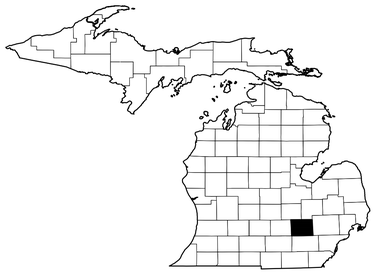
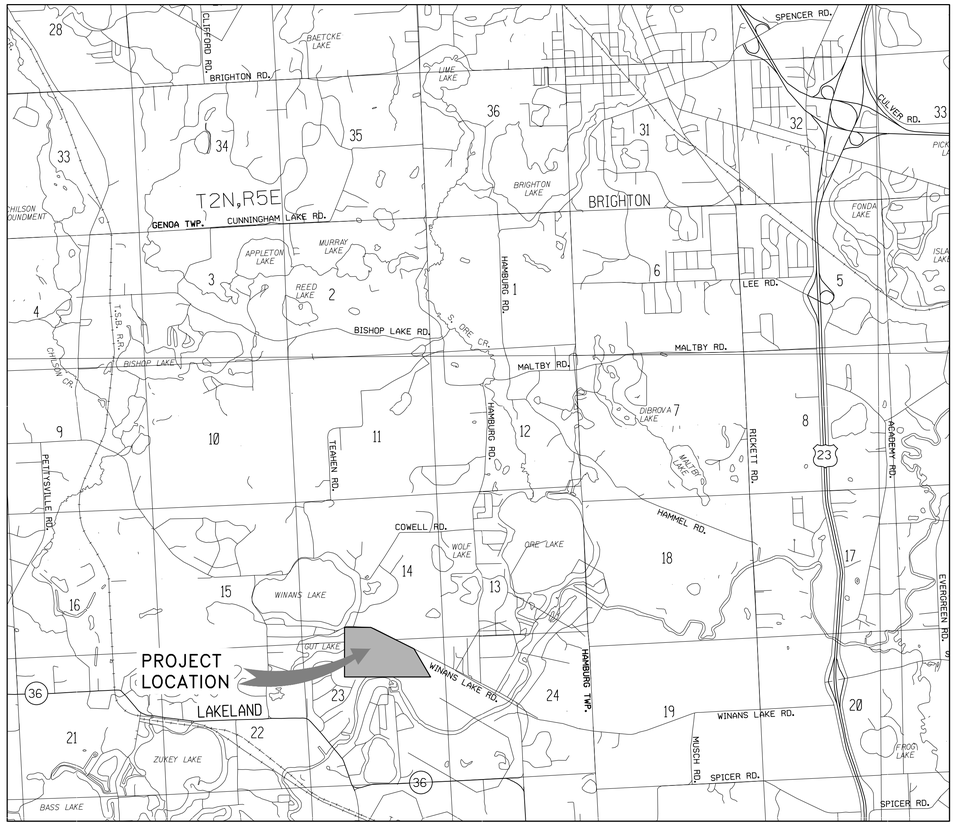
SITE PLANS
FOR
FREEDOM RIVER CAMPGROUND
6716 WINANS LAKE ROAD
SECTIONS 14 AND 23, T1N, R5E
LIVINGSTON COUNTY, HAMBURG TOWNSHIP, MI 48116



KEY MAP
NOT TO SCALE

CONTACTS	
OWNER/DEVELOPER	FREEDOM RIVER, INC. 9305 HURON RAPIDS DRIVE, WHITMORE LAKE, MI 48189 734.231.2792 JANNA YEAKEY
CIVIL ENGINEER	WADE TRIM 25251 NORTHLINE ROAD, TAYLOR, MI 48180 734.947.9700 GREG SPIESS, PE GSPIESS@WADETRIM.COM
ELECTRIC	DTE ENERGY 1095 LAWSON, HOWELL, MI 48843 734.332.8145
GAS	CONSUMERS ENERGY ONE ENERGY PLAZA, JACKSON, MI 49201 517.788.7194
WATER & SEWER	HAMBURG TOWNSHIP 10405 MERRILL ROAD, HAMBURG, MI 48139 810.231.1000
PLANNING & ZONING	HAMBURG TOWNSHIP 10405 MERRILL ROAD, HAMBURG, MI 48139 810.231.1000
ROADS	LIVINGSTON COUNTY ROAD COMMISSION 3535 GRAND OAKS DRIVE, HOWELL, MI 48843 517.546.4250
STORM WATER	LIVINGSTON COUNTY DRAIN COMMISSION 2300 E GRAND RIVER, HOWELL, MI 48843 517.546.0040
SOIL EROSION CONTROL	LIVINGSTON COUNTY DRAIN COMMISSION 2300 E GRAND RIVER, HOWELL, MI 48843 517.546.0040



VICINITY MAP
NOT TO SCALE

N

SITE DATA TABLE	
TAX PARCEL #	4715-23-100-002 & 4715-14-400-008
EXISTING ZONING	WFR & NR
PROPOSED ZONING	PPRF (NR WILL REMAIN)
PROPOSED USE	CAMPGROUND, RECREATIONAL FACILITIES
MINIMUM LOT AREA	1,742,400 SF (40 ACRES)
TOTAL LOT AREA	3,678,694 SF
MINIMUM BUILDING SETBACKS	
FRONT	100'*
SIDE	50'*
REAR	100'*
WETLANDS/BODY OF WATER	100'
ACTUAL SETBACKS	
FRONT (NORTH)	100.1'
SIDE (EAST)	284'
SIDE (WEST)	190.1'
REAR (SOUTH)	160.5'
REQUIRED PARKING SPACE SIZE	10'x20'
PROP. PARKING SPACE SIZE	10'x20'

*PER SECTION 36-185.(b)(2)c - BUILDINGS, STRUCTURES, OR USE AREAS SHALL BE 200 FEET FROM ANY PROPERTY LINE WHEN ABUTTING A RESIDENTIAL DISTRICT.

PARKING REQUIREMENTS	
TYPE	NO. OF SPACES
REQUIRED	
PER EGLE PUBLIC HEALTH CODE ACT 368 OF 1978 SECTION R325.1558.2 "ROADS AND VEHICLES": A CAMPGROUND OWNER SHALL PROVIDE SPACE FOR VEHICLE PARKING EQUAL TO A MINIMUM OF 1.5 THE NUMBER OF SITES IN A CAMPGROUND RV SITES: 27 x 1.5 = 41 SPACES CABINS: 27 x 1.5 = 41 SPACES TENTS: 20 x 1.5 = 30 SPACES	
PARKING REQUIRED	112
REGULAR SPACES	107
BARRIER FREE SPACES	5 (1 VAN)
PARKING PROVIDED	220
REGULAR SPACES	201
BARRIER FREE SPACES	19

SHEET INDEX	
GENERAL SHEETS	SHEET NO.
COVER SHEET	C0.0
GENERAL NOTES AND LEGENDS	C0.1
EXISTING CONDITIONS PLAN	C1.0
SESC PLAN - A	C2.1
SESC PLAN - B	C2.2
SESC PLAN - C	C2.3
SESC PLAN - D	C2.4
SESC DETAILS	C2.5
DEMOLITION PLAN - A	C2.6
DEMOLITION PLAN - B	C2.7
DEMOLITION PLAN - C	C2.8
DEMOLITION PLAN - D	C2.9
OVERALL SITE PLAN	C3.0
SITE PLAN - A	C3.1
SITE PLAN - B	C3.2
SITE PLAN - C	C3.3
SITE PLAN - D	C3.4
SITE DETAILS	C3.5
DRAINAGE AREA PLAN	C4.0
STORMWATER CALCULATIONS	C4.1
OVERALL UTILITY PLAN - SANITARY	C5.0
OVERALL STM SWR PLAN - STORM	C5.1
UTILITY DETAILS	C5.2
SANITARY PROFILES - A	C5.3
SANITARY PROFILES - B	C5.4
SANITARY PROFILES - C	C5.5
OVERALL LANDSCAPE PLAN	L1.0
STREET BUFFER PLAN	L1.1
STREET BUFFER PLAN	L1.2
EAST GREENBELTPLAN	L1.3
EAST GREENBELTPLAN	L1.4
SOUTH GREENBELTPLAN	L1.5
PLANT SCHEDULE & DETAILS	L1.6
LANDSCAPE NOTES	L1.7

LEGAL DESCRIPTION:

PARCEL NUMBER: 4715-23-100-002
(OBTAINED FROM LIVINGSTON COUNTY GIS MAP DATA)

SEC 23 T1N R5E NE1/4 OF NW1/4 ALSO NW1/4 OF NE FRL 1/4 EXC 1.5 AC N OF HWY ALSO 7 AC IN SW1/4 OF NE FRL 1/4 NE OF HURON RIVER 85 AC

PARCEL NUMBER: 4715-14-400-008
(OBTAINED FROM LIVINGSTON COUNTY GIS MAP DATA)

SEC 14 T1N R5E 8.5 AC OF SW 1/4 OF SE 1/4 S OF HWY & E 343.2 FT OF SE 1/4 OF SW 1/4 S OF HWY

DATE	DESCRIPTION	BY
7/19/23	SITE PLAN SUBMITTAL REVISION #1	GLS
6/1/23	SITE PLAN SUBMITTAL	GLS

REVISIONS

JOB NO. VCM2001

SHEET C0.0

WADE TRIM

PREPARED UNDER THE SUPERVISION OF:

STATE OF MICHIGAN
GREGORY L. SPIESS
ENGINEER
No. 69058
LICENSED PROFESSIONAL ENGINEER

GREGORY L. SPIESS, PE
STATE OF MICHIGAN NO. 69058

811 Know what's below. Call before you dig.

PROJECT MANAGER: -
C:\VM_WORK\WADE-TRIM_GSPIESS\D122813A1\PLTS-COVER SHEET.DWG - C0.0 COVER SHEET - PLOTTED 7/19/2023 3:48 PM BY SPIESS, GREG
FIELD BOOK INFORMATION: -

DEMOLITION NOTES

1. ALL DEMOLITION WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES. ALL DEMOLITION OPERATIONS SHALL COMPLY WITH MIOSHA REGULATIONS INSOFAR AS THEY APPLY TO THE REQUIRED WORK. A SOIL EROSION AND SEDIMENTATION CONTROL PERMIT WILL BE REQUIRED PRIOR TO DEMOLITION.
2. THE CONTRACTOR SHALL REMOVE AND CLEAR ALL TREES, BRUSH, FENCES, BUILDINGS, CONCRETE, AND ASPHALT AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
3. ALL DEMOLITION MATERIAL SHALL BE PROPERLY REMOVED FROM THE SITE AND DISPOSED OF IN A LEGALLY DESIGNATED DISPOSAL AREA. NO ON-SITE BURNING WILL BE ALLOWED WITHOUT PROPER PERMISSION. PERMITS AND FEES FOR DISPOSAL OF DEMOLITION MATERIAL SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.
4. THE EXACT LOCATION OF EXISTING UTILITIES ARE UNKNOWN. THE CONTRACTOR SHALL FIELD LOCATE EXISTING UTILITIES PRIOR TO COMMENCING WITH DEMOLITION.
5. THE DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE FOR BACKFILLING EXCAVATION AREAS WITH M.D.O.T. CLASS II MATERIAL. ALL FILL MATERIAL SHALL BE BACKFILLED WITH MAX. 12" LIFTS & COMPACTED TO 95% MAX. DENSITY PER ASTM D1557 (MODIFIED PROCTOR).
7. THE DEMOLITION CONTRACTOR SHALL COORDINATE ALL UTILITY REMOVAL\RELOCATION WITH THE APPROPRIATE UTILITY COMPANY.
8. BUILDING REMOVAL TO INCLUDE ALL FOOTINGS, SLABS AND BELOW GRADE PORTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL MATERIALS OFF-SITE.
9. ALL CONCRETE AND ASPHALT TO BE REMOVED SHALL BE SAW CUT WHERE REQUIRED ALONG PROPOSED LIMITS OF DEMOLITION.
10. AT THE CONCLUSION OF THE DEMOLITION OPERATIONS, THE ENTIRE WORK AREA SHALL BE LEFT IN A CLEAN CONDITION. ALL PROTECTIVE DEVICES AND BARRIERS SHALL BE REMOVED.

SITE PLAN NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REMOVAL AND DISPOSAL OF DEMOLISHED ITEMS, (UNLESS OTHERWISE NOTED ON PLANS) INCLUDING BUT NOT LIMITED TO PAVEMENT, CONCRETE, STORM DRAINAGE STRUCTURES AND PIPING, VEGETATION AND TREES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITY'S REQUIREMENTS AND PROJECT SITE WORK SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN THE BASE BID.
2. ALL PARKING LOT STRIPING SHALL BE IN ACCORDANCE WITH THE "MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES". ALL STRIPING SHALL BE WATERBORNE PER MDOT SPECIFICATIONS AND ALL STRIPING SHALL BE 4" TRAFFIC YELLOW UNLESS OTHERWISE NOTED. CONTRACTOR SHALL APPLY 2 COATS OF PAVEMENT MARKINGS, 1 MONTH APART.
3. ALL BARRIER FREE PARKING, SIGNAGE & STRIPING SHALL BE IN ACCORDANCE WITH MICHIGAN BARRIER FREE STANDARDS. STRIPING SHALL BE WATERBORNE PAVEMENT MARKING PER MDOT SPECIFICATIONS, COLOR BLUE UNLESS OTHERWISE SPECIFIED.
4. CONTRACTOR IS RESPONSIBLE FOR PROPER TRAFFIC CONTROL DURING CONSTRUCTION IN ACCORDANCE WITH THE "MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".
5. SITE CONTRACTOR SHALL REFER TO LIGHTING PLANS FOR LIGHTING LOCATIONS AND FOUNDATIONS. SITE CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL SITE LIGHTING AND CIRCUITRY PRIOR TO PLACING UTILITIES AND INSTALLING PAVEMENTS.
6. CONTRACTOR SHALL RESTORE ALL DISTURBED LAWN AREAS WITH 4" OF TOPSOIL, SEED AND MULCH.
7. ALL LIGHTING SHALL BE TURNED OFF BETWEEN 11:00PM AND SUNRISE. LIGHTING USED FOR SECURITY BETWEEN 11:00PM AND SUNRISE SHALL BE CONTROLLED BY A MOTION SENSOR.
8. NO PUBLIC USE OF THE DOCKS SHALL BE PERMITTED.
9. NO SOUND AMPLIFICATION WILL BE PERMITTED ON SITE.

