPDES STORM WATER DISCHARGE PERMIT:** The owner of the property shall obtain a NPDES Storm Water Discharge permit for construction activities from EGLE as required under Public Act 451. The notice of coverage form shall be submitted with the Soil Erosion Control permit application. All EGLE fees shall accompany the Notice of Coverage.
- ROAD COMMISSION PERMIT:** The DEVELOPER shall obtain a permit from the Road Commission to perform work within the county Right-of-Way. All fees for the permit, bonds and insurances are the responsibility of the developer.
- MUNICIPALITY SANITARY SEWER AND WATER PERMIT:** Prior to the issuance of a building permit by the local municipality, the developer may be required to obtain a sanitary sewer and/or water tap-in permit from the owning municipality.
- STATE CONSTRUCTION PERMITS:** The water main construction permits from the Michigan Department of Environment Great Lakes and Energy shall be submitted to the EGLE after approval by the local municipality. Construction shall not begin until these state permits are issued.
- Utility Warning -** Underground locations as shown on the plans were obtained from utility owners, and were not field located. A minimum of three (3) working days prior to beginning construction, the contractor shall notify "MISS DIG" (800-482-7171) and have all underground utilities staked before any work may begin. The contractor shall be responsible for the protection and/or relocation of all utilities that may interfere with construction. Three (3) Working Days Before You DIG - Call MISS DIG (1-800-482-7171).

## OTHER NOTES

- The contractor shall be responsible to review and be familiar with all portions of these plans. Any discrepancies between different portions of the plans shall be brought to the attention of the Engineer and shall be resolved prior to construction.

## BENCHMARKS

### Benchmark #1

SET R/R SPIKE IN UTILITY POLE ON SW CORNER OF INTERSECTION.  
ELEVATION = 935.21 NAVD88

### Benchmark #2

SET R/R SPIKE IN STUB POLE 32'± EAST FROM C/L OF VANDECAR ROAD, & 130'± NORTH FROM NW CORNER OF HALL.  
ELEVATION = 927.26 NAVD88

## NRCS SOILS MAP



## PLAN LEGEND

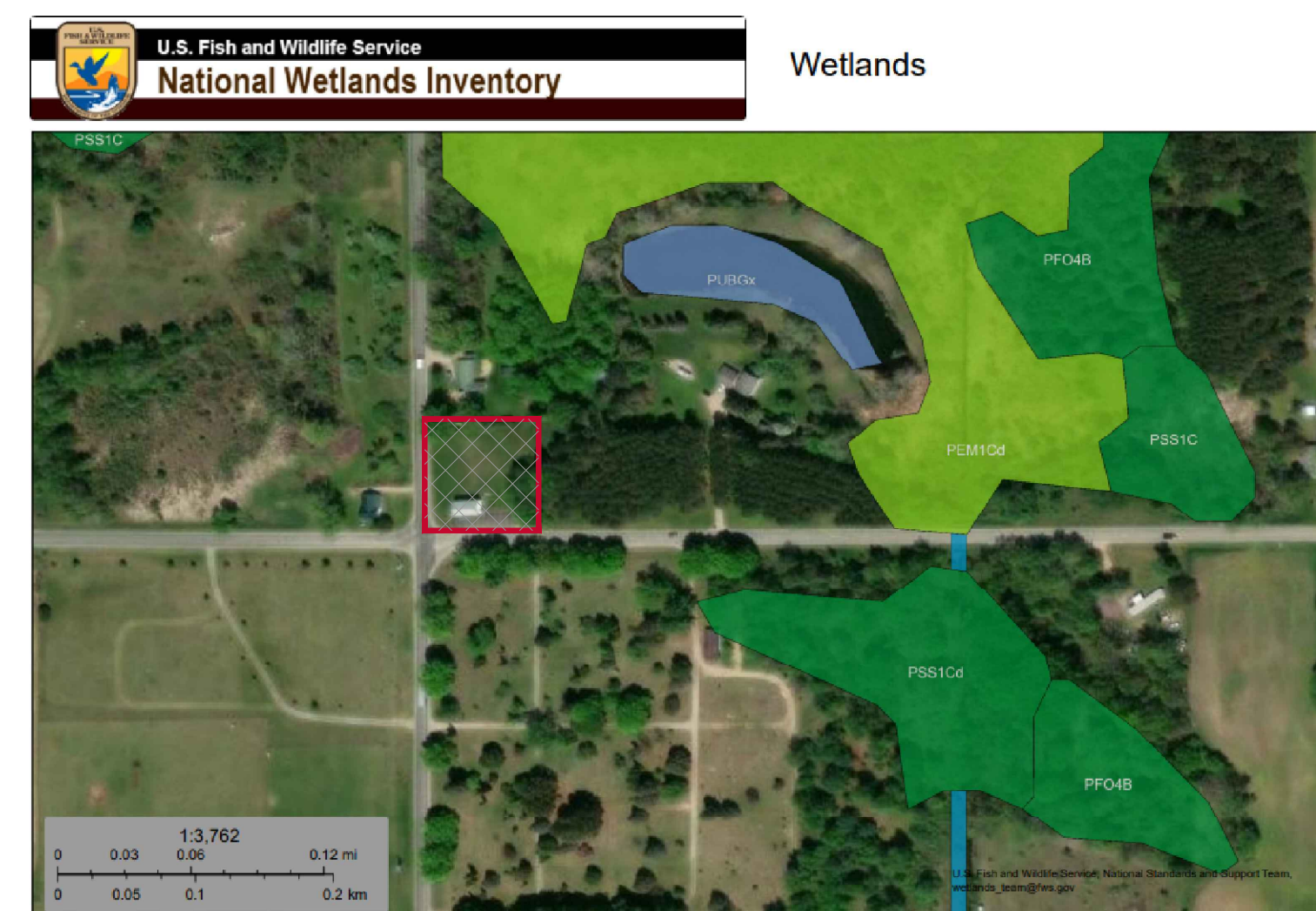
	= OVERHEAD ELECTRIC LINE
	= BURIED GAS LINE
	= SANITARY SEWER
	= WATER MAIN
	= UNDERGROUND TELEPHONE
	= SANITARY MANHOLE
	= STORM MANHOLE
	= CATCH BASIN
	= CURB INLET
	= FIRE HYDRANT
	= WATER VALVE
	= LIGHT POLE
	= STREET SIGN
	= FENCE LINE
	= UTILITY POLE
	= FOUND CAPPED IRON
	= SET CAPPED IRON
	= BITUMINOUS PAVING
	= CONCRETE PAVING OR WALKWAY
	= PLS SYSTEM CORNER
	= RECORDED AS IN TITLE DESCRIPTION
	= PREVIOUSLY DESCRIBED
	= MEASURED AS
	= PROPOSED LIGHT POLE
	= TELEPHONE RISER

## ABBREVIATIONS

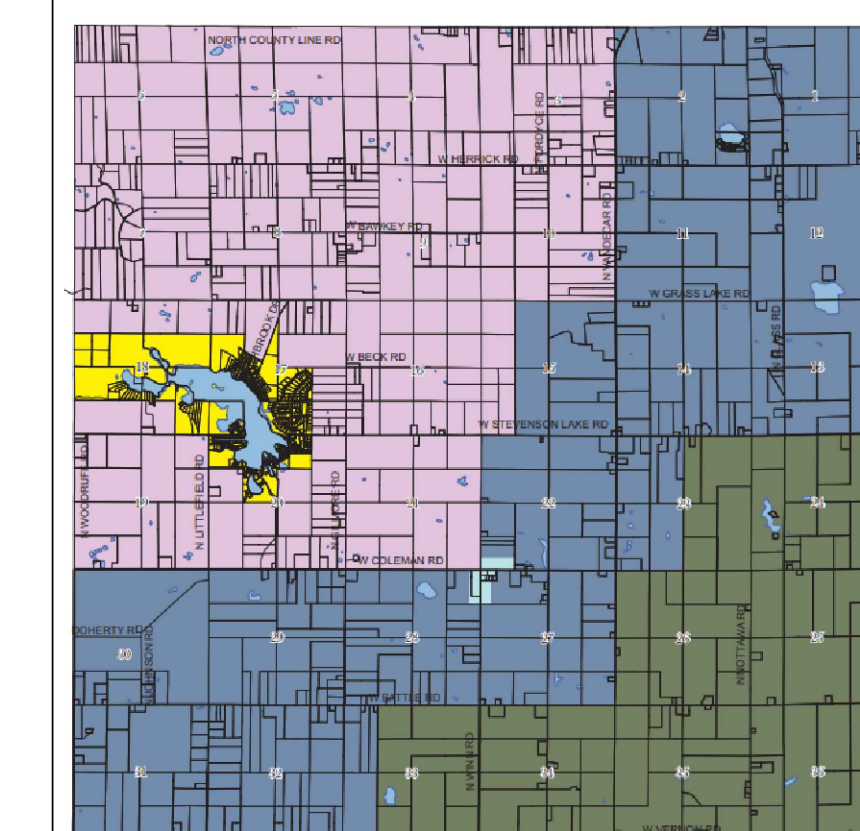
### LIST OF ABBREVIATIONS

	Definitions
A.C.	Alternating Current
A.F.C.	Adult Foster Care
ASPH.	Asphalt Paving
ASTM	American Society of Testing Materials
AWS	American Welding Society
AWWA	American Waterworks Association
BLDG.	Building
CIP	Compacted in place
CL	Class
CONC.	Concrete
C.Yd. or CYD	Cubic Yard
DR	Dimension Ratio
°	Degrees
EA	Each
EJ	East Jordan Iron Works
ELEV.	Elevation
EX	Existing
F.F.	Finish Floor
G.P.M.	Gallons Per Minute
I.D.	Inside Diameter
Inv.	Invert
Lbs.	Pounds
LFT	Lineal Feet
L.S.	Lump Sum
Max.	Maximum
MDOT	Michigan Department of Transportation
MH	Manhole
Mil.	Millimeter
Min.	Minimum
MUW	Maximum Unit Weight at optimum moisture content
No.	Number
NSF	National Sanitation Foundation
OSHA	Occupational Safety Health Administration
PSIGP	Pounds per square inch gauge
PVC	Polyvinyl Chloride
R.O.W. or R/W	Right-of-Way
RAD.	Radius
SDR	Standard Dimension Ratio
SYD	Square Yard
T.D.H.	Total Dynamic Head
V.L.F.	Vertical Lineal Feet
'	Minutes of angles or Feet
"	Seconds of angles or Inches
%	Percent
#	Pounds