BENCHMARKS

BM#1: SPIKE IN NORTH FACE OF UTILITY POLE 130' SOUTHWEST OF THE INTERSECTION OF WINANS LAKE RD. AND BUCKHORN LN.
ELEV=892.31 (NAVD 88)

BM#2: SPIKE IN SOUTH SIDE OF 20" COTTONWOOD LOCATED 20' EAST OF LAKE CREST DR.
ELEV=891.71 (NAVD 88)

EXISTING LEGEND

LINE WORK

- BOUNDARY
- RIGHT OF WAY (R/W)
- BUILDING/WETLAND SETBACK
- BUILDING
- CURB & GUTTER
- CHAIN LINK FENCE
- SHORE OR EDGE OF WATER
- WETLAND
- WETLAND BUFFER
- EDGE OF WOODS
- EDGE OF BRUSH
- MAJOR CONTOUR (100)
- MINOR CONTOUR (101)
- SANITARY SEWER MAIN
- OVERHEAD ELECTRIC (E)
- GAS MAIN OR SERVICE (G)

TOPOGRAPHIC FEATURES

- FOUND IRON ROD (IR)
- GOVERNMENT CORNER
- BENCHMARK (BM)
- MAIL BOX (MB)
- MONITORING WELL (MWELL)
- ROUND POST OR BOLLARD (BP)
- SIGN POST (SP)
- DECIDUOUS TREE OR BUSH

UTILITIES SYMBOLS

- SANITARY SEWER MANHOLE (S)
- UTILITY POLE
- GAS METER (GM)
- TELEPHONE PEDISTAL (TP)

PROPOSED LEGEND

SESC LEGEND

- TEMPORARY SILT FENCE
- MAJOR CONTOUR (100)
- MINOR CONTOUR (101)
- DRAINAGE SWALE
- DRAINAGE FLOW ARROW
- FILTER BERM OR CHECK DAM
- LIMITS OF DISTURBANCE/ PROJECT LIMITS
- SOIL TYPE (XxX)
- CONSTRUCTION ENTRANCE
- STAGING/STOCK PILE AREA

DEMOLITION LEGEND

- SAWCUT FULL DPETH
- BUILDING REMOVAL
- WOODED AREA REMOVAL

SITE LEGEND

- FIRE HYDRANT
- WATER VALVE IN BOX
- WATER MAIN
- SANITARY SEWER MANHOLE (S)
- SANITARY SEWER CLEAN OUT (CO)
- SANITARY PUMP STATION (SP)
- SANITARY SEWER MAIN
- STORM CATCH BASIN (CB)
- STORM MANHOLE (SD)
- STORM SEWER END SECTION
- STORM SEWER LINE
- DRAINAGE SWALE
- TOP OF BANK
- BUILDING LINE
- BUILDING SETBACK
- PARKING COUNT (#)
- SIGN AND SIGN POST (SP)
- ACCESSIBLE SYMBOL
- CONCRETE SURFACE SEE DETAIL ON SHEET C3.5
- SOLAR FARM

NOTE: FOR EXISTING FEATURES SEE TOPOGRAPHIC SURVEY OR EXISTING CONDITIONS PLAN.

GRADING LEGEND

- CURB ELEVATION WHERE: T = TOP OF CURB, G = GUTTER OR PVMT. (100.50 T / 100.00 G)
- THICKENED EDGE WALK ELEV. WHERE: T = TOP OF WALK, P = PAVEMENT (100.50 T / 100.00 P)
- SPOT ELEV. (100.00 / XXX)

WHERE XXX IS ONE OF THE FOLLOWING:

TOP OF CONCRETE ELEV.	TOC
FINISH GRADE ELEV.	FG
DOOR ELEV.	DOOR
RIM ELEV.	RIM
BACK OF CURB ELEV.	BOC
GUTTER ELEV.	GUT
MATCH EXISTING ELEV.	MATCH
TOP OF PAVEMENT ELEV.	T/P
TOP OF WALL ELEV.	TOW
BOTTOM OF WALL ELEV.	BOW
TOP OF BANK ELEV.	TOB
TOE OF SLOPE ELEV.	TOE
FIINISH FLOOR ELEV.	FFE
ADJUST RIM ELEV.	ADJUST

- DRAINAGE FLOW
- DRAINAGE SLOPE 1.0%
- FINISH GRADE SLOPE 4:1
- MAJOR CONTOUR (100)
- MINOR CONTOUR (101)

Know what's **below.** **Call** before you dig.

REV#	DATE	DESCRIPTION	BY
1	7/19/23	SITE PLAN REVIEW	

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

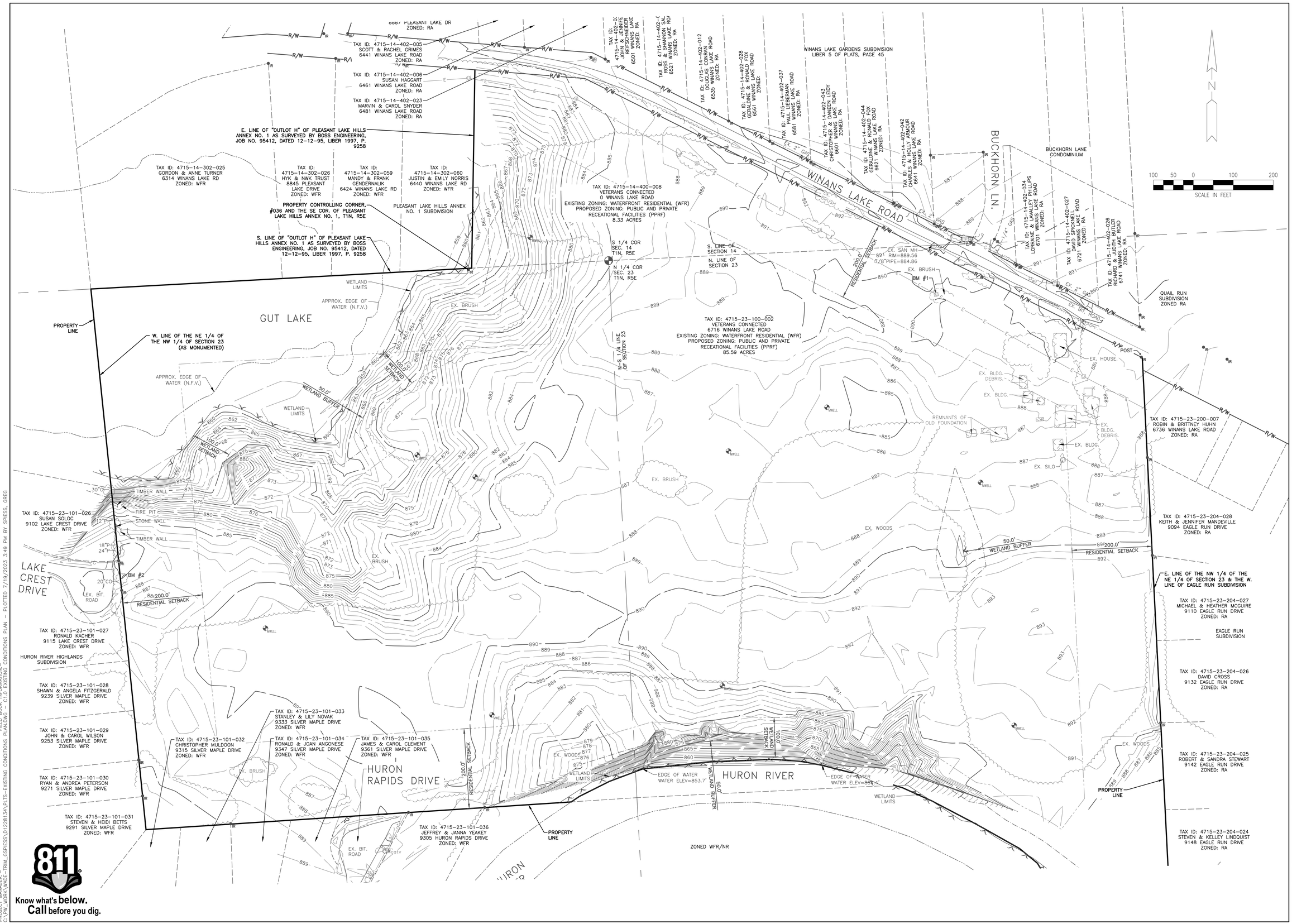
GENERAL NOTES AND LEGENDS
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO. VCM2001

SHEET C0.1

PROJECT MANAGER: -
C:\PW_WORK\WADE-TRIM_GSPIESS\D1228134\PLTS-GENERAL NOTES AND LEGENDS.DWG - C0.1 GENERAL NOTES AND LEGENDS - PLOTTED 7/19/2023 3:48 PM BY SPIESS, GREG
FIELD BOOK INFORMATION: -



811 Know what's below. Call before you dig.

PROJECT MANAGER: -
C:\PW_WORK\WADE-TRIM_GSPRESS\D1228134\PLTS-EXISTING CONDITIONS PLAN.DWG - C1.0_EXISTING CONDITIONS PLAN - PLOTTED 7/19/2023 3:49 PM BY SPRESS, GREG
FIELD BOOK INFORMATION: -

BY	REV#	DATE	DESCRIPTION
	1	7/19/23	SITE PLAN REVIEW

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
(734) 947-9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

EXISTING CONDITIONS PLAN
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO. VCM2001

SHEET C1.0

SOIL EROSION & SEDIMENTATION CONTROL NOTES

1. CONTRACTOR SHALL PLACE ALL SOIL EROSION & SEDIMENTATION CONTROL MEASURES AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLANS, AS SHOWN ON THIS SHEET (REFER TO THE MDOT SOIL EROSION AND SEDIMENTATION CONTROL MANUAL SECTION 7 FOR SPECIFIC DETAILS.
2. CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACK FILLING AND/OR GRADING OPERATIONS.
3. SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
4. THE CONTRACTOR SHALL LIMIT THE USE OF HEAVY EQUIPMENT AND OTHER CONSTRUCTION EQUIPMENT ON THE UNPROTECTED SUBGRADE.
5. CLEANUP WILL BE DONE IN A MANNER TO INSURE THAT EROSION CONTROL MEASURES ARE NOT DISTURBED.
6. THE PROJECT WILL CONTINUALLY BE INSPECTED FOR SOIL EROSION AND SEDIMENTATION CONTROL COMPLIANCE IN ACCORDANCE WITH APPLICABLE REGULATIONS AND PERMIT REQUIREMENTS. DEFICIENCIES WILL BE CORRECTED BY THE CONTRACTOR WITHIN 24 HOURS.
7. TEMPORARY EROSION CONTROL MEASURES SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR UPON ESTABLISHMENT OF PERMANENT CONTROL MEASURES.
8. CONSTRUCTION WILL DISTURB MORE THAN 5 ACRES, THUS A NPDES STORM WATER DISCHARGE PERMIT **WILL** BE REQUIRED.
9. ALL ROADS WITHIN THE INFLUENCE OF THE PROJECT MUST REMAIN CLEAN AT ALL TIMES. CONTRACTOR SHALL SWEEP STREETS AS DIRECTED BY LOCAL MUNICIPALITY HAVING JURISDICTION OVER THE ROADWAY (I.E. TOWNSHIP, CITY, COUNTY, STATE, ETC).
10. BEST MANAGEMENT PRACTICES FOR SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE USED ON THIS PROJECT AS SHOWN ON THE PLANS AND AS DEFINED BY THE ENGINEER.
11. THE CONTRACTOR SHALL SUBMIT A DETAILED SOIL EROSION AND SEDIMENTATION CONTROL PLAN AND OBTAIN AN ACT 451 PART 91, SOIL EROSION AND SEDIMENTATION CONTROL PERMIT, COPY TO PROVIDED TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR THE PAYMENT OF APPLICATION FEES, REVIEW FEES, INSPECTION FEES, BONDS, ETC. NO EARTH CHANGES OR EXCAVATION SHALL BE STARTED PRIOR TO THE ISSUANCE OF THIS PERMIT.
12. PROJECT IS NOT WITHIN THE 100 YEAR FLOOD PLAIN.
13. TEMPORARY SEEDING SHALL BE MDOT TUF SEED MIXTURE PLACED ACCORDING TO MDOT SPECIFICATIONS. TEMPORARY SEEDING SHALL BE MAINTAINED DURING THE PERIOD OF CONSTRUCTION UNTIL THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED.

MAINTENANCE

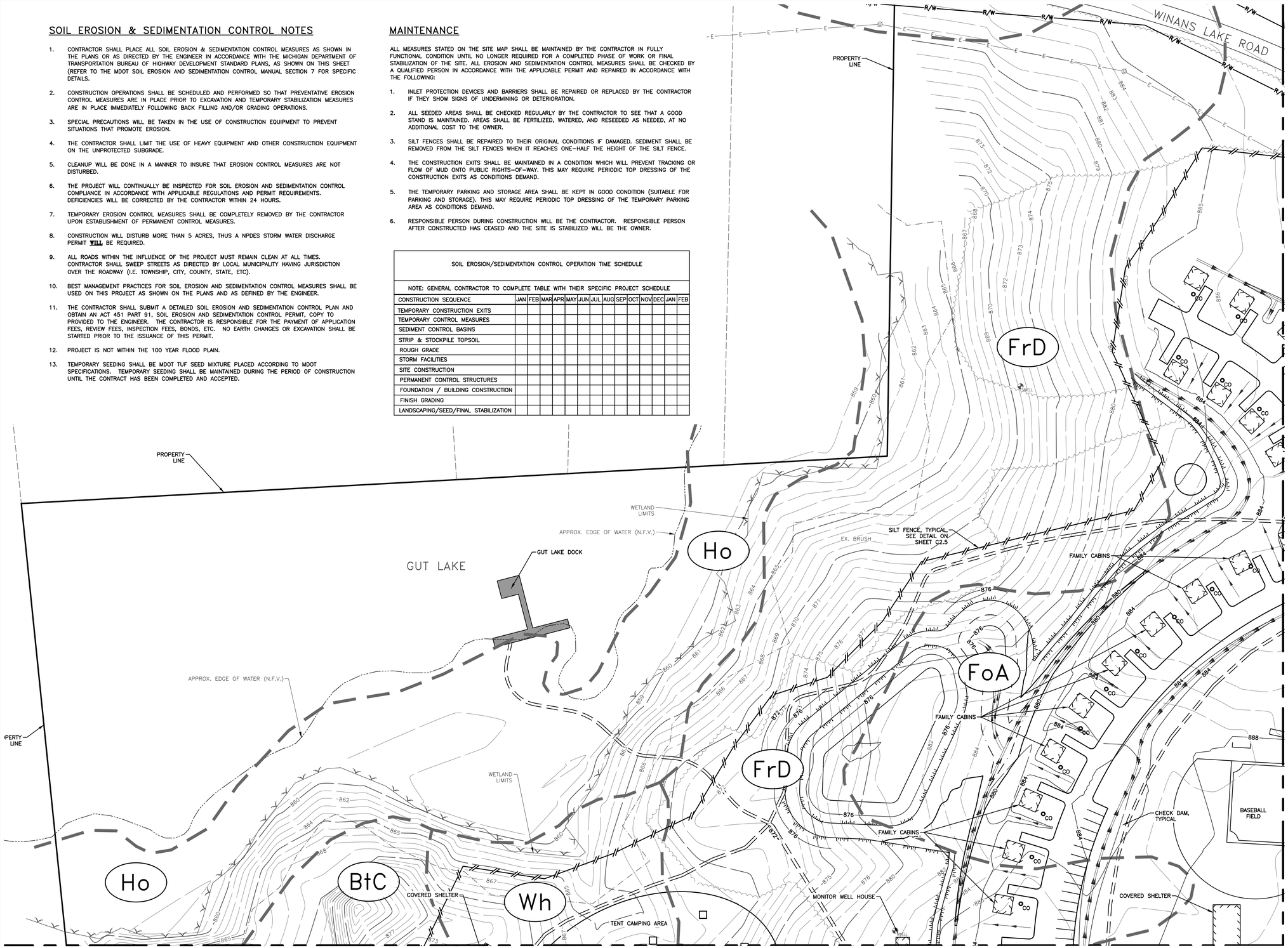
ALL MEASURES STATED ON THE SITE MAP SHALL BE MAINTAINED BY THE CONTRACTOR IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE APPLICABLE PERMIT AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY BY THE CONTRACTOR TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED, AT NO ADDITIONAL COST TO THE OWNER.
3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE–HALF THE HEIGHT OF THE SILT FENCE.
4. THE CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION EXITS AS CONDITIONS DEMAND.
5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
6. RESPONSIBLE PERSON DURING CONSTRUCTION WILL BE THE CONTRACTOR. RESPONSIBLE PERSON AFTER CONSTRUCTED HAS CEASED AND THE SITE IS STABILIZED WILL BE THE OWNER.

SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE

NOTE: GENERAL CONTRACTOR TO COMPLETE TABLE WITH THEIR SPECIFIC PROJECT SCHEDULE

CONSTRUCTION SEQUENCE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB
TEMPORARY CONSTRUCTION EXITS														
TEMPORARY CONTROL MEASURES														
SEDIMENT CONTROL BASINS														
STRIP & STOCKPILE TOPSOIL														
ROUGH GRADE														
STORM FACILITIES														
SITE CONSTRUCTION														
PERMANENT CONTROL STRUCTURES														
FOUNDATION / BUILDING CONSTRUCTION														
FINISH GRADING														
LANDSCAPING/SEED/FINAL STABILIZATION														



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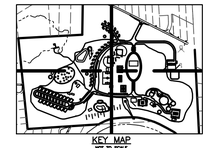
50 25 0 50 100
SCALE IN FEET


KEY MAP
NOT TO SCALE

DATA

SOIL TYPE:

BtA, BOYER–OSHTEMO LOAMY SANDS, 0 TO 2 PERCENT SLOPES

BtB, BOYER–OSHTEMO LOAMY SANDS, 2 TO 6 PERCENT SLOPES

BtC, BOYER–OSHTEMO LOAMY SANDS, 6 TO 12 PERCENT SLOPES

BwA, BRONSON LOAMY SAND, 0 TO 2 PERCENT SLOPES

CarabA, CARLISLE MUCK, 0 TO 2 PERCENT SLOPES

FoA, FOX SANDY LOAM, 0 TO 2 PERCENT SLOPES

FoB, FOX SANDY LOAM, 2 TO 6 PERCENT SLOPES

FoC, FOX SANDY LOAM, 6 TO 12 PERCENT SLOPES

FrD, FOX–BOYER COMPLEX, 12 TO 18 PERCENT SLOPES

FrE, FOX–BOYER COMPLEX, 18 TO 25 PERCENT SLOPES

FrF, FOX–BOYER COMPLEX, 25 TO 40 PERCENT SLOPES

GD, GILFORD SANDY LOAM, 0 TO 2 PERCENT SLOPES

HgtahA, HOUGHTON MUCK, 0 TO 1 PERCENT SLOPES

LM, LINWOOD MUCK

MIB, METAMORA SANDY LOAM, 0 TO 4 PERCENT SLOPES

OkB, OAKVILLE FINE SAND, LOAMY SUBSTRATUM, 0 TO 6 PERCENT SLOPES

Wh, WASHTENAW SILT LOAM

TOTAL DISTURBED AREA = X.XX ACRES

CLOSEST BODY OF WATER:
NAME: HURON RIVER
DIST.: ON SITE

811 Know what's **below.** **Call** before you dig.

PROJECT MANAGER:–
C:\PW_WORK\WADE~1\TRIM_GSPIESS\D1228134\PLTS~SESC PLAN.DWG – C2.1 SESC PLAN – A – PLOTTED 7/19/2023 3:49 PM BY SPIESS, GREG
FIELD BOOK INFORMATION:–

BY	DESCRIPTION	DATE	REV#
	SITE PLAN REVIEW	7/19/23	1

WADE TRIM
2525 t Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

SESC PLAN – A
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO.
VCM2001

SHEET
C2.1

MATCH LINE – SEE SHEET C2.1

WINANS LAKE ROAD

BUCKHORN LN.

CONSTRUCTION ENTRANCE, SEE DETAIL ON SHEET C2.5

SILT FENCE, TYPICAL, SEE DETAIL ON SHEET C2.5

36.0'

50.0'

FoA

FoB

FoC

BwA

BASEBALL FIELD

BLEACHERS (TYP.)

DUGOUT (TYP.)

BASEBALL FIELD

BASKETBALL COURTS

WELCOME DISPLAY

EX. BRUSH

EX. HOUSE.

EX. BLDG.

POLE BARN WITH SMALL OFFICE

EX. SILO

EX. BIT. ROAD

EX. 2" GAS

EX. 4" GAS

4 POST

HIGH POINT

BM #1

MATCH LINE – SEE SHEET C2.4

N

50 25 0 50 100

SCALE IN FEET

KEY MAP
NOT TO SCALE

Know what's below. Call before you dig.

BY	DESCRIPTION	DATE	REV#
	SITE PLAN REVIEW	7/19/23	1

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

SESC PLAN – B
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO.
VCM2001

SHEET
C2.2

PROJECT MANAGER:-
C:\PW_WORK\WADE-TRIM_GSPESS\d1228134\PLTS-SESC PLAN.DWG - C2.2 SESC PLAN - B - PLOTTED 7/19/2023 3:49 PM BY SPESS, GREG
FIELD BOOK INFORMATION:-

MATCH LINE – SEE SHEET C2.1

MATCH LINE – SEE SHEET C2.4

FrE

BtC

FoA

FoB

FoC

BtA

TENT CAMPING AREA

FIRE PIT AREA

FAMILY CABINS

SOCCER FIELD

BATH HOUSE

RECREATIONAL HOUSING (INFRASTRUCTURE ONLY)

COVERED SHELTER

LAKE CREST DRIVE

EX. BIT. ROAD

PROPERTY LINE

SILT FENCE, TYPICAL, SEE DETAIL ON SHEET C2.5

EX. BRUSH

EX. WOODS

WETLAND LIMITS

HURON RAPIDS DR.

HURON RIVER

HIGH POINT

BM #2

N

50 25 0 50 100

SCALE IN FEET

KEY MAP
NOT TO SCALE

Know what's below.
Call before you dig.

PROJECT MANAGER:-
C:\PW_WORK\WADE-TRIM_GSPESS\D1228134\PLTS-SESC PLAN.DWG - C2.3 SESC PLAN - C - PLOTTED 7/19/2023 3:49 PM BY SPESS, GREG
FIELD BOOK INFORMATION:-

NO.	REV#	DATE	DESCRIPTION	BY
	1	7/19/23	SITE PLAN REVIEW	

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

SESC PLAN – C
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO.
VCM2001

SHEET
C2.3

MATCH LINE – SEE SHEET C2.2

MATCH LINE – SEE SHEET C2.3

FoA

BwA

FoB

FoA

FoB

FrE

FoA

PICKLEBALL COURTS

VOLLEYBALL COURTS

EX. WOODS

SERVICE DOG TRAINING FACILITY

PROPERTY LINE

SILT FENCE, TYPICAL, SEE DETAIL ON SHEET C2.5

ZIP-LINE STATION 1

LODGE

MEMORIAL PLAZA

GOLD STAR 8 FAMILY CABIN

FIRE PIT AREA

CHAPEL

EX. WOODS

EDGE OF WATER
WATER ELEV=853.7'

HURON RIVER

ZIP-LINE STATION 2

EDGE OF WATER
WATER ELEV=854.4'

WETLAND LIMITS

PROPERTY LINE

HIGH POINT

N

50 25 0 50 100
SCALE IN FEET

KEY MAP
NOT TO SCALE

Know what's below. Call before you dig.

PROJECT MANAGER:-
C:\PM_WORK\WADE-TRIM_GSPHESS\012281.34\PLTS-SESC PLAN.DWG - C2.4 SESC PLAN - D - PLOTTED 7/19/2023 3:49 PM BY SPHESS, GREG
FIELD BOOK INFORMATION:-

BY	REV#	DATE	DESCRIPTION
	1	7/19/23	SITE PLAN REVIEW

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

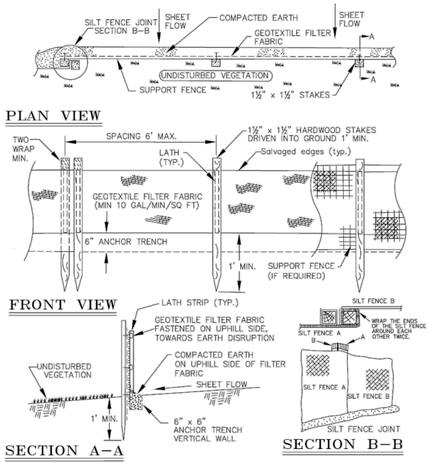
SESC PLAN - D
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO. VCM2001

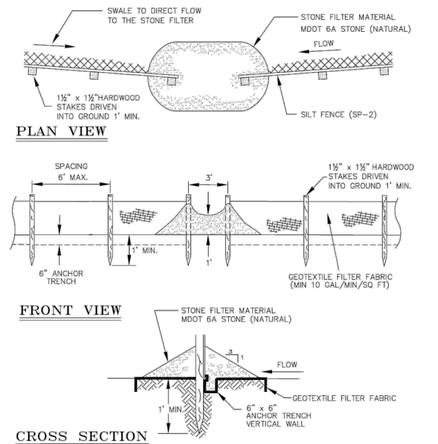
SHEET C2.4

36" SILT FENCE
STANDARD CONTROL



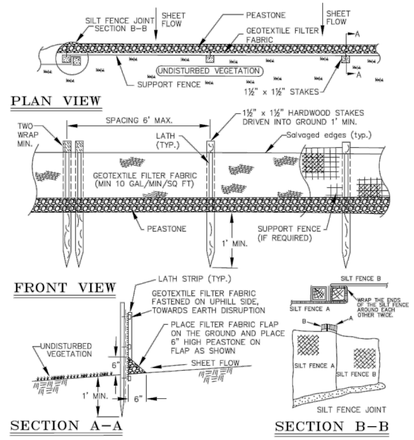
36" SILT FENCE GRAVEL FILTER
STANDARD CONTROL

(ALL ALTERNATIVES MUST BE PRE-APPROVED BY THE INSPECTOR ON A CASE BY CASE BASIS)

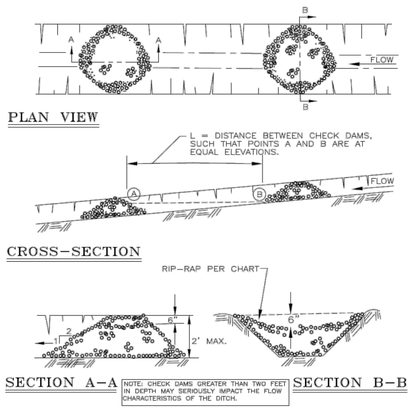


–PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.

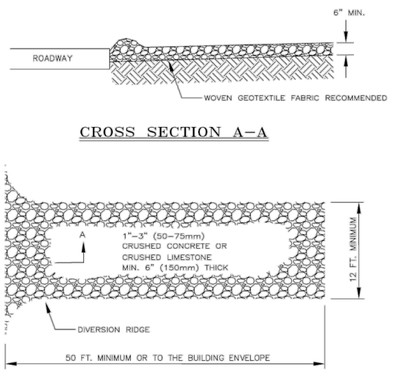
36" SILT FENCE
WINTER FROZEN GROUND INSTALLATION
STANDARD CONTROL



ANGULAR RIP RAP CHECK DAM
STANDARD CONTROL

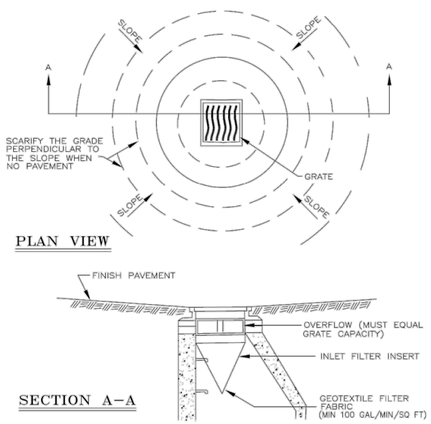


TRACKING MAT
STANDARD CONTROL



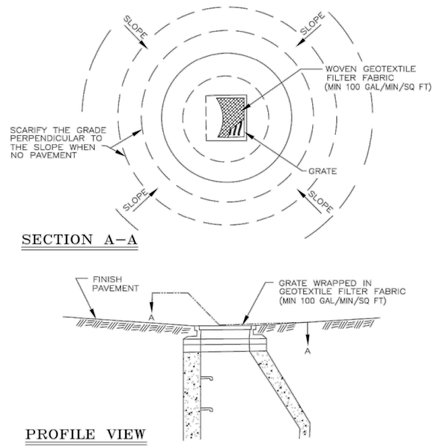
SILT SACK OR APPROVED EQUAL LOW POINT/YARD INLET FILTER
STANDARD CONTROL YEAR ROUND OR WINTER USE

APPROVED FOR USE DURING WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



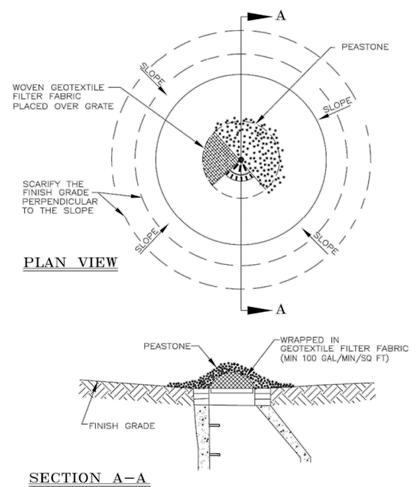
GEOTEXTILE FABRIC LOW POINT/YARD INLET FILTER
STANDARD CONTROL NON-WINTER USE

NOT FOR USE IN WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



GEOTEXTILE & PEASTONE LOW POINT/YARD INLET FILTER
STANDARD CONTROL NON-WINTER USE

NOT FOR USE IN WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



Know what's **below.** **Call** before you dig.