## FWS Wetland Map



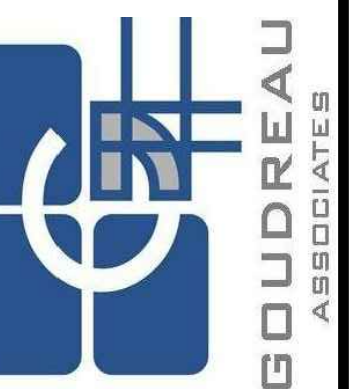
## ZONING MAP



General Notes

Gilmore Township Office

1998 W. Stevenson Lake Rd.  
Farwell, MI 48622



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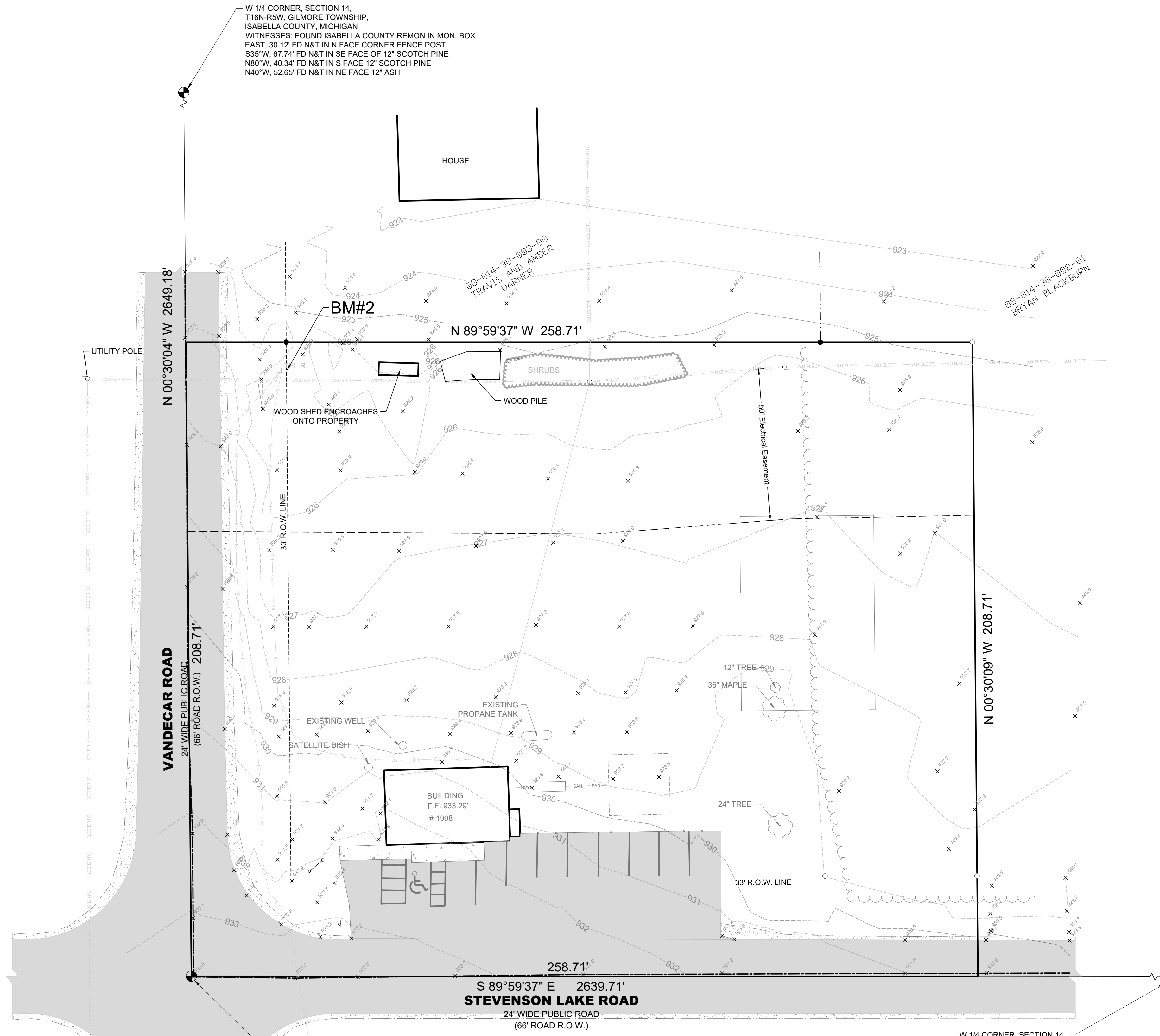
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C-2

PROJECT NUMBER: P-200341  
DRAWN BY: S.E. Bell  
ENGINEER: Timothy L. Lapham, P.E. ©2010/2019/2023  
REVISIONS:  
REVISIONS:  
REVISIONS:

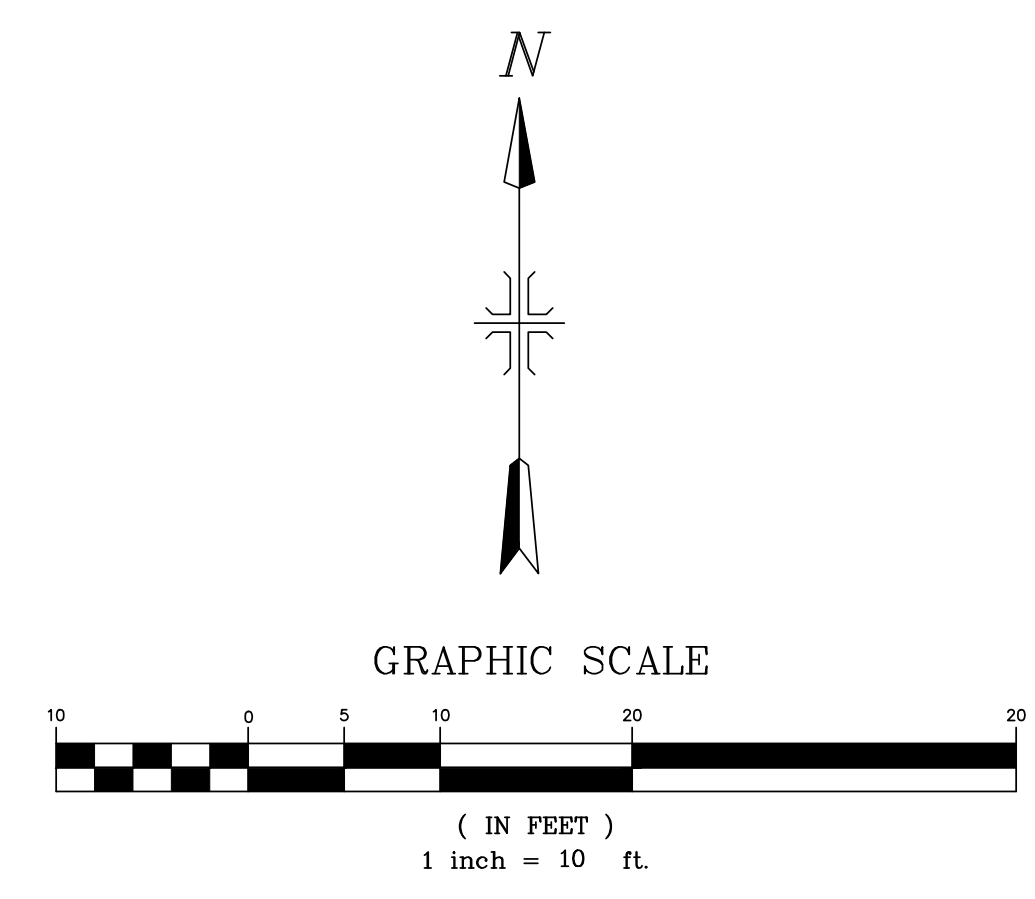
SCALE: N/A  
SHEET: C-2



W 1/4 CORNER, SECTION 14,  
T16N-R5W, GILMORE TOWNSHIP,  
ISABELLA COUNTY, MICHIGAN  
WITNESSES: FOUND ISABELLA COUNTY REMON IN MON. BOX  
EAST, 30.12' FD N&T IN N FACE CORNER FENCE POST  
S35°W, 67.74' FD N&T IN SE FACE OF 12\"/>

SW CORNER, SECTION 14,  
T16N-R5W, GILMORE TOWNSHIP,  
ISABELLA COUNTY, MICHIGAN  
WITNESSES: FOUND ISABELLA COUNTY REMON IN MON. BOX  
N58°E, 77.30' SW CORNER OF TOWNSHIP HALL  
S60°E, 64.29' FACE OF RIGHT OF WAY MARKER  
N67°W, 64.84' FD N&T IN SW FACE 15\"/>

W 1/4 CORNER, SECTION 14,  
T16N-R5W, GILMORE TOWNSHIP,  
ISABELLA COUNTY, MICHIGAN  
WITNESSES: FOUND ISABELLA COUNTY REMON IN MON. BOX  
N05°W, 86.78' FD TAG IN W FACE OF 20\"/>



PROJECT NUMBER: P-230341	SCALE: 1" = 10'
ENGINEER: Timothy L. Lapham, P.E. 6201027595	SHEET C-3
DATE: Nov. xx, 2023	
REVISIONS:	
REVISIONS:	
REVISIONS:	