PROJECT MANAGER: -
C:\PW_WORK\WADE-TRIM_GSPIESS\D1228134\PLTS-SESC DETAILS.DWG – C2.5 SESC DETAILS – PLOTTED 7/19/2023 3:50 PM BY SPIESS, GREG
FIELD BOOK INFORMATION: -

REV.#	DATE	DESCRIPTION	BY
1	7/19/23	SITE PLAN REVIEW	

WADE TRIM
2525 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

SESC DETAILS
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO.
VCM2001

SHEET
C2.5

PROPERTY LINE

REMOVE TREES/BRUSH

PROTECT UTILITY POLE

R/W

R/W

N

50 25 0 50 100

SCALE IN FEET

KEY MAP
NOT TO SCALE

PROTECT WELL

WELL

PROPERTY LINE

WETLAND LIMITS

APPROX. EDGE OF WATER (N.F.V.)

GUT LAKE

EX. BRUSH

MATCH LINE – SEE SHEET C2.7

REMOVE TREES/BRUSH

4' HIGH VIS FENCE ALONG WETLANDS

APPROX. EDGE OF WATER (N.F.V.)

PROPERTY LINE

WETLAND LIMITS

ABANDON EXISTING WELL, COORDINATE WITH LIVINGSTON HEALTH DEPARTMENT

WELL

PROTECT WELL

WELL

MATCH LINE – SEE SHEET C2.8

Know what's **below.**
Call before you dig.

PROJECT MANAGER-
C:\PW_WORK\WADE-TRIM_GSPIESS\D1228134\PLTS-SITE DEMO.DWG - C2.6 DEMOLITION PLAN - A - PLOTTED 7/19/2023 3:50 PM BY SPIESS, GREG
FIELD BOOK INFORMATION-

BY	DESCRIPTION	DATE	REV#
	SITE PLAN REVIEW	7/19/23	1

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

DEMOLITION PLAN – A
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO.
VCM2001

SHEET
C2.6

MATCH LINE – SEE SHEET C2.6

REMOVE TREES/BRUSH

PROTECT UTILITY POLE

REMOVE TREES/BRUSH

PROTECT UTILITY POLE

EX. 2" GAS

WINANS LAKE ROAD

BUCKHORN LN.

EX. SAN MH
RIM=889.56
T/8"PIPE=884.86

EX. 1-1/4" GAS

EX. 2" GAS

EX. BIT. ROAD

PROTECT UTILITY POLE

BM #1

EX. BRUSH

REMOVE EXISTING MAILBOX

REMOVE TREES/BRUSH

REMOVE EXISTING BUILDING AND FOUNDATION

EX. HOUSE

REMOVE OVERHEAD LINE

PROTECT UTILITY POLE

POST

PROPERTY LINE

ABANDON EXISTING WELL, COORDINATE WITH LIVINGSTON HEALTH DEPARTMENT

REMOVE EXISTING BUILDING AND FOUNDATION

REMOVE BUILDING FOUNDATION REMNANTS

REMOVE EXISTING BUILDING AND FOUNDATION

EX. BLDG.

EX. SILO

PROTECT WELL

PROTECT WELL

REMOVE TREES/BRUSH

REMOVE TREES/BRUSH

PROTECT WELL

MATCH LINE – SEE SHEET C2.9

N

50 25 0 50 100

SCALE IN FEET

KEY MAP
NOT TO SCALE

BY	DESCRIPTION	DATE	REV#
	SITE PLAN REVIEW	7/19/23	1

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

DEMOLITION PLAN – B
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO.
VCM2001

SHEET
C2.7

Know what's below.
Call before you dig.

MATCH LINE – SEE SHEET C2.6

REMOVE TIMBER WALL

REMOVE FIRE PIT

REMOVE STONE WALL

REMOVE TIMBER WALL

4' HIGH VIS FENCE ALONG WETLANDS

30"O

12"P

18"P

24"P

20"CO

LAKE CREST DRIVE

BM #2

EX. BIT. ROAD

PROPERTY LINE

REMOVE TREES/BRUSH

REMOVE TREES/BRUSH

EX. BRUSH

REMOVE TREES/BRUSH

ABANDON EXISTING WELL, COORDINATE WITH LIVINGSTON HEALTH DEPARTMENT

WELL

REMOVE TREES/BRUSH

PROTECT WELL

WELL

REMOVE TREES/BRUSH

EX. WOODS

4' HIGH VIS FENCE ALONG WETLANDS

WETLAND LIMITS

PROPERTY LINE

EX. BIT. ROAD

HURON RAPIDS DR.

HURON RIVER

MATCH LINE – SEE SHEET C2.9

N

50 25 0 50 100

SCALE IN FEET

KEY MAP
NOT TO SCALE

Know what's below.
Call before you dig.

PROJECT MANAGER:-
C:\PW_WORK\WADE-TRIM_GSPIESS\D1228134\PLTS-SITE DEMO.DWG - C2.8 DEMOLITION PLAN - C - PLOTTED 7/19/2023 3:50 PM BY SPIESS, GREG
FIELD BOOK INFORMATION:-

REV#	DATE	DESCRIPTION	BY
1	7/19/23	SITE PLAN REVIEW	

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITMORE LAKE, MI 48189

DEMOLITION PLAN – C
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO.
VCM2001

SHEET
C2.8

MATCH LINE – SEE SHEET C2.7

MATCH LINE – SEE SHEET C2.8

REMOVE TREES/BRUSH

EX. WOODS

4' HIGH VIS. FENCE ALONG WETLANDS.

REMOVE TREES/BRUSH

PROTECT WELL

WELL

REMOVE TREES/BRUSH

PROTECT WELL

WELL

4' HIGH VIS FENCE ALONG WETLANDS

EDGE OF WATER
WATER ELEV=853.7'

HURON RIVER

EDGE OF WATER
WATER ELEV=854.4'

WETLAND LIMITS

PROPERTY LINE

PROPERTY LINE

EX. WOODS

N

50 25 0 50 100

SCALE IN FEET

KEY MAP
NOT TO SCALE

Know what's below.
Call before you dig.

PROJECT MANAGER: -
C:\PW_WORK\WADE-TRIM_GSPIESS\D1228134\PLTS-SITE DEMO.DWG – C2.9 DEMOLITION PLAN – D – PLOTTED 7/19/2023 3:50 PM BY SPIESS, GREG
FIELD BOOK INFORMATION: -

BY	DESCRIPTION	DATE	REV#
	SITE PLAN REVIEW	7/19/23	1

25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

WADE TRIM

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

DEMOLITION PLAN – D
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO.
VCM2001

SHEET
C2.9

PROJECT MANAGER: –
C:\PW_WORK\WADE-TRIM_GSPIESS\D1228134\PLTS-OVERALL SITE PLAN WITH AERIAL.DWG – C3.0 OVERALL SITE PLAN – PLOTTED 7/19/2023 3:59 PM BY SPIESS, GREG

FIELD BOOK INFORMATION:–

Know what's below.
Call before you dig.

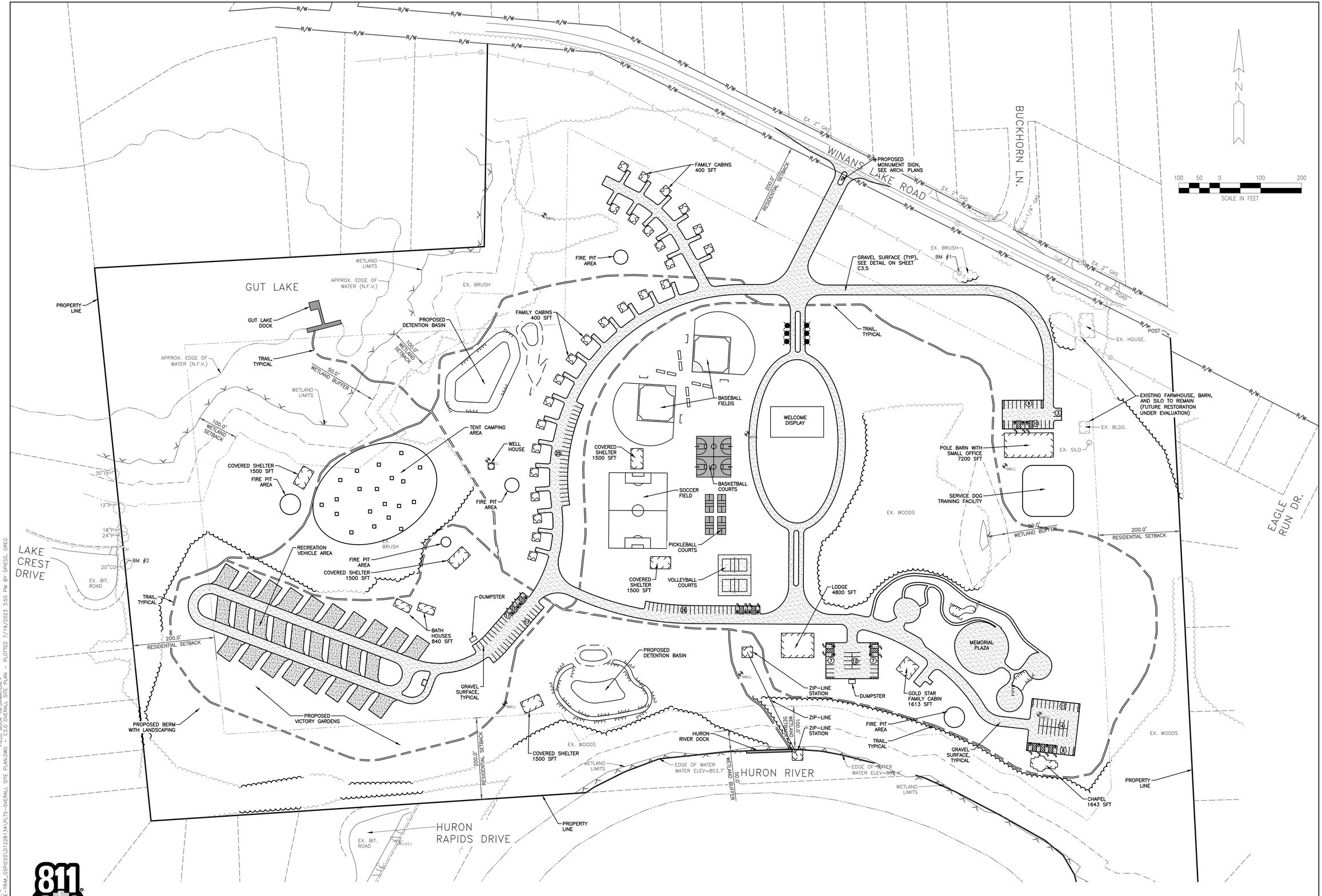
SHEET	C3.0	
JOB NO.	VCM2001	
ISSUED FOR:	DATE:	BY:
SPA REV 1	6/1/23	GLS
SPA	7/19/23	GLS

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

OVERALL SITE PLAN
FOR
FREEDOM RIVER CAMPGROUND

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

REV#	DATE	DESCRIPTION	BY
1	7/19/23	SITE PLAN REVIEW	



BY	DESCRIPTION	DATE	REV#
	SITE PLAN REVIEW	7/19/23	1

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

OVERALL SITE PLAN
FOR
FREEDOM RIVER CAMPGROUND

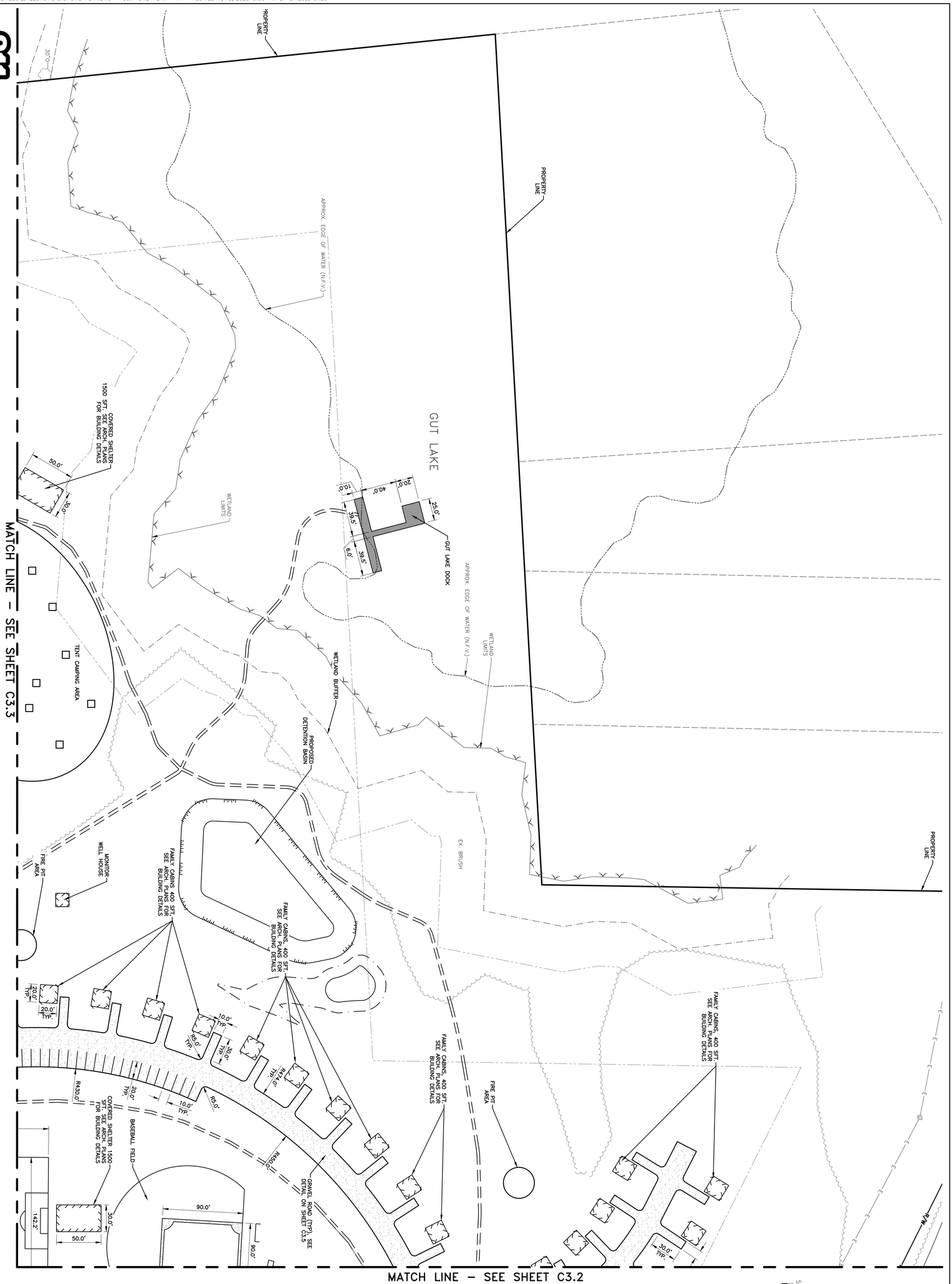
ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO. VCM2001

SHEET C3.0

811 Know what's below. Call before you dig.

PROJECT MANAGER:-
C:\PM_WORK\WADE-TRIM_GSPRESS\D1228134\PLTS-OVERALL SITE PLAN.DWG - C3.0 OVERALL SITE PLAN - PLOTTED 7/19/2023 3:50 PM BY SPRESS, GREG
FIELD BOOK INFORMATION:-



FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

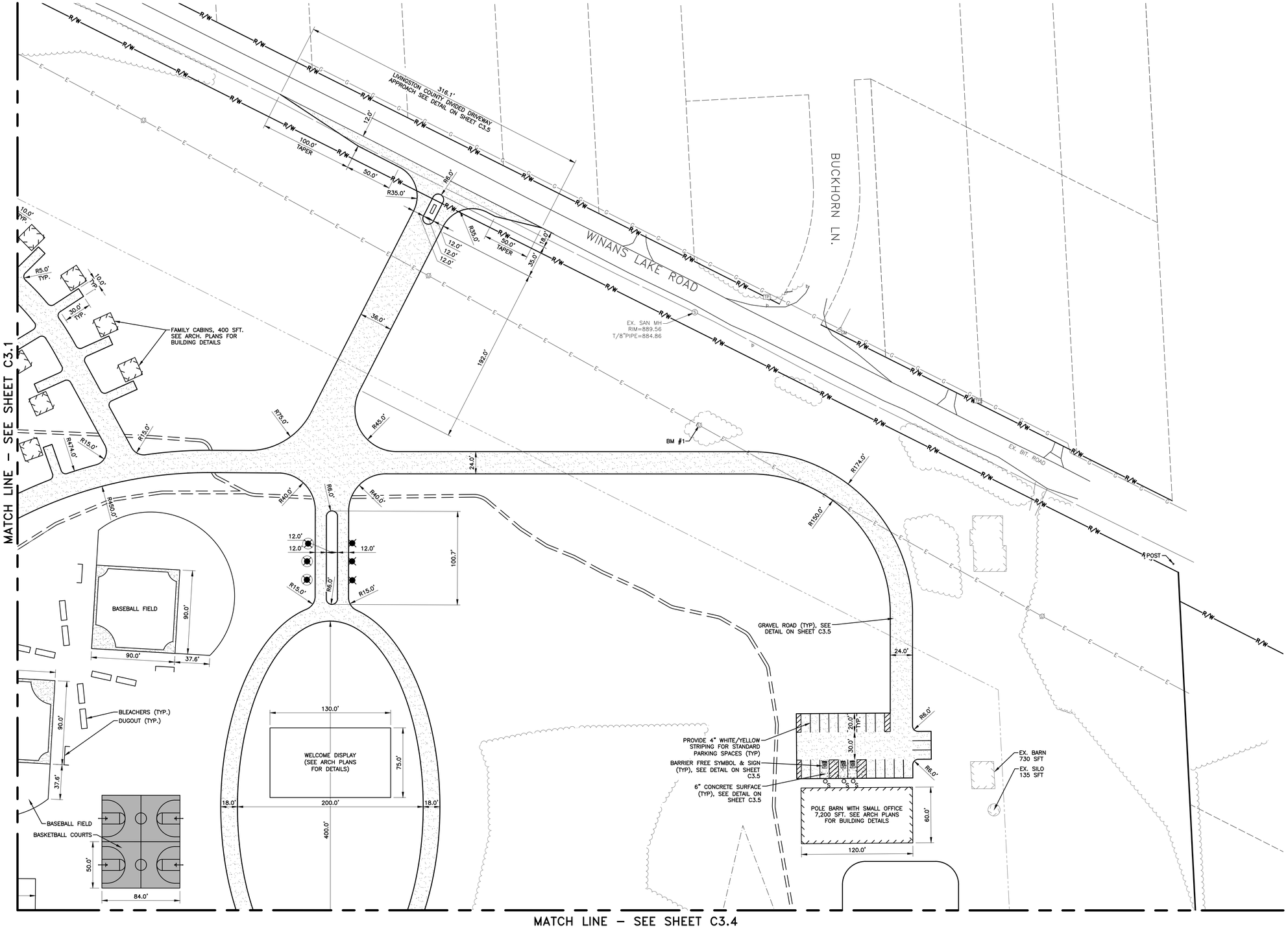
SITE PLAN – A
FOR
FREEDOM RIVER CAMPGROUND

SHEET: C3.1
JOB NO.: VCM2001

ISSUED FOR:	DATE	BY
SPA REV 1	6/1/23	GLS
SPA	7/19/23	GLS

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

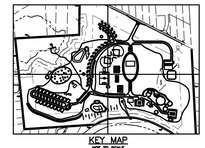
REV#	DATE	DESCRIPTION	BY
1	7/19/23	SITE PLAN REVIEW	



N

50 25 0 50 100

SCALE IN FEET



KEY MAP
NOT TO SCALE

BY	DESCRIPTION	DATE	REV#
	SITE PLAN REVIEW	7/19/23	1

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
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FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

SITE PLAN – B
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO.
VCM2001

SHEET
C3.2

Know what's **below.**
Call before you dig.

PROJECT MANAGER: –
C:\PW_WORK\WADE-TRIM_GSPIESS\D1228134\PLTS-SITE PLAN.DWG – C3.2 SITE PLAN – B – PLOTTED 7/19/2023 3:50 PM BY SPIESS, GREG
FIELD BOOK INFORMATION: –

MATCH LINE – SEE SHEET C3.1

MATCH LINE – SEE SHEET C3.4

FIRE PIT AREA

TENT CAMPING AREA

FAMILY CABINS 400 SFT. SEE ARCH. PLANS FOR BUILDING DETAILS

GRAVEL ROAD (TYP.) SEE DETAIL ON SHEET C3.5

SOCCER FIELD

185.0'

92.5'

142.2'

FIRE PIT AREA

COVERED SHELTER 1500 SFT. SEE ARCH. PLANS FOR BUILDING DETAILS

6" CONCRETE SURFACE (TYP), SEE DETAIL ON SHEET C3.5

BATH HOUSE 840 SFT. SEE ARCH. PLANS FOR BUILDING DETAILS

LAKE CREST DRIVE

BM #2

EX. BIT. ROAD

PROPERTY LINE

MIN. 2,000 SFT CONC. PAD FOR RECREATIONAL HOUSING, TYPICAL

DUMPSTER

PROPOSED DETENTION BASIN

RV WASTE SERVICE DRIVE

COVERED SHELTER 1500 SFT. SEE ARCH. PLANS FOR BUILDING DETAILS

LANDSCAPED BERM

WETLAND LIMITS

PROPERTY LINE

EX. BIT. ROAD

HURON RAPIDS DR.

HURON RIVER

R54.0' R30.0' 33.2' TYP. 24.0' 60.0' 24.0' 37.0' TYP. R30.0' 509.0' R25.0' R5.0' R175.0' R5.0' R199.0' R5.0' R54.0' 16.0' R25.0' R33.0' R5.0' R50.0' R5.0' R325.0' R65.0' TYP. R301.0' R65.0' R5.0' R5.0' R65.0' R688.0' R712.0' 24.0'

N

50 25 0 50 100

SCALE IN FEET

KEY MAP
NOT TO SCALE

NO.	REV#	DATE	DESCRIPTION	BY
1	1	7/19/23	SITE PLAN REVIEW	

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

SITE PLAN – C
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO.
VCM2001

SHEET
C3.3

Know what's below.
Call before you dig.

PROJECT MANAGER–
C:\PW_WORK\WADE-TRIM_GSPIESS\d122813\4\PLTS-SITE PLAN.DWG – C3.3 SITE PLAN – C – PLOTTED 7/19/2023 3:50 PM BY SPIESS, GREG
FIELD BOOK INFORMATION–

MATCH LINE – SEE SHEET C3.2

MATCH LINE – SEE SHEET C3.3

PICKLEBALL COURTS

44.0' TYP.

20.0' TYP.

80.0'

60.0'

100.0'

VOLLEYBALL COURTS

30.0'

50.0'

GRAVEL ROAD (TYP), SEE DETAIL ON SHEET C3.5

24.0'

BARRIER FREE SYMBOL & SIGN (TYP), SEE DETAIL ON SHEET C3.5

26.0'

26.0'

ZIP-LINE STATION 1

TRAM TO RUN PARALLEL TO ZIP-LINE

261.6'

R15.0'

R6.0'

R15.0'

118.3'

36.0'

R6.0'

R70.0'

R70.0'

EX. WOODS

WETLAND BUFFER

SERVICE DOG TRAINING FACILITY
15089 SFT

PROPERTY LINE

R10.0'

R10.0'

R25.0'

R10.0'

R15.0'

R15.0'

R5.0'

R5.0'

LODGE
4800 SFT. SEE ARCH PLANS FOR BUILDING DETAILS

BARRIER FREE SYMBOL & SIGN (TYP), SEE DETAIL ON SHEET C3.5

PROVIDE 4" WHITE/YELLOW STRIPING FOR STANDARD PARKING SPACES (TYP)

DUMPSTER

GOLD STAR FAMILY CABIN
1613 SFT. SEE ARCH. PLANS FOR BUILDING DETAILS

R439.5'

MEMORIAL PLAZA

R14.0'

R14.0'

18.0'

R5.0'

10.0'

20.0'

R5.0'

R338.0'

R361.0'

R50.0'

R5.0'

118.0'

24.0' TYP.

20.0' TYP.

10.0' TYP.

128.0'

R74.0'

R5.0'

FIRE PIT AREA

WETLAND BUFFER

BARRIER FREE SYMBOL & SIGN (TYP), SEE DETAIL ON SHEET C3.5

6" CONCRETE SURFACE (TYP), SEE DETAIL ON SHEET C3.5

CHAPEL 1643 SFT. SEE ARCH. PLANS FOR BUILDING DETAILS

EX. WOODS

111.0'

26.0'

6.0'

HURON RIVER DOCK

HURON RIVER

26.0'

ZIP-LINE STATION 2

EDGE OF WATER
WATER ELEV=853.7'

EDGE OF WATER
WATER ELEV=854.4'

WETLAND LIMITS

PROPERTY LINE

N

50 25 0 50 100
SCALE IN FEET

KEY MAP
NOT TO SCALE

BY	REV#	DATE	DESCRIPTION
	1	7/19/23	SITE PLAN REVIEW

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

SITE PLAN – D
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO.
VCM2001

SHEET
C3.4

Know what's below.
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PROJECT MANAGER: -
C:\PW_WORK\WADE-TRIM_GSPIESS\D1228134\PLTS-SITE PLAN.DWG - C3.4 SITE PLAN - D - PLOTTED 7/19/2023 3:51 PM BY SPIESS, GREG
FIELD BOOK INFORMATION: -

NOTES

CONCRETE NOTES

1. ALL CONCRETE SHALL BE 4500 PSI CONCRETE MIX UNLESS OTHERWISE NOTED.
2. ALL POLY FIBER REINFORCED CONCRETE SHALL HAVE A MIX RATIO OF 1.5 LBS OF POLY FIBER PER 1.0 CYD OF CONCRETE.

CONCRETE JOINTS

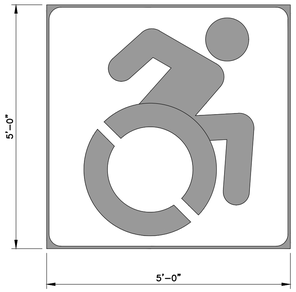
1. THE CONTRACTOR MUST PREPARE A JOINTING PLAN AND SUBMIT TO ENGINEER AS A SHOP DRAWING FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE.
2. BEGIN SAW CUTS AFTER THE CONCRETE HAS HARDENED ENOUGH TO PERMIT SAWING WITH OUT RAVELING OR DISPLACING AGGREGATES.
3. IF CRACKS DEVELOP AHEAD OF TJE SAWCUT, STOP SAWING THAT JOINT. ONCE THE CONCRETE HAS SUITABLY CURED USE CRACK SAWS TO FORM JOINT SEALANT RESERVOIRS ALONG THE CRACK LINE.
4. JOINT SPACING:
   - 4.1. MAXIMUM SLAB SIZE = 2 X SLAB THICKNESS (INCHES TO FEET), I.E.: 2 X 6 INCHES = 12 FEET – 15 FEET IS ABSOLUTE MAX.
   - 4.2. RECOMMENDED MAXIMUM JOINT SPACING (SMALLER IS BETTER)
     - 4.2.1. 4" SLAB: 6 FEET
     - 4.2.2. 6" SLAB: 10 FEET
     - 4.2.3. 8" SLAB: 14 FEET
     - 4.2.4. 9" SLAB: 15 FEET
5. CATCH BASIN AND MANHOLE CASTINGS REQUIRE A BOXOUT OR ISOLATION TO ALLOW FOR VERTICAL AND HORIZONTAL SLAB MOVEMENT.
6. SAWCUT JOINTS SHALL BE CONTINUOUS ACROSS THE SLAB AND SHALL MATCH LOCATION OF JOINTS ON ABUTTING CONCRETE SLABS.
7. CONTRACTOR SHALL PROVIDE ISOLATION/EXPANSION JOINTS BETWEEN SLABS OR AT STRUCTURES.
8. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION JOINTS AT EDGE OF POURS OR FORM LINES.
9. THE CONTRACTOR SHALL PROVIDE CONTRACTION JOINTS (SAW CUTS OR TOOLED) EQUALLY SPACED AS IDENTIFIED IN NOTE 4 THIS SHEET.

ASPHALT

1. THE LEVELING COURSE SHALL BE MDOT 4E1 OR APPROVED EQUAL (13A LVSP).
2. THE WEARING COURSE SHALL BE MDOT 5E OR APPROVED EQUAL (36A).
3. THE ASPHALT BINDER SHALL BE PG 58–28.

MATERIALS

1. GRANULAR MATERIAL – MDOT CLASS II SAND
2. OPEN GRADED AGGREGATE – MDOT 6A OR AASHTO #57
3. DENSE GRADED AGGREGATE – MDOT 21AA CRUSHED LIMESTONE
   - 3.1. CONTRACTOR CAN USE CRUSHED CONCRETE/ASPHALT MEETING MDOT 21AA SPECIFICATIONS AS AGGREGATE BASE MATERIAL. CONTRACTOR SHALL INCREASE BASE THICKNESS BY 25%.



BLUE PAINT DENOTING VAN ACCESSIBILITY WHERE APPLICABLE

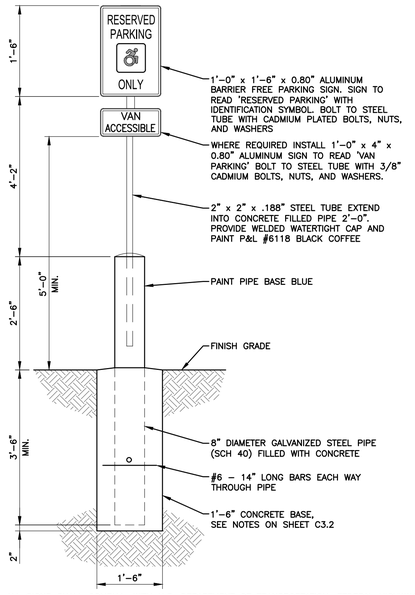
VAN

NOTES:

1. SYMBOL SHALL DEPICT A DYNAMIC CHARACTER LEANING FORWARD WITH A SENSE OF MOVEMENT.
2. PROVIDE CONTRASTING BACKGROUND WITH EITHER A WHITE SYMBOL ON BLUE BACKGROUND OR A BLUE SYMBOL ON A WHITE BACKGROUND.
3. SYMBOL SHALL BE SUBSTANTIALLY EQUIVALENT TO THE INTERNATIONAL SYMBOL OF ACCESS.
4. SYMBOL SHALL BE SIMPLE AND AVOID ANY SECONDARY MEANING.