**Topographic Survey**  
**Gilmore Township Office**  
 1998 W. Stevenson Lake Rd.  
 Farwell, MI 48622

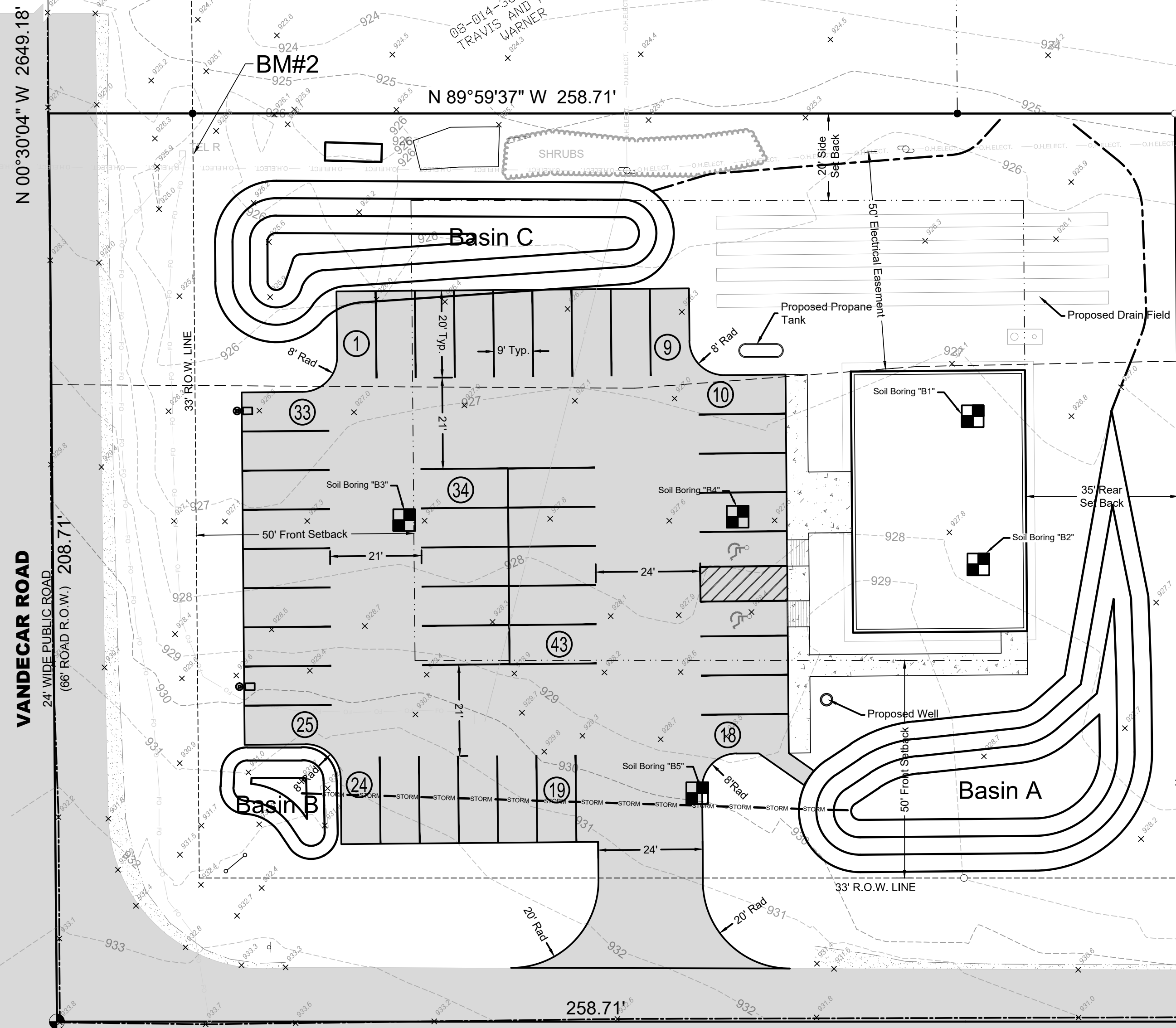


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APPROVED USE FOR:	<b>C-3</b>
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○ CONSTRUCTION	
○ FINAL RECORD	



W 1/4 CORNER, SECTION 14,  
T16N-R5W, GILMORE TOWNSHIP,  
ISABELLA COUNTY, MICHIGAN  
WITNESSES: FOUND ISABELLA COUNTY REMON IN MON. BOX  
EAST, 30.12' FD N&T IN N FACE CORNER FENCE POST  
S35°W, 67.74' FD N&T IN SE FACE OF 12" SCOTCH PINE  
N80°W, 40.34' FD N&T IN S FACE 12" SCOTCH PINE  
N40°W, 52.65' FD N&T IN NE FACE 12" ASH



**VANDECAR ROAD**  
24' WIDE PUBLIC ROAD  
(66' ROAD R.O.W.) 208.71'

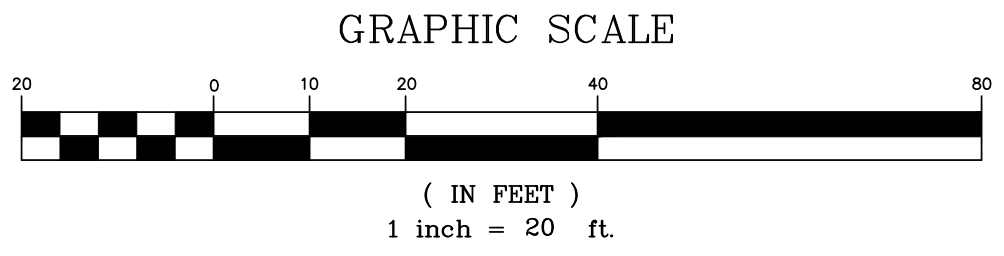
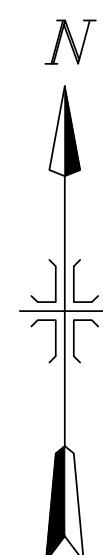
N 00°30'04" W 2649.18'

S 89°59'37" E 2639.71'  
**STEVENSON LAKE ROAD**  
24' WIDE PUBLIC ROAD  
(66' ROAD R.O.W.)

BM#1

SW CORNER, SECTION 14,  
T16N-R5W, GILMORE TOWNSHIP,  
ISABELLA COUNTY, MICHIGAN  
WITNESSES: FOUND ISABELLA COUNTY REMON IN MON. BOX  
N58°E, 77.30' SW CORNER OF TOWNSHIP HALL  
S60°E, 64.29' FACE OF RIGHT OF WAY MARKER  
N67°W, 64.84' FD N&T IN SW FACE 15" CEDAR  
S43°W, 50.93' FD N&T IN NW FACE OF POWER POLE

W 1/4 CORNER, SECTION 14,  
T16N-R5W, GILMORE TOWNSHIP,  
ISABELLA COUNTY, MICHIGAN  
WITNESSES: FOUND ISABELLA COUNTY REMON IN MON. BOX  
N05°W, 86.78' FD TAG IN W FACE OF 20" COTTONWOOD  
N51°E, 91.62' SW FACE AT BASE OF 3" WATER WELL  
S71°E, 98.53' FD TAG IN NE FACE 8" ASH  
S02°E, 51.95' FD TAG IN E FACE OF POWERPOLE



### Site Plan Notes:

- These plans and specifications are subject to modification during construction when conditions develop that were not apparent during the design and preparation of these plans. All modifications must be approved by local jurisdiction prior to construction and/or implementation. Any earthwork changes that are part of the work permitted by EGLE shall require prior approval from EGLE.
- In the event of any discrepancy between any drawing and the figures written thereon, the figures shall be taken as correct.
- Should it appear that the work to be done or any matter relative thereto is not sufficiently detailed or explained on these plans, the contractor shall contact the engineer for such further explanations as may be necessary.
- Before commencement of work, the contractor shall review all plans and specifications and the job site. The contractor shall notify the owner and the engineer of any discrepancies that may require modification to these plans or of any field conflicts. No Adjustments to any of the EGLE Floodplain and Inland Lakes and Streams permitted work is allowed without approval of EGLE.
- Contractor agrees that in accordance with generally accepted construction practices, the contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property. This requirement shall be made to apply continuously and not be limited to normal working hours.
- Contractor shall obtain all necessary permits prior to commencing construction involving right-of-ways, and for the construction, modification, or connection to facilities. All workmanship, equipment and materials shall conform to local jurisdiction standards and specifications.
- Where soil or geologic conditions encountered in grading operations are different from those generally anticipated, or where conditions warrant changes to the recommendations contained therein, a report of soil or geologic conditions shall be submitted along with proposed changes for approval and shall be accompanied by an engineer's opinion as to the safety of the site from the possibility of land slippage, settlement and seismic activity.
- Meet all current applicable ADA requirements for parking, signage, ramps, sidewalks, and warning notification on sidewalks approaching drives as required.

### Zoning Notes:

**Use:** Public Building  
**Zoning:** AG-2 "General Agricultural"  
*Public & Institutional Uses allowed with SUP*  
**Setbacks:** Front Setback 50'  
Side Setback 20'  
Rear Setback 35'  
Max. Bldg Height 35'

### Parking Calculations:

**Parking Spaces Required:**

Public Office Buildings per Sec. 6.07(D) 1 space per 800ft<sup>2</sup> UFA plus 1 space per each two employees:

2,400ft <sup>2</sup> Building x 1 space / 800ft <sup>2</sup>	3
6 Employees x 1 space / 2 employees	3
<b>TOTAL REQUIRED SPACES</b>	<b>6</b>

Dance Halls, Exhibition Halls, Pool Halls and Assembly Without Fixed Seating  
Per Sec. 6.07(D) 1 Space per Each Two (2) Persons Within the Maximum Occupancy Load:

Occupant Load 80 Persons x 1 Space/2 Persons	40 Spaces
Spaces Provided	43 Spaces
B.F. Parking Spaces	2 Spaces
<b>Total Spaces Required</b>	<b>40 Spaces</b>

PROJECT NUMBER: P-230341	SCALE: 1" = 20'
ENGINEER: Timothy L. Lapham, P.E. 6201027595	SHEET C-5
REVISIONS:	
REVISION:	
REVISION:	
REVISION:	
DATE: Nov. xx, 2023	