BARRIER FREE SYMBOL DETAIL

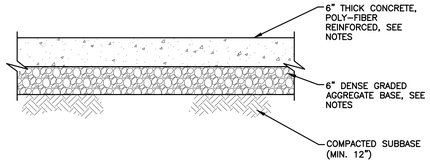
NOT TO SCALE



ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

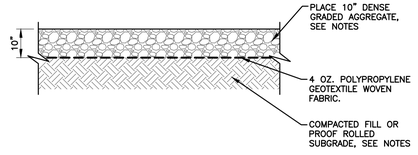
BARRIER FREE SIGN DETAIL

NOT TO SCALE



6" CONCRETE SURFACE DETAIL

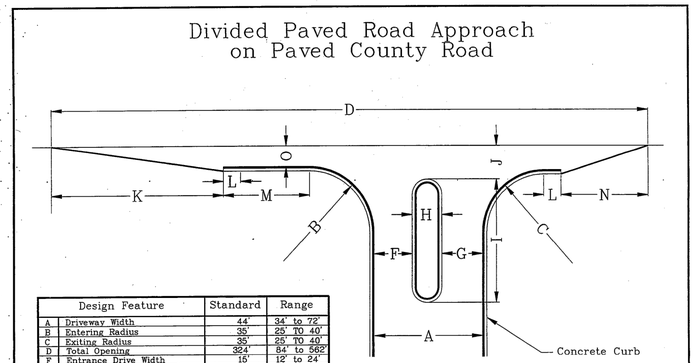
NOT TO SCALE



GRAVEL SURFACE DETAIL

NOT TO SCALE

Divided Paved Road Approach on Paved County Road



	Design Feature	Standard	Range
A	Driveway Width	44'	34' to 72'
B	Entering Radius	35'	25' TO 40'
C	Exiting Radius	35'	25' TO 40'
D	Total Opening	324'	84' to 562'
F	Entrance Drive Width	15'	12' to 24'
G	Exit Drive Width	15'	12' to 24'
H	Island Width	14'	10' to 24'
I	Island Length	35'	30' to 100'
J	Nose Offset	18'	12' TO 24'
K	Entering Taper	100'	0' to 150'
L	Curb Ending	10'	No Range
M	Right-Turn Lane Length	50'	0' to 150'
N	Exiting Taper	50'	0' to 100'
O	Pavement Width at Radius Springpoint	12'	0' to 14'

The Standard shall be used unless engineering judgement determines that another dimension within the range is more suitable for a particular site or special condition and is approved by Livingston County Road Commission.

NOTE: Concrete curb is optional on approaches to uncurbed county roadways

A13

NO.	DATE	DESCRIPTION	BY
1	7/19/23	SITE PLAN REVIEW	

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FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

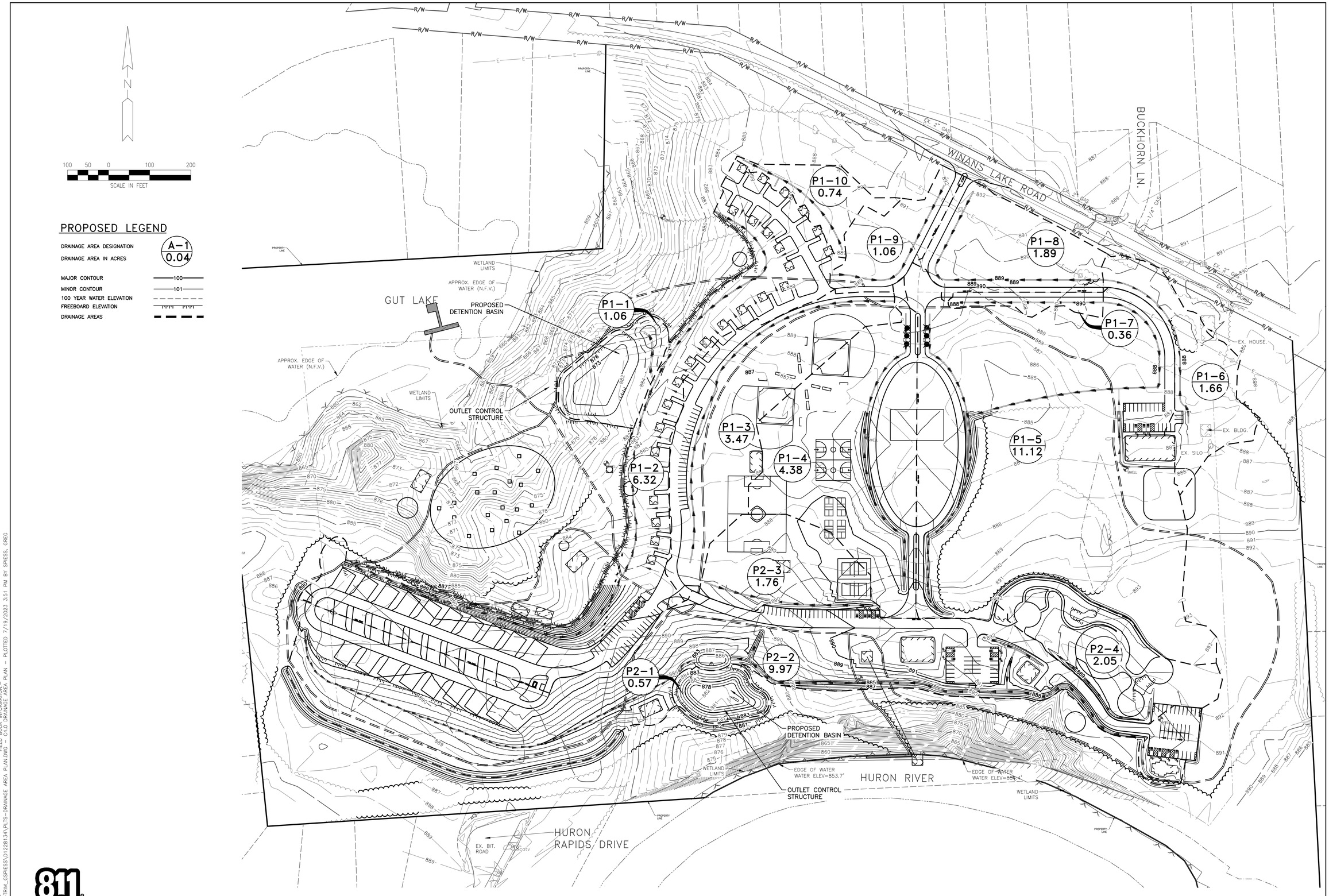
SITE DETAILS
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO. VCM2001

SHEET C3.5

PROJECT MANAGER: –
C:\PW_WORK\WADE-TRIM_GSPIESS\P122813A\PLTS-SITE DETAILS.DWG – C3.5 SITE DETAILS – PLOTTED: 7/19/2023 3:51 PM BY SPIESS, GREG
FIELD BOOK INFORMATION: –



BY	DESCRIPTION	DATE	REV#
	SITE PLAN REVIEW	7/19/23	1

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FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

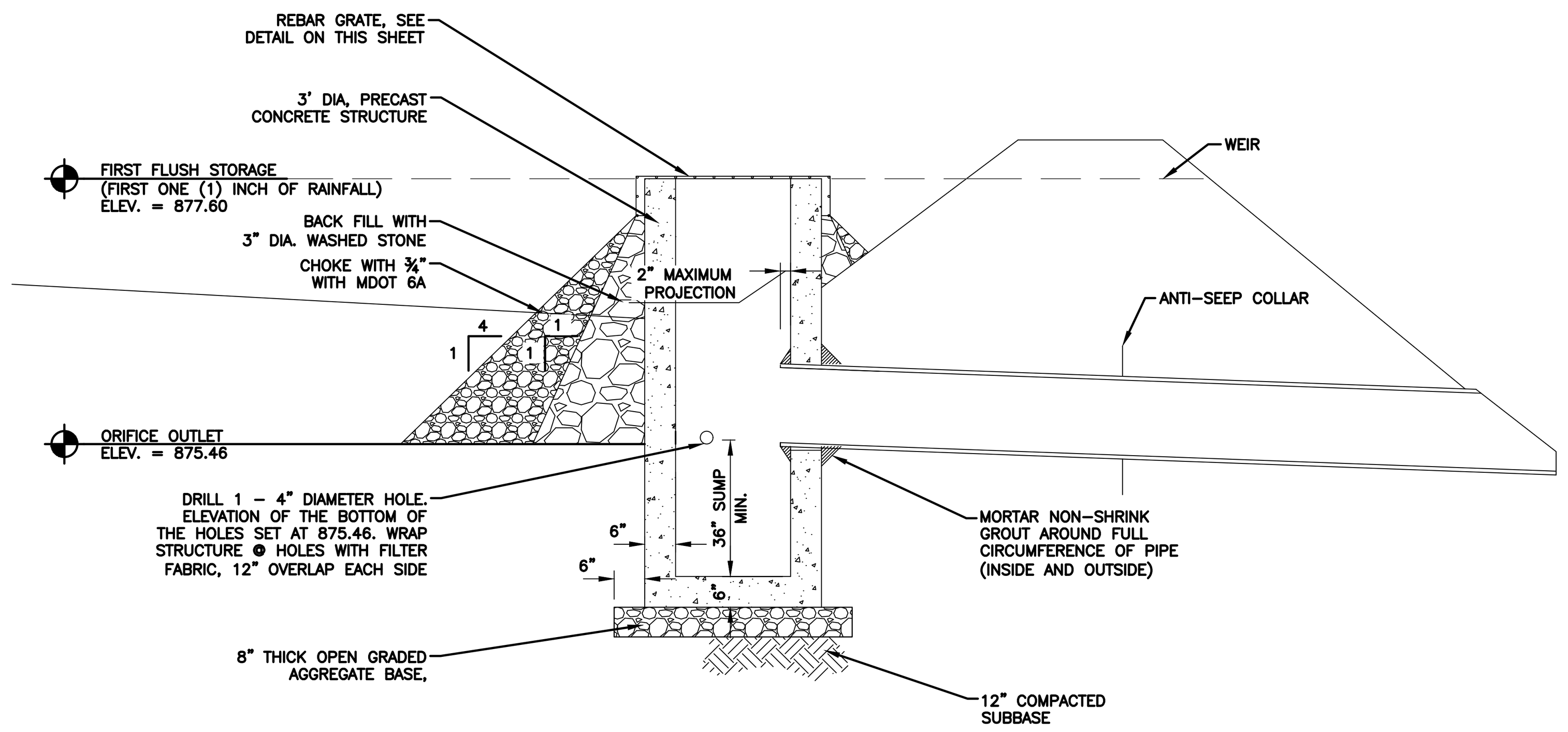
OVERALL DRAINAGE PLAN
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

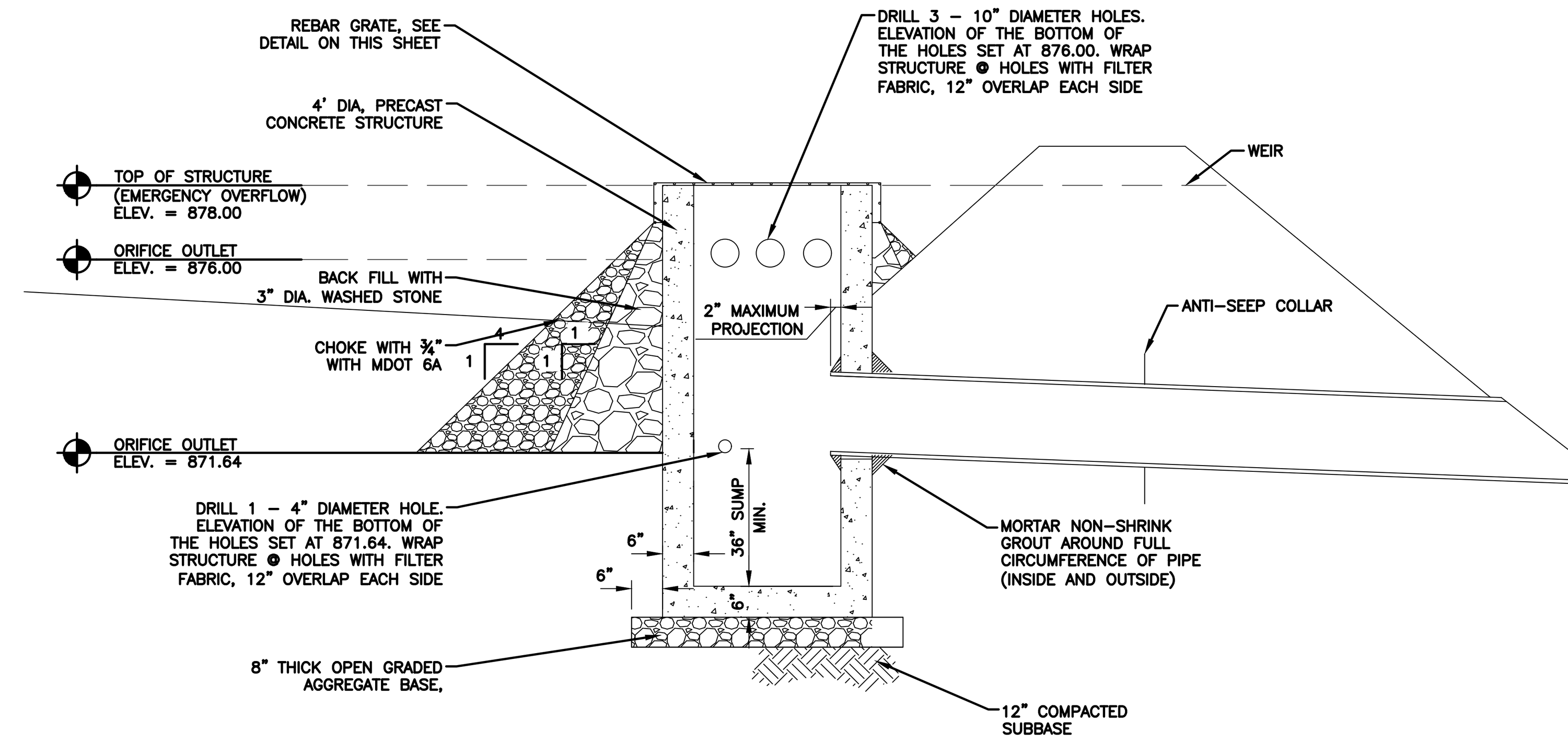
JOB NO.
VCM2001

SHEET
C4.0

PROJECT MANAGER:-
C:\PW_WORK\WADE-TRIM_GSPIESS\d1228134\PLTS-DRAINAGE AREA PLAN.DWG - C4.0 DRAINAGE AREA PLAN - PLOTTED 7/19/2023 3:51 PM BY SPIESS, GREG
FIELD BOOK INFORMATION:-