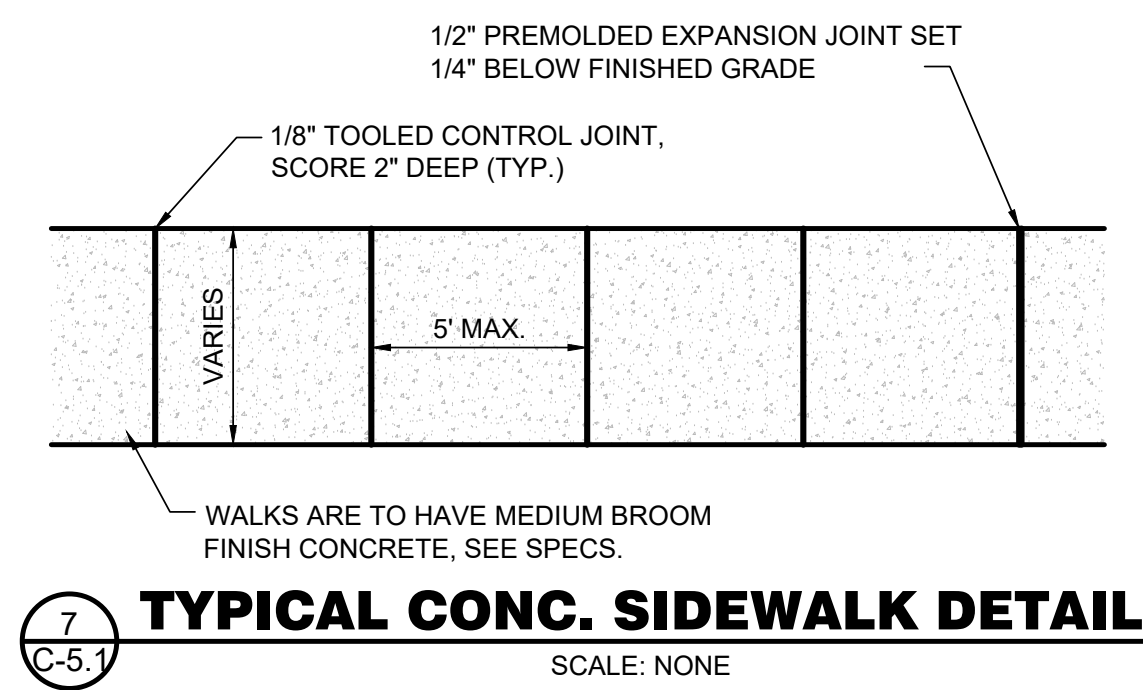
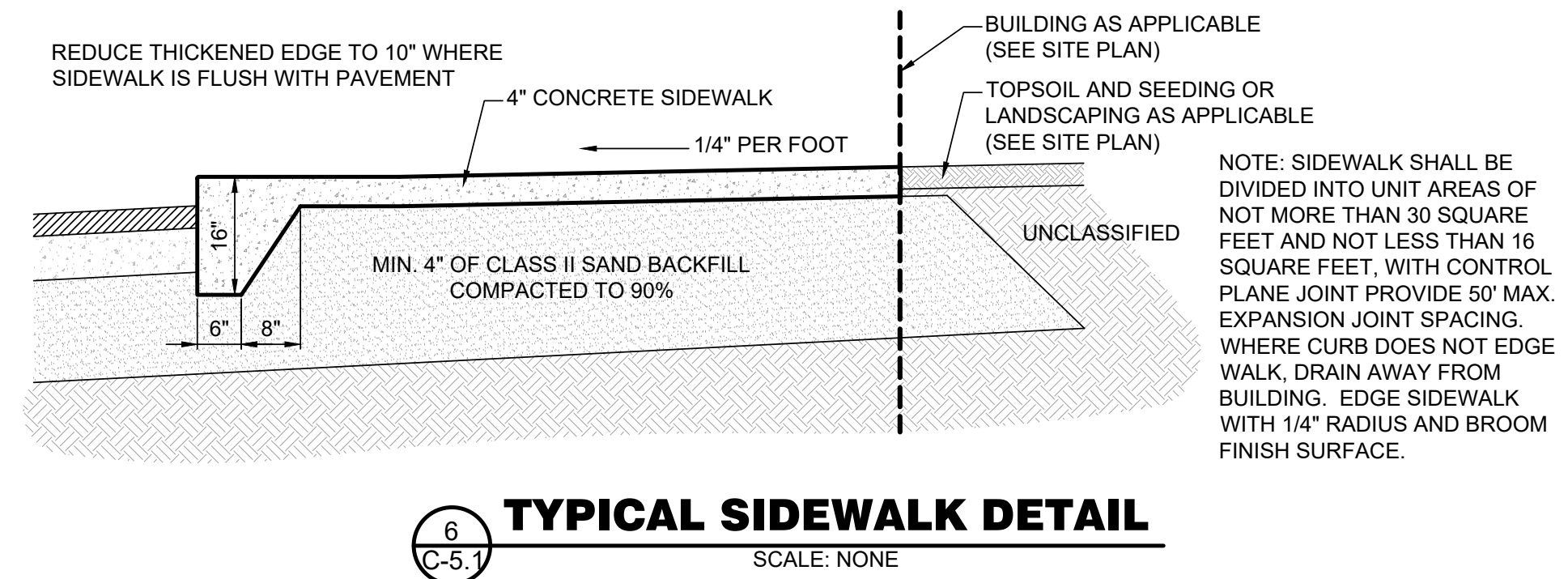
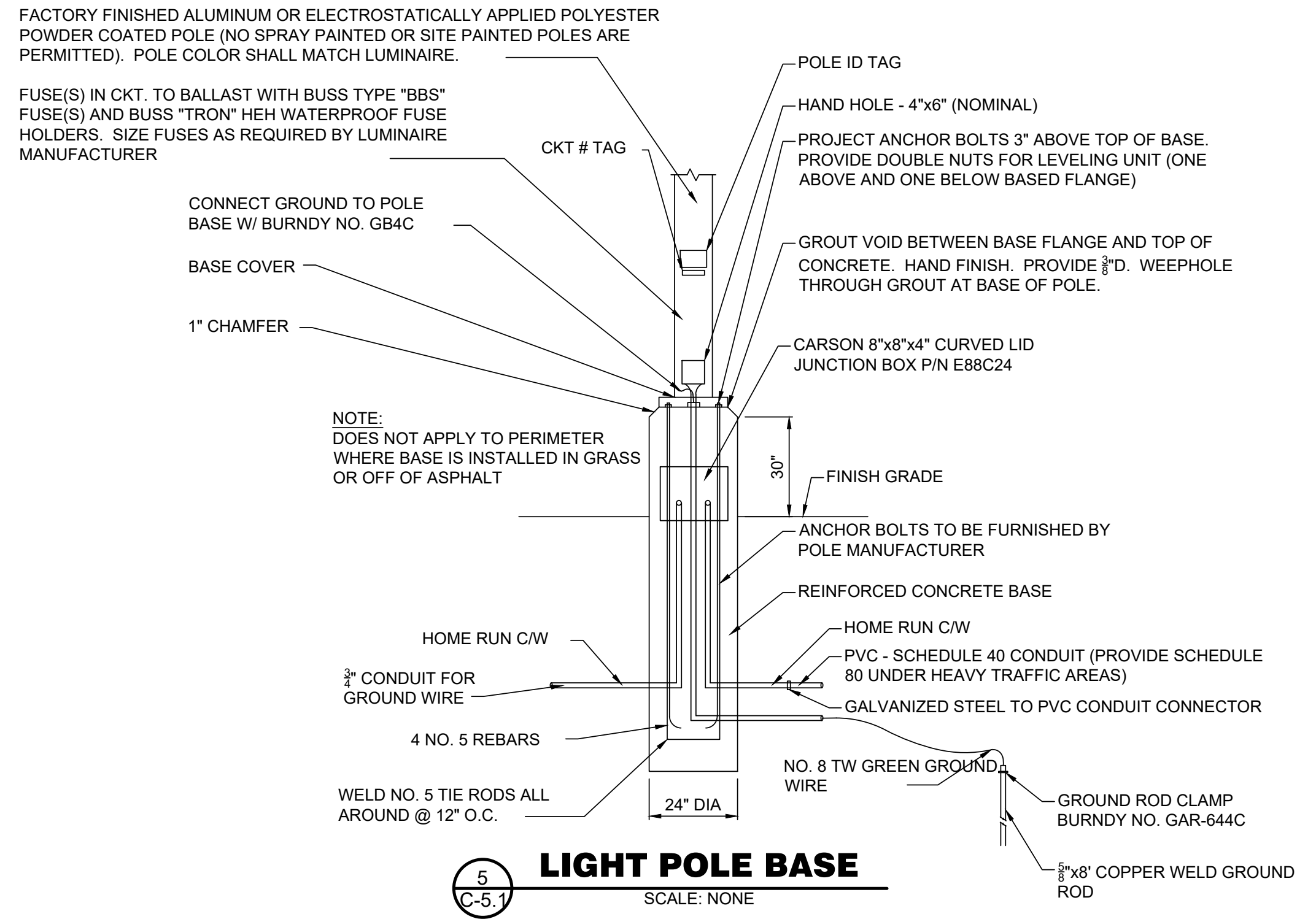
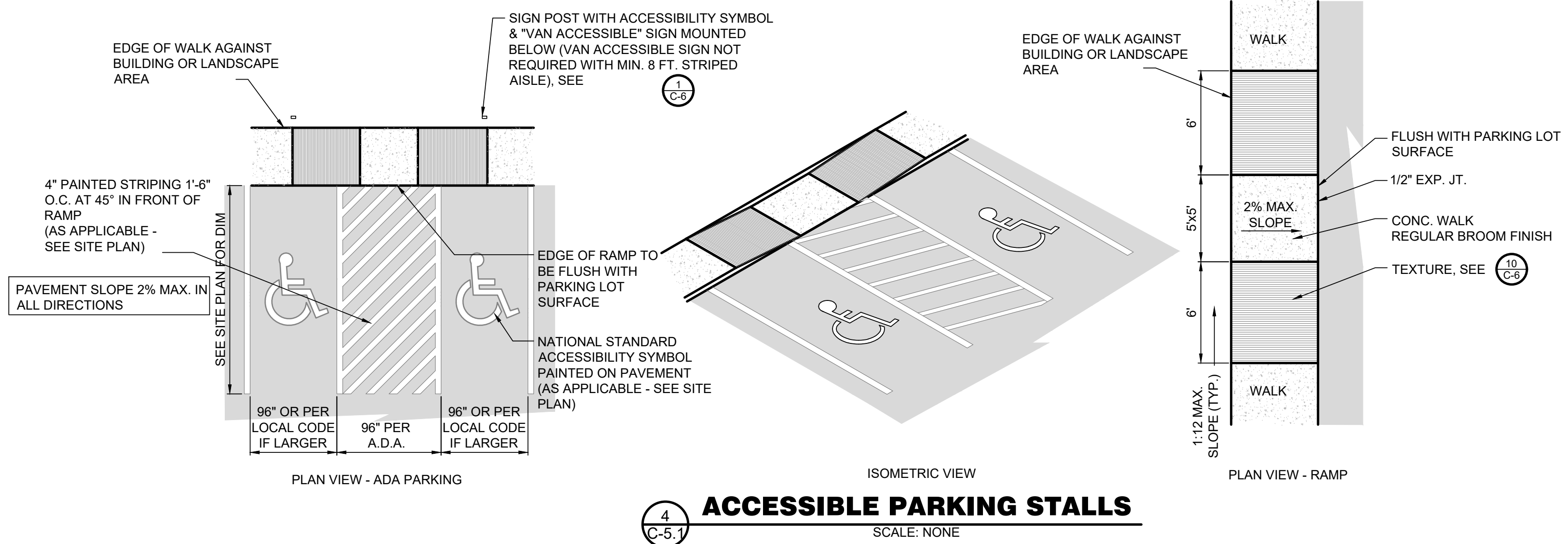
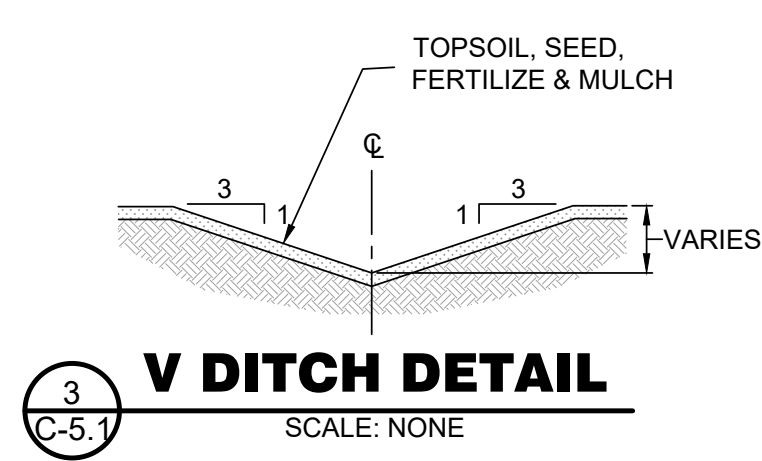
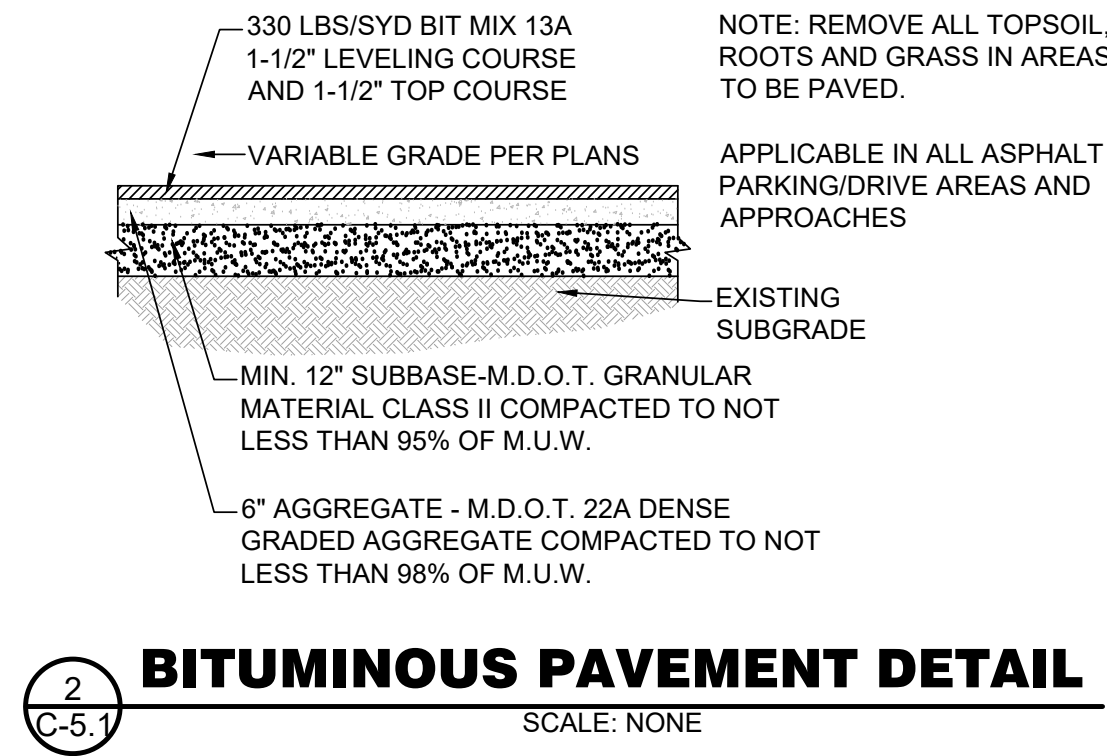
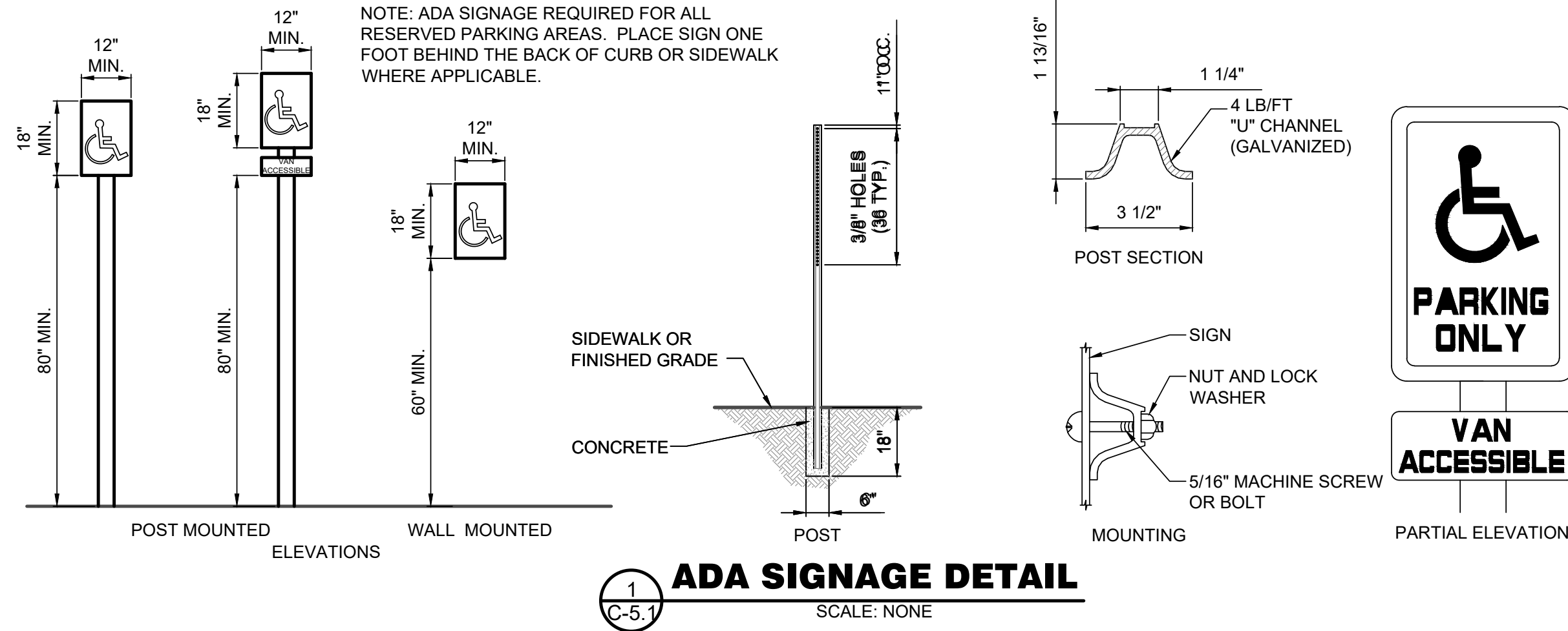
**Site Plan**  
**Gilmore Township Office**  
1998 W. Stevenson Lake Rd.  
Farwell, MI 48622



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**C-5**



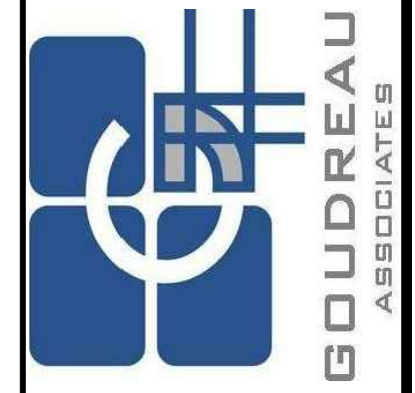


PROJECT NUMBER: P-230341	SCALE: N/A
ENGINEER: Timothy L. Lapham, P.E. 6201027595	SHEET C-5.1
REVISION:	DATE: Nov. xx, 2023
REVISION:	
REVISION:	

**Site Details**

Gilmore Township Office

1998 W. Stevenson Lake Rd.  
Farwell, MI 48622



**LAPHAM ASSOCIATES**

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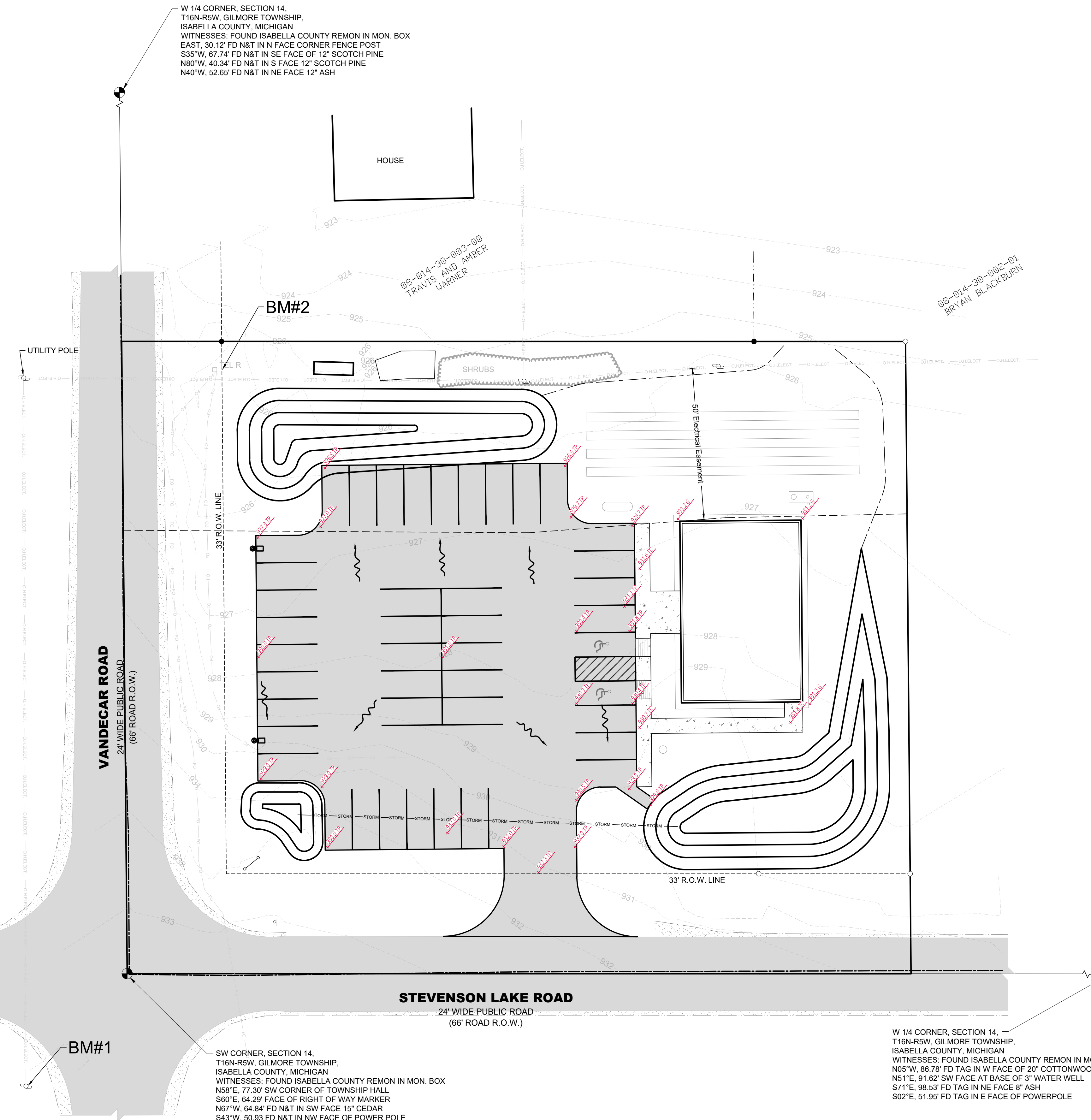
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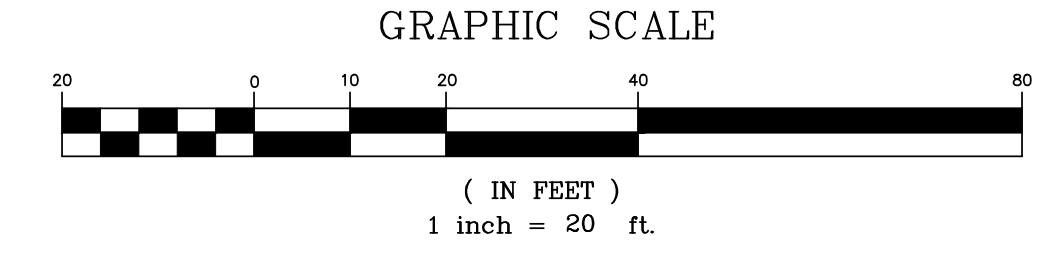
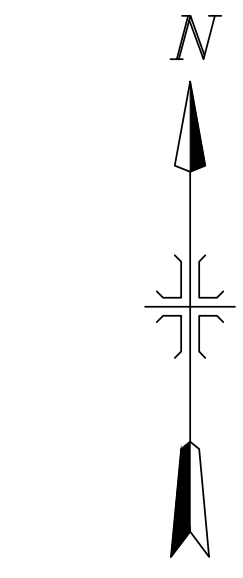
APPROVED USE FOR:	<b>C-5.1</b>
● PRELIMINARY	
○ PERMIT/BID	
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W 1/4 CORNER, SECTION 14,  
T16N-R5W, GILMORE TOWNSHIP,  
ISABELLA COUNTY, MICHIGAN  
WITNESSES: FOUND ISABELLA COUNTY REMON IN MON. BOX  
EAST, 30.12' FD N&T IN N FACE CORNER FENCE POST  
S35°W, 67.74' FD N&T IN SE FACE OF 12" SCOTCH PINE  
N80°W, 40.34' FD N&T IN S FACE 12" SCOTCH PINE  
N40°W, 52.65' FD N&T IN NE FACE 12" ASH

SW CORNER, SECTION 14,  
T16N-R5W, GILMORE TOWNSHIP,  
ISABELLA COUNTY, MICHIGAN  
WITNESSES: FOUND ISABELLA COUNTY REMON IN MON. BOX  
N58°E, 77.30' SW CORNER OF TOWNSHIP HALL  
S60°E, 64.29' FACE OF RIGHT OF WAY MARKER  
N67°W, 64.84' FD N&T IN SW FACE 15" CEDAR  
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W 1/4 CORNER, SECTION 14,  
T16N-R5W, GILMORE TOWNSHIP,  
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S71°E, 98.53' FD TAG IN NE FACE 8" ASH  
S02°E, 51.95' FD TAG IN E FACE OF POWERPOLE



**LEGEND:**

- TP - TOP OF PAVEMENT
- TC - TOP OF CONCRETE
- BC - BACK OF CURB
- GP - GUTTER PAN
- FF - FINISH FLOOR
- G - GROUND
- RIM - RIM ELEVATION
- INV - INVERT ELEVATION
- ELEVATION AT LOCATION
- DIRECTION OF SURFACE FLOW

**Grading Notes:**

1. The forms for concrete sidewalks, curbs, gutters, and driveways that are to be constructed to conform to existing roads shall be installed to the grades shown on these plans. Prior to placing concrete, the forms shall be inspected and approved by local jurisdiction for conformance to existing road improvements. Grades of new improvements are subject to field adjustment to fit conditions.
2. The contractor shall be responsible for matching existing facilities to avoid any abrupt or apparent changes in grades or cross slopes, low spots, or hazardous conditions.
3. All grading, back filling, excavation, etc., shall be in accordance with the specification or normal practice if not specified.
4. Where unstable or unsuitable materials are encountered during subgrade preparation, the area in question shall be over excavated and replaced with engineered backfill material.
5. If requested, a representative of the engineer shall be on the site during grading operations and shall observe the construction and identify any conditions that should be corrected and recommend corrective measures to the contractor.
6. All grading, erosion, and sediment control and related work undertaken on this site shall be in accordance with local jurisdiction.
7. The contractor shall not disturb any permanent survey points without the consent of local jurisdiction. Any points destroyed shall be replaced by a licensed surveyor at the contractor's expense.
8. Grading at the boundaries shall be done so as not to obstruct the runoff of storm waters from adjacent properties.
9. All disturbed areas shall be topsoiled, seeded, fertilized and mulched.
10. Contractor to maintain all soil erosion control measures. Surrounding paved areas shall be power broomed as necessary to remove mud tracking from the site.
11. Contractor shall obtain soil erosion permit prior to any construction.
12. All structures, sidewalks, curbs and asphalt shall have a minimum of 12" of clean granular material (MDOT Class II) as a sub-base and compacted to 95% maximum unit density. If pumping or yielding is caused by the compactive efforts, the sand layer shall be increased until density can be obtained without pumping water through the subgrade.