OCS #P1-2 DETAIL
NOT TO SCALE



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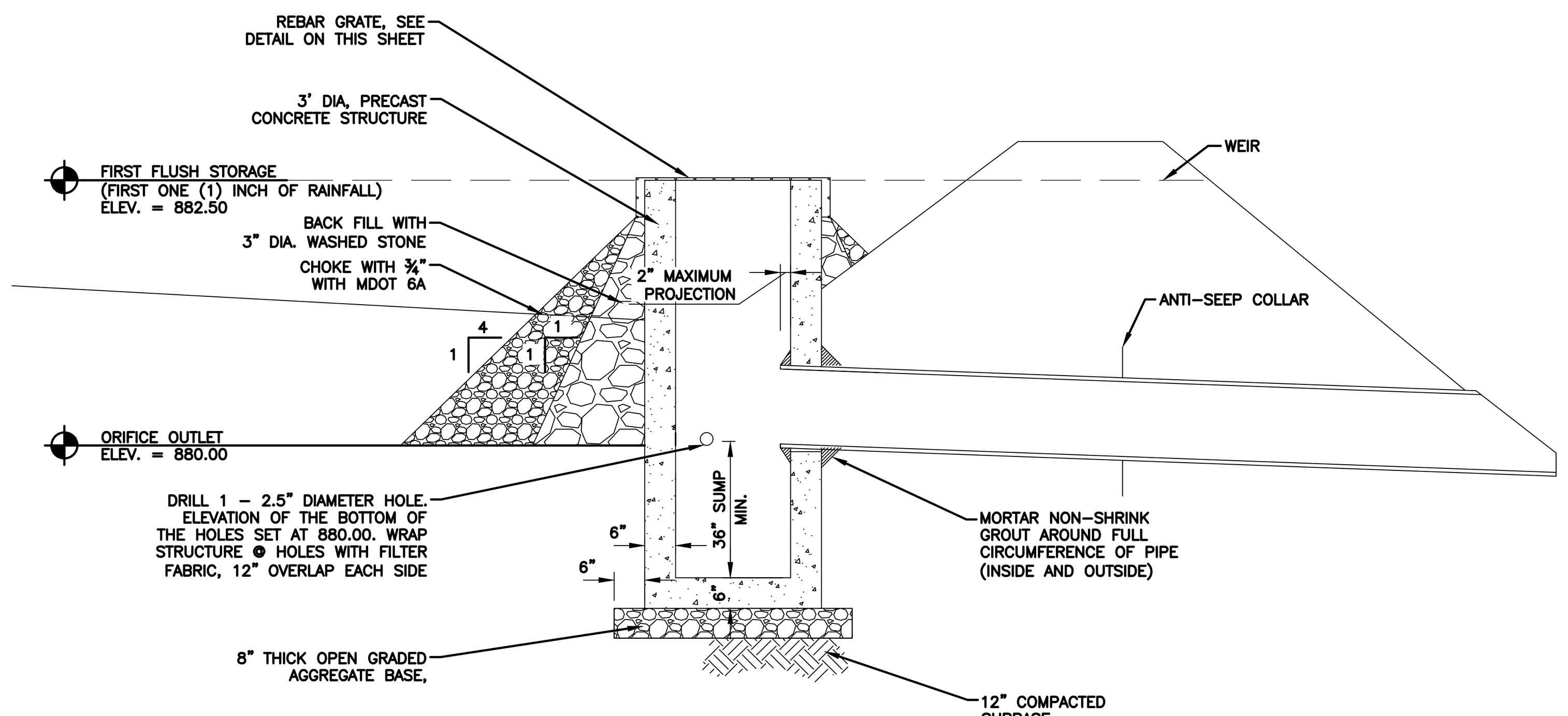
NOT TO SCALE



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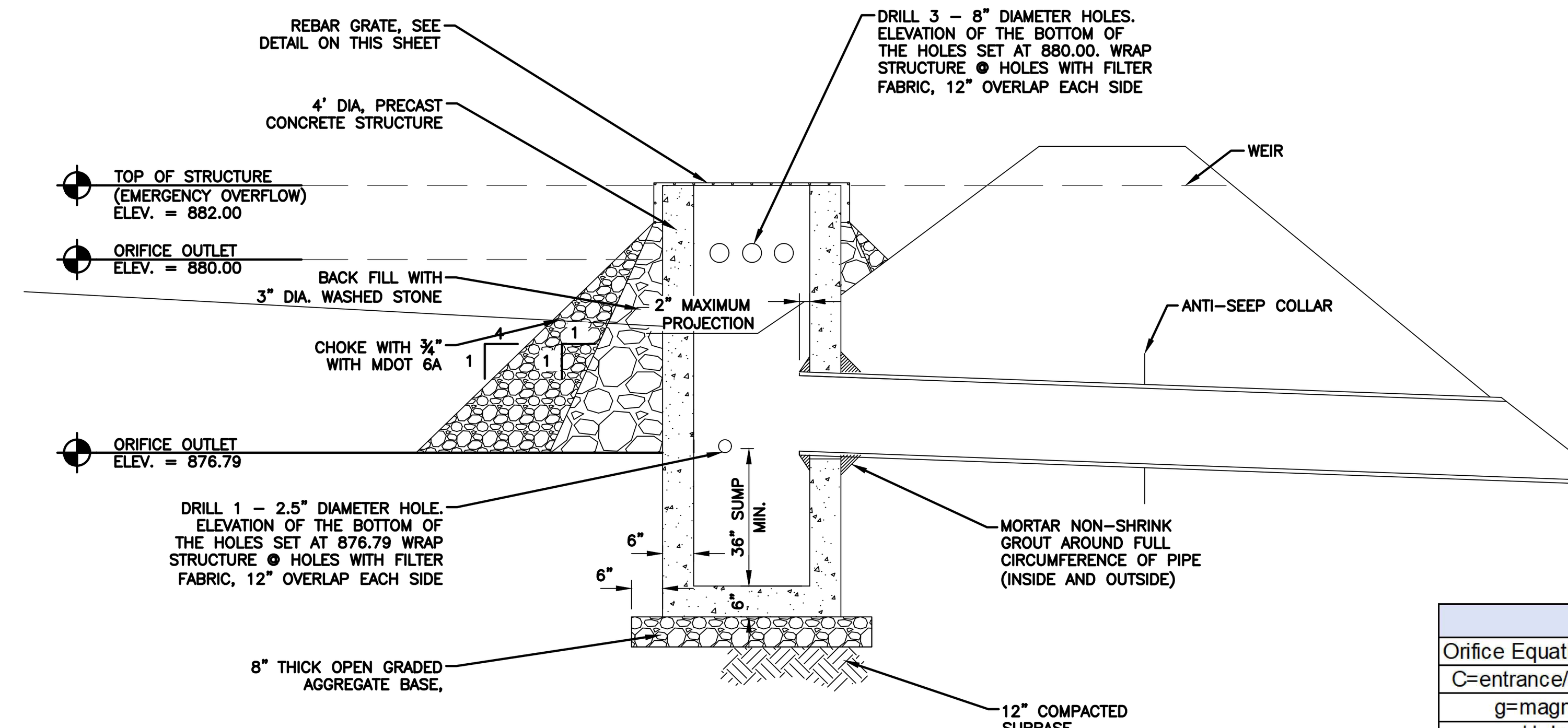
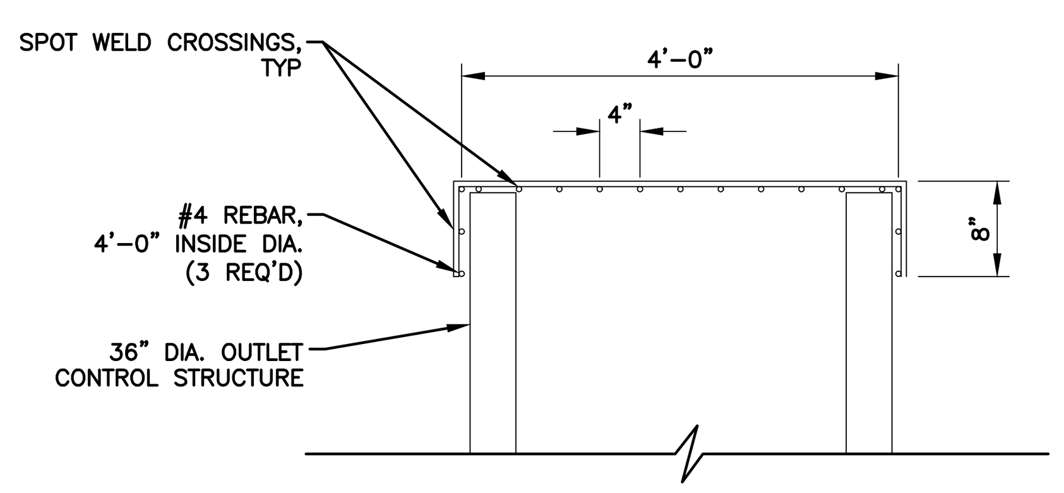
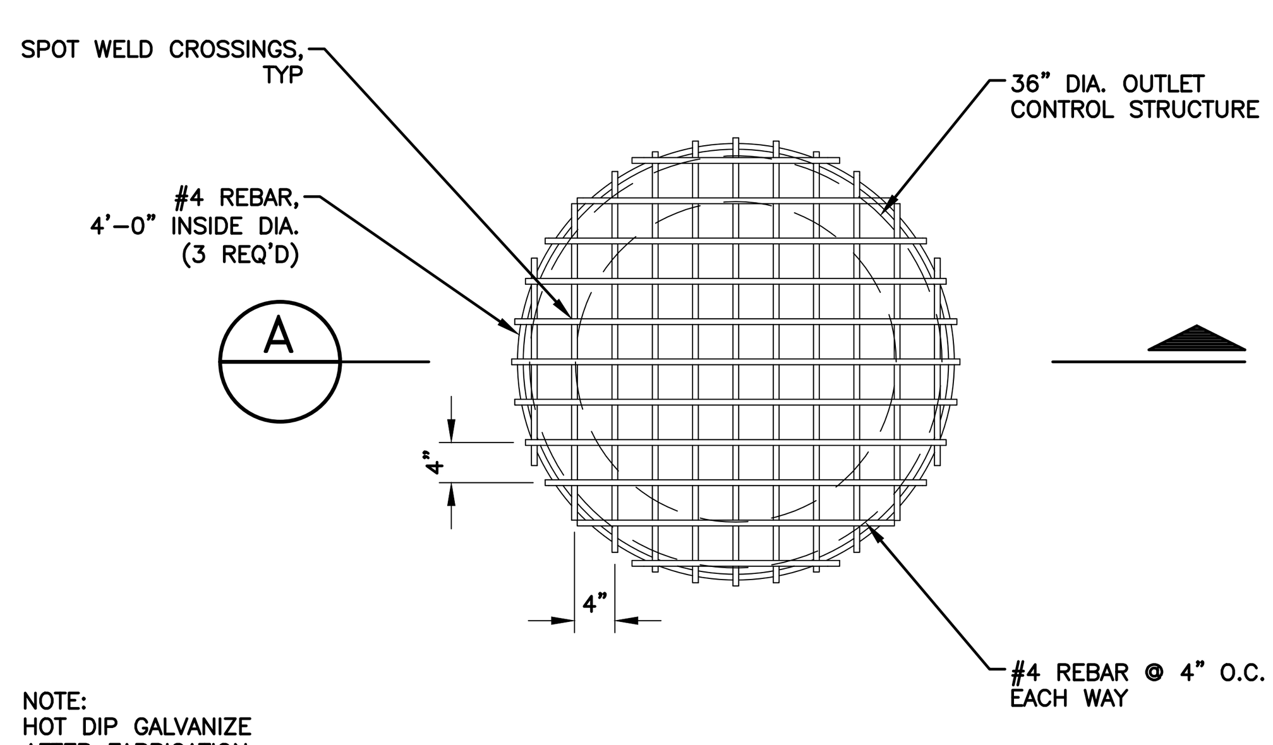