PROJECT NUMBER: P-230341	DRAWN BY: S.E. Bell	SCALE: 1" = 20'
ENGINEER: Timothy L. Lapham, P.E. 6201027595	DATE: Nov. xx, 2023	SHEET C-6
REVISED:	REVISED:	REVISED:

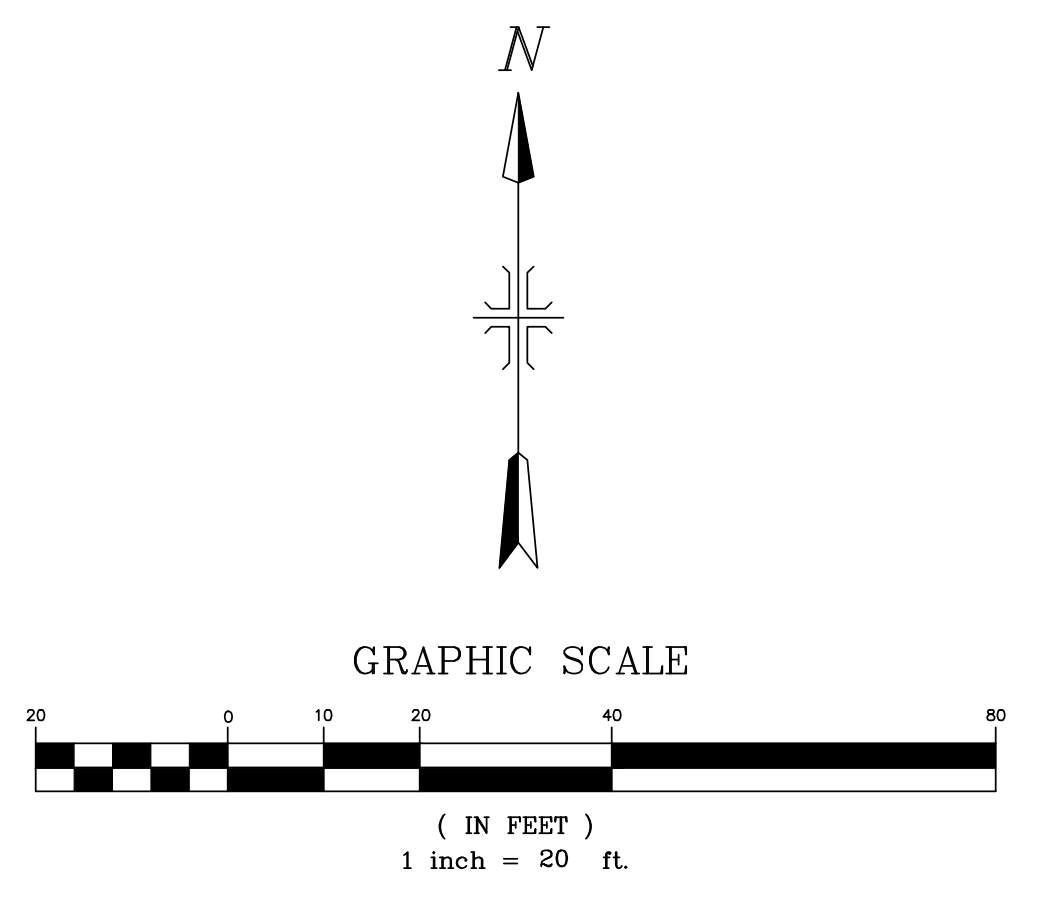
**Grading Plan**  
**Gilmore Township Office**  
 1998 W. Stevenson Lake Rd.  
 Farwell, MI 48622



**LAPHAM ASSOCIATES**  
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APPROVED USE FOR:	<b>C-6</b>
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MINIMUM TRENCH WIDTHS

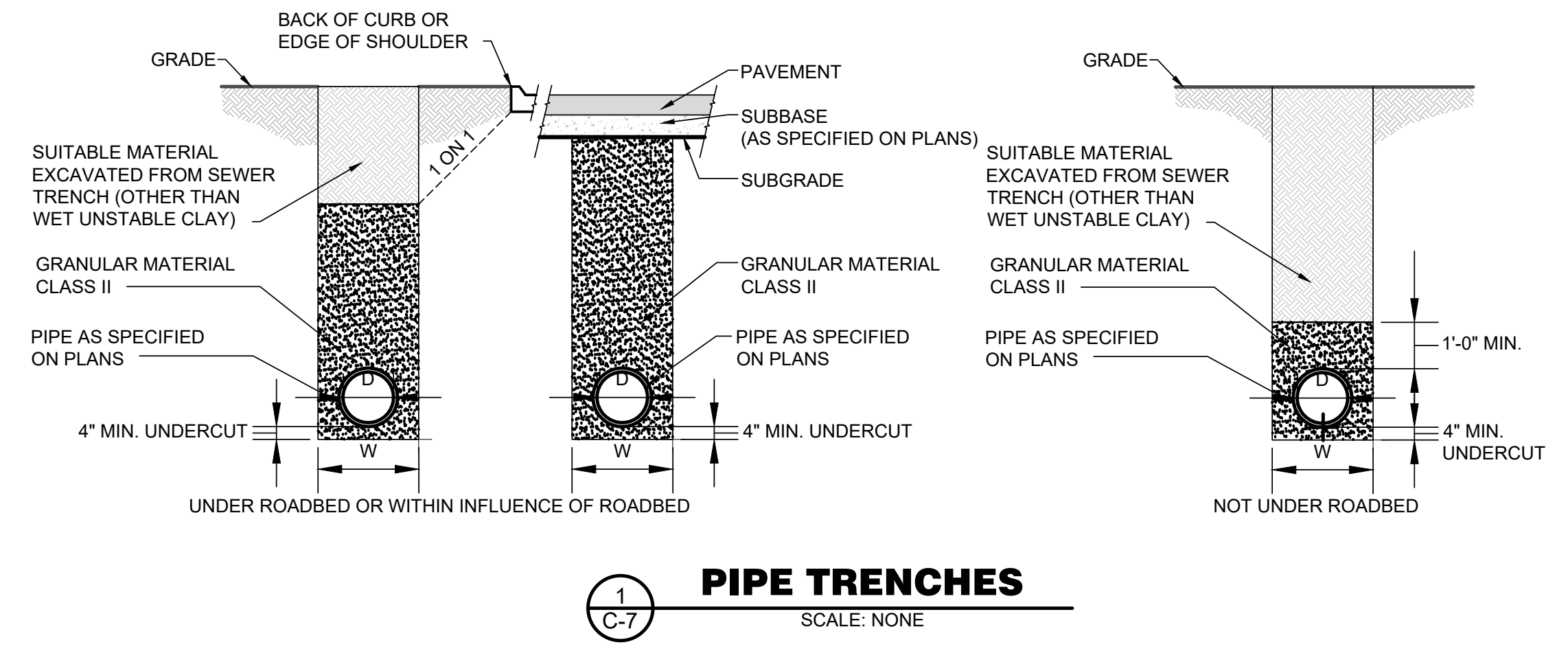
I.D. PIPE SIZE (INCHES)	LESS THAN 18	21	24	30	36
"W" TRENCH WIDTH (FEET)	3.0	3.5	4.0	5.0	6.0

I.D. PIPE SIZE (INCHES)	42	48	54	60	66	72
"W" TRENCH WIDTH (FEET)	7.0	8.0	9.5	10.0	10.5	11.0

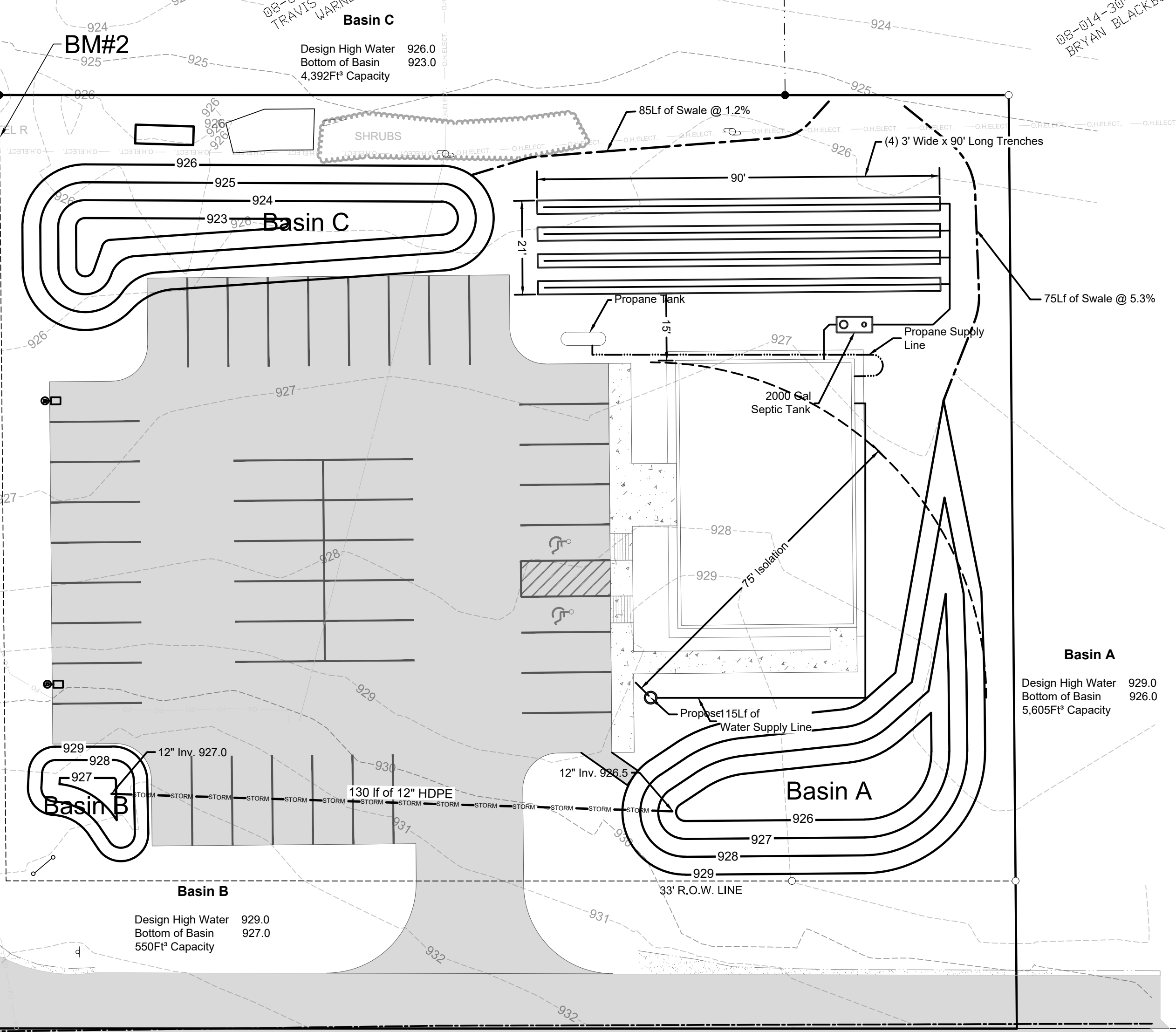
I.D. PIPE SIZE (INCHES)	78	84	90	96	102	108
"W" TRENCH WIDTH (FEET)	11.5	12.0	12.5	13.0	13.5	14.0



**PIPE TRENCHES**  
SCALE: NONE

**VANDECAR ROAD**  
24' WIDE PUBLIC ROAD  
(66' ROAD R.O.W.)

**STEVENSON LAKE ROAD**  
24' WIDE PUBLIC ROAD  
(66' ROAD R.O.W.)



**Basin B**  
Design High Water 929.0  
Bottom of Basin 927.0  
550Ft<sup>3</sup> Capacity

**Basin A**  
Design High Water 929.0  
Bottom of Basin 926.0  
5,605Ft<sup>3</sup> Capacity

**Basin C**  
Design High Water 926.0  
Bottom of Basin 923.0  
4,392Ft<sup>3</sup> Capacity

### Septic System Basis Of Design:

40 Occupants Per Maximum Occupancy Of Building  
At 5 Gallons Per Occupant = 2000 GPD Design Flow

Use Trench System w/ 18" Of Stone Below Pipe. (4) Four  
Trenches at 3' Wide x 90' Long.

3' x 90" = 270Ft<sup>2</sup> Bottom Area  
186' x 1.5' = 279Ft<sup>2</sup> Side Wall Area  
549Ft<sup>2</sup> Absorption Area Per Trench

Total 549Ft<sup>2</sup> x 4 = 2,196Ft<sup>2</sup> Total Absorption Area

Application Rate = 2,000GPD/2,196Ft<sup>2</sup> = 0.91 Gallon Per Sqft/Day

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Utility Plan  
Gilmore Township Office  
1998 W. Stevenson Lake Rd.  
Farwell, MI 48622

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PROJECT NUMBER: P-230341  
ENGINEER: Timothy L. Lapham, P.E. 6201027558  
DATE: Nov. xx, 2023  
DRAWN BY: S.E. Bell  
SCALE: 1" = 20'  
SHEET C-7

**C-7**

W 1/4 CORNER, SECTION 14,  
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**Storm Water Sizing Requirements (from TR-55 Worksheets):**

Total Contributing Area = ±1.2 Acres = 0.0019 sq. mi  
Soil Type "C"  
Impervious Area = 0.42 Acres @ CN 98  
Pervious Soil = 0.82 Acres @ CN 79  
Cumulative Site CN = 85.4 use 85

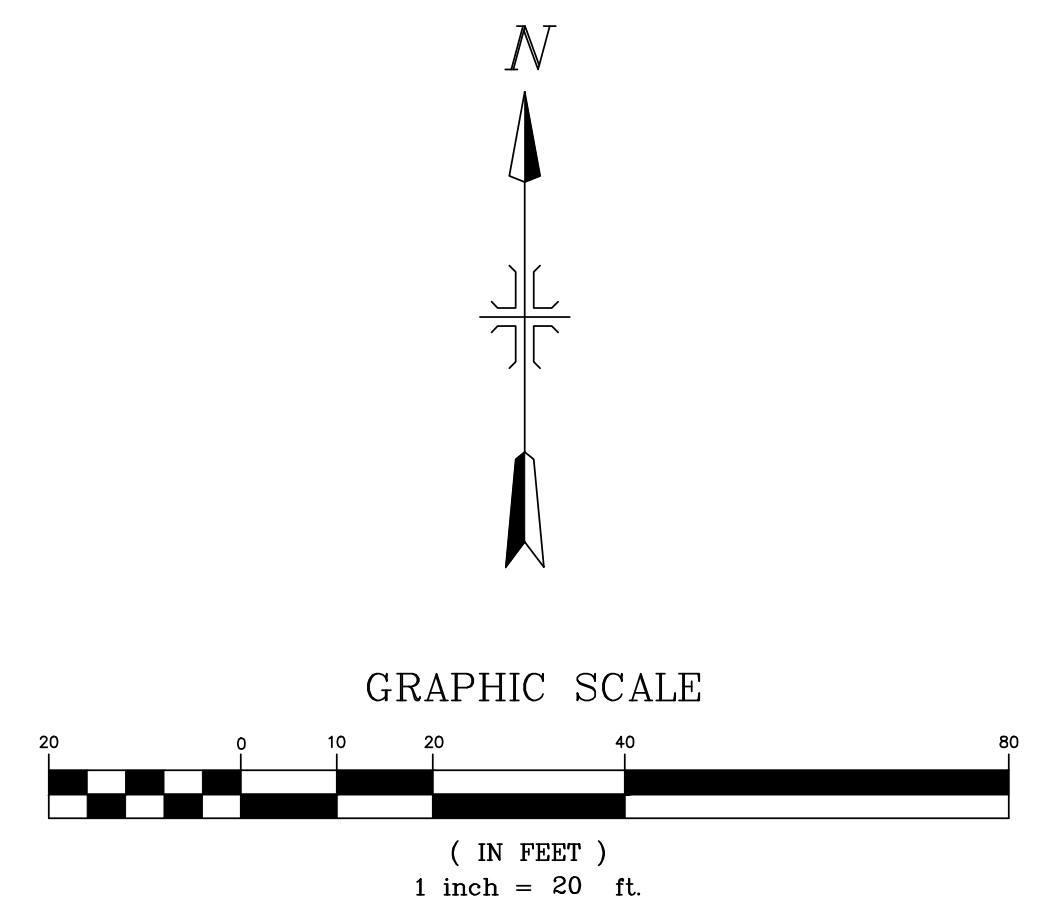
Design Storm Event = 5 inches in a 24-hour period (per City of Midland Chapter 29 Regulations)  
S = 1000/CN - 10 = 1000/85 - 10 = 11.76 - 10 = 1.76  
Runoff (Q) =  $(P-0.2S)^2 = (5 - 1.35)^2 = 21.62 = 3.37$  inches  
 $(P+0.8S) \quad (5 + 1.41) \quad 6.41$

Time of Concentration = ± 5 Minutes  
Tc = 10 Minute Minimum = 0.17 Hr  
Initial Abstraction (Ia) (from Table 4-1) = 0.151  
Ia / P = 0.151 / 3.37 = 0.04

Unit Peak Discharge (Qu) (from Exhibit 4-II) = 900  
Peak Inflow Discharge (Qi) = QuAQ = 900 x 0.0019 x 3.37 = 5.76 cfs  
Peak Outflow Discharge (Qo) = Limited to 0.2 cfs/acre = 1.24 acres x 0.2 cfs/acre = 0.24 cfs Max.  
Qo/Qi = 0.24 / 5.76 = 0.04 (Use Minimum Qo/Qi = 0.1) Qi = 0.34 / .1 = 3.4

Vs/Vr (Extrapolated From Figure 6-1 and utilizing Qo/Qi and Tc) = 0.55  
Volume Runoff (Vr) = Q x A x 53.33 = 3.37 x 0.0019 x 53.33 = 0.34 Ac-ft  
Volume Storage (Vs) = Vr (0.55) = 0.19 x 43,560 = 8,276 cu. ft.

VOLUME PROVIDED: 10,547 cu. ft. > 8,276 cu. ft.



**BASIN A STAGE STORAGE TABLE**

ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)
926	650	N/A	N/A	0
927	1316	1	983	983
928	2254	1	1785	2768
929	3419	1	2837	5605

**BASIN B STAGE STORAGE TABLE**

ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)
927	50	N/A	N/A	0
928	272	1	161	161
929	506	1	389	550

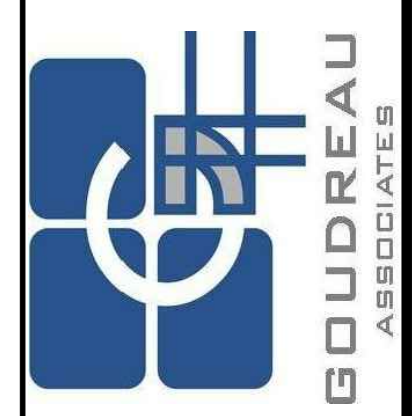
**BASIN C STAGE STORAGE TABLE**

ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)
923	210	N/A	N/A	0
924	1002	1	606	606
925	1869	1	1435	2042
926	2831	1	2350	4392

**Grading & Storm Water Notes:**

- Roof drains from the building shall be connected to drain tiles that discharge into catch basins or the detention basin.

Stormwater Management Plan  
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**C-8**

PROJECT NUMBER: P-230341  
ENGINEER: Timothy L. Lapham, P.E. ©2010/2023  
DRAWN BY: S.E. Bell  
SCALE: 1" = 20'  
SHEET C-8