OCS #P2-1 DETAIL
NOT TO SCALE

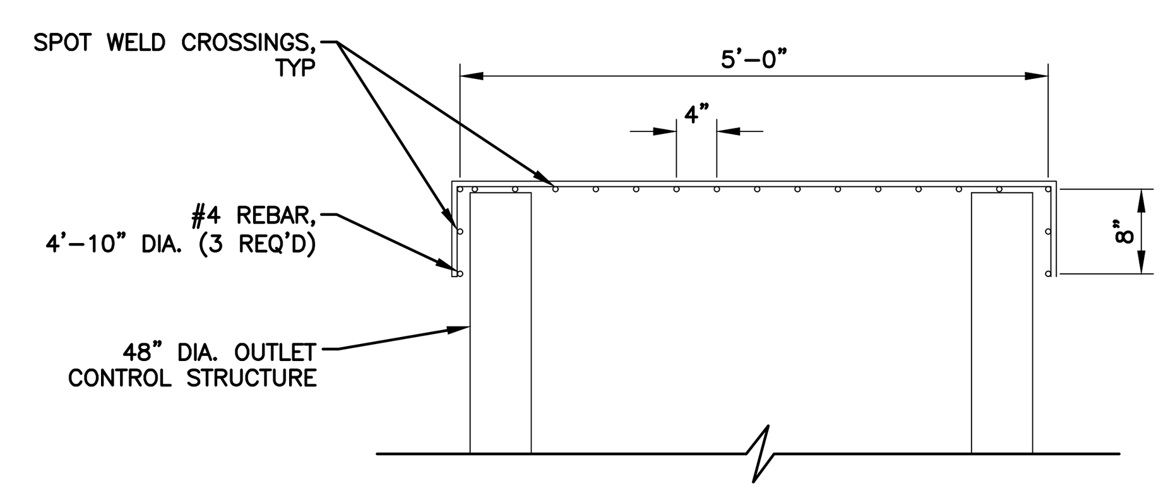


SECTION A

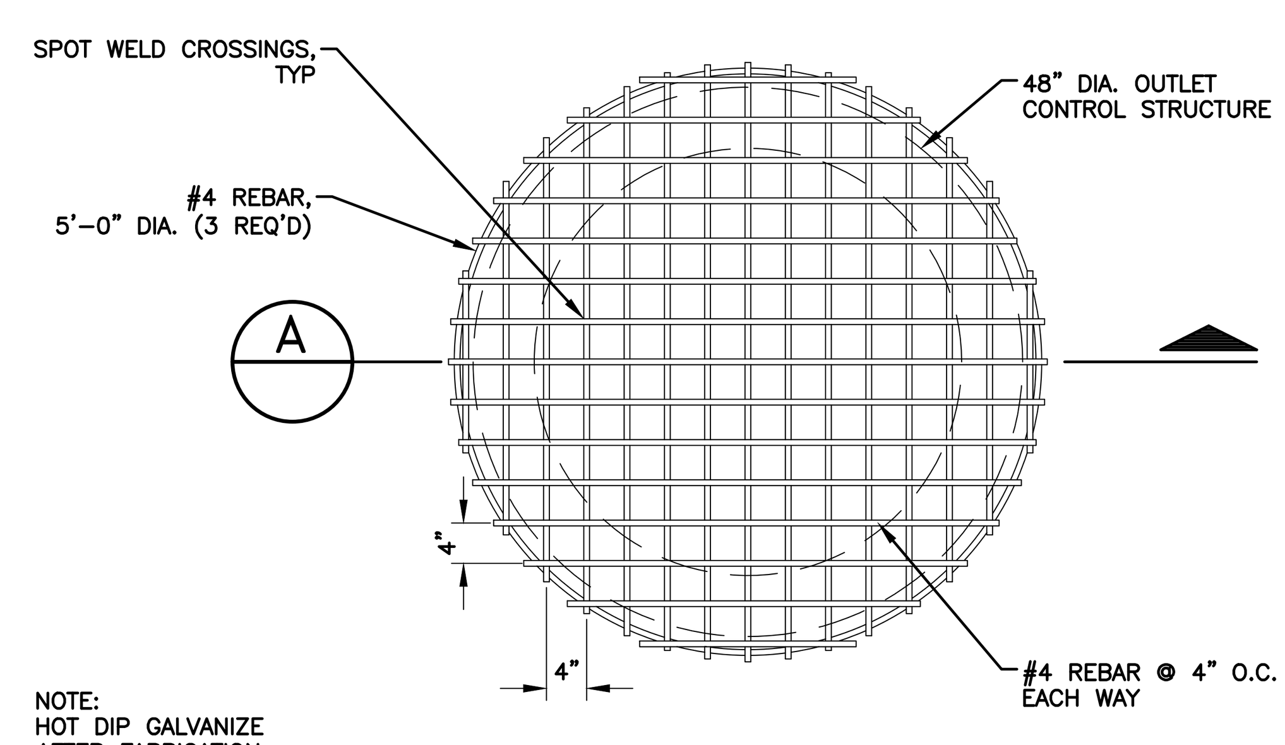


PLAN

48" - REBAR GRATE DETAIL
NOT TO SCALE



SECTION A



PLAN

60" - REBAR GRATE DETAIL
NOT TO SCALE

Proposed Detention Basin - Gut Lake

Elevation	Area (SF)	Vol (CFT)	Total Vol (CFT)	
871.64	0	0	0	
873	11131	5046	5046	
874	13435	12265	17311	
875	15896	14648	31959	
876	18514	17188	49148	
877	21289	19885	69033	
878	24222	22740	91773	
879	26456	25331	117104	Freeboard

Proposed Forebay - Gut Lake

Elevation	Area (SF)	Vol (CFT)	Total Vol (CFT)
875.46	0	0	0
876	1989	358	358
877	4193	3023	3381
877.6	5420	2876	6257

Proposed Detention Basin - Huron River

Elevation	Area (SF)	Vol (CFT)	Total Vol (CFT)	
876.79	0	0	0	
878	5618	2266	2266	
879	7824	6691	8957	
880	10340	9053	18009	
881	13160	11722	29731	
882	16107	14609	44340	
883	19281	17670	62010	Freeboard
883.5	21326	10147	72157	Freeboard

Proposed Forebay - Huron River

Elevation	Area (SF)	Vol (CFT)	Total Vol (CFT)
880	0	0	0
881	1534	511	511
882	2597	2042	2554
882.5	3215	1450	4004

	Total (ac)	Impervious (ac)	Pervious (ac)	C
Gut Lake	32.07	6.55	25.52	0.343
Huron River	14.17	3.61	10.56	0.378

Minimum Volume Requirements - Gut Lake

Water Quality Control (WQ) - Vwq = 3630*C*A	
Vwq (cuft)	39926
Forebay Storage Volume - Vf = 3630*C*A*0.15	
Vwq (cuft)	5989
Channel Protection Volume Control (CPVC) - Vcp = 4719*C*A	
Vcp (cuft)	51904
Channel Protection Rate Control (CPRC) - Ved = 6897*C*A	
Ved (cuft)	75860
Extended Detention Volume Discharge Rate - Ved discharged over 48-hours	
Qed (cfs)	0.439
Variable Release Rate - Qvrr = 1.1055 - 0.206 ln(A)	
Qvrr (cfs/ac)	0.391
Allowable 100-Year Discharge Rate - Q100p = Qvrr*A	
Q100p	12.543
100-Year Peak Runoff Volume - V100R = 18985*C*A	
V100R (cuft)	208816
100-Year Peak Inflow Rate - Q100IN = C*I100*A	
Q100IN (cfs)	69.43
Storage Curve Factor - R = 0.206 - 0.15 ln(Q100p/Q100IN)	
R	0.46
100-Year Detention Volume - V100D = (V100R*R) - VCP-P	
V100D	96613.80
V100D ≥ VED	
Required Storage (cuft)	96614

Minimum Volume Requirements - Huron River

Water Quality Control (WQ) - Vwq = 3630*C*A	
Vwq (cuft)	19460
Forebay Storage Volume - Vf = 3630*C*A*0.15	
Vwq (cuft)	2919
Channel Protection Volume Control (CPVC) - Vcp = 4719*C*A	
Vcp (cuft)	25299
Channel Protection Rate Control (CPRC) - Ved = 6897*C*A	
Ved (cuft)	36975
Extended Detention Volume Discharge Rate - Ved discharged over 48-hours	
Qed (cfs)	0.214
Variable Release Rate - Qvrr = 1.1055 - 0.206 ln(A)	
Qvrr (cfs/ac)	0.559
Allowable 100-Year Discharge Rate - Q100p = Qvrr*A	
Q100p	7.926
100-Year Peak Runoff Volume - V100R = 18985*C*A	
V100R (cuft)	101779
100-Year Peak Inflow Rate - Q100IN = C*I100*A	
Q100IN (cfs)	33.84
Storage Curve Factor - R = 0.206 - 0.15 ln(Q100p/Q100IN)	
R	0.42
100-Year Detention Volume - V100D = (V100R*R) - VCP-P	
V100D	43125.81
V100D ≥ VED	
Required Storage (cuft)	43126

Orifice Equation - Extended Detention - Gut Lake

Orifice Equation: q=ca(sqrt2gh)					
C=entrance/exit loss coefficient =		0.62			
g=magnitude of gravity =		32.2	ft/second^2		
H=hydraulic head=		1.07	ft		
Q_{ED}=		0.439	cfs		
Calculated A=	0.08530	ft^2			
Diameter of Orifice Inches	Radius of Orifice Inches	Area of Orifice Square Inches	Area of Orifice Square Feet	Total Orifices	Total sft of opening
4.00	2	12.56	0.087222	1	0.087222

Orifice Equation - 100 Year Detention - Gut Lake

Qmax =		12.54	cfs		
Q of 4" orifice		0.726	cfs		
Qallow= Qmax - Q 2"		11.814	cfs		
Orifice Equation: q=ca(sqrt2gh)					
C=entrance/exit loss coefficient =		0.62			
g=magnitude of gravity =		32.2	ft/second^2		
H=hydraulic head=		2	ft		
Calculated A=	1.67896	ft^2			
Diameter of Orifice Inches	Radius of Orifice Inches	Area of Orifice Square Inches	Area of Orifice Square Feet	Total Orifices	Total sft of opening
10	5	78.500	0.5451	3	1.635417

Orifice Equation - Extended Detention - Huron River

Orifice Equation: q=ca(sqrt2gh)					
C=entrance/exit loss coefficient =		0.62			
g=magnitude of gravity =		32.2	ft/second^2		
H=hydraulic head=		1.25	ft		
Q_{ED}=		0.214	cfs		
Calculated A=	0.03847	ft^2			
Diameter of Orifice Inches	Radius of Orifice Inches	Area of Orifice Square Inches	Area of Orifice Square Feet	Total Orifices	Total sft of opening
2.50	1.25	4.90625	0.034071	1	0.034071

Orifice Equation - 100 Year Detention - Huron River

Qmax =		7.93	cfs		
Q of 2.5" orifice		0.284	cfs		
Qallow= Qmax - Q 2"		7.646	cfs		
Orifice Equation: q=ca(sqrt2gh)					
C=entrance/exit loss coefficient =		0.62			
g=magnitude of gravity =		32.2	ft/second^2		
H=hydraulic head=		2	ft		
Calculated A=	1.08669	ft^2			
Diameter of Orifice Inches	Radius of Orifice Inches	Area of Orifice Square Inches	Area of Orifice Square Feet	Total Orifices	Total sft of opening
8	4	50.240	0.3489	3	1.046667

TRIBUTARY TO POND 1 (GUT LAKE)

Drainage Area	Impervious (Acres)	Gravel (Acres)	Lawn (Acres)	Total	Cw-Value
P1-1	0.00	0.00	1.06	1.06	0.20
P1-2	2.27	0.00	4.04	6.32	0.45
P1-3	0.61	0.00	2.86	3.47	0.32
P1-4	2.08	0.00	2.30	4.38	0.53
P1-5	1.04	0.00	10.08	11.12	0.27
P1-6	0.07	0.00	1.60	1.66	0.23
P1-7	0.10	0.00	0.26	0.36	0.39
P1-8	0.23	0.00	1.66	1.89	0.28
P1-9	0.15	0.00	0.92	1.06	0.30
P1-10	0.00	0.00	0.74	0.74	0.20
Total	6.55	0.00	25.52	32.07	0.34

TRIBUTARTY TO POND 2 (HURON RIVER)

Drainage Area	Impervious (Acres)	Gravel (Acres)	Lawn (Acres)	Total	Cw-Value
P2-1	0.00	0.00	0.57	0.57	0.20
P2-2	2.71	0.00	7.08	9.79	0.39
P2-3	0.19	0.00	1.58	1.76	0.27
P2-4	0.71	0.00	1.33	2.05	0.44
Total	3.61	0.00	10.56	14.17	0.38

811 Know what's below. Call before you dig.

REV#	DATE	DESCRIPTION	BY
1	7/19/23	SITE PLAN REVIEW	

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25251 Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

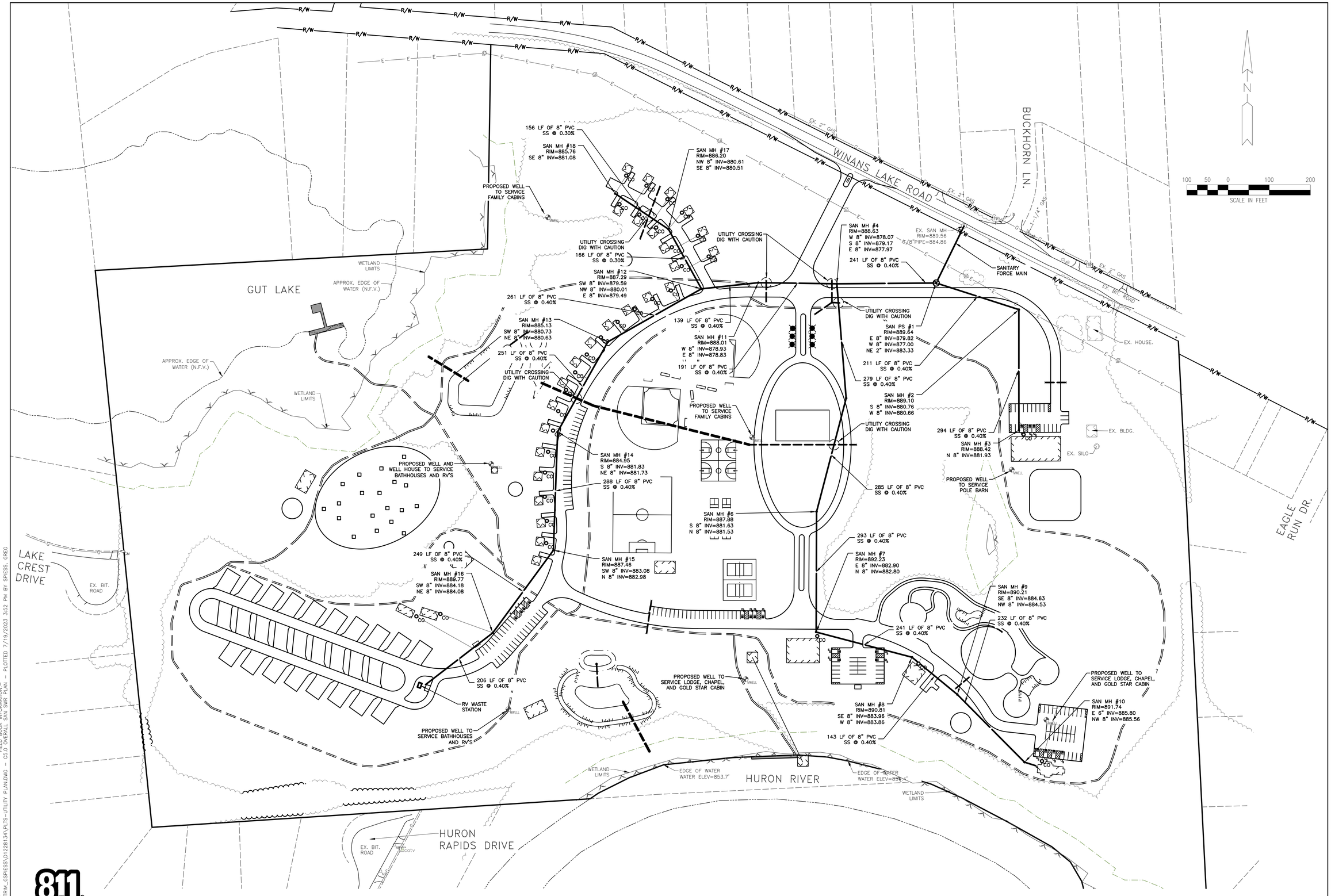
OVERALL DRAINAGE PLAN
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO. VCM2001

SHEET C4.1

PROJECT MANAGER: -- FIELD BOOK INFORMATION:-- C:\PW_WORK\WADE_TRIM_GSPIESS\D1228134\PLTS-DRAINAGE AREA PLAN.DWG -- C4.1 STORMWATER CALCULATIONS -- PLOTTED 7/19/2023 3:51 PM BY SPIESS, GREG



Know what's **below.** **Call** before you dig.

PROJECT MANAGER: -
O:\PW_WORK\WADE-TRIM_GSPIESS\D1228134\PLTS-UTILITY PLAN.DWG - C5.0 OVERALL SAN SWR PLAN - PLOTTED 7/19/2023 3:52 PM BY SPIESS, GREG
FIELD BOOK INFORMATION: -

REV.#	DATE	DESCRIPTION	BY
1	7/19/23	SITE PLAN REVIEW	

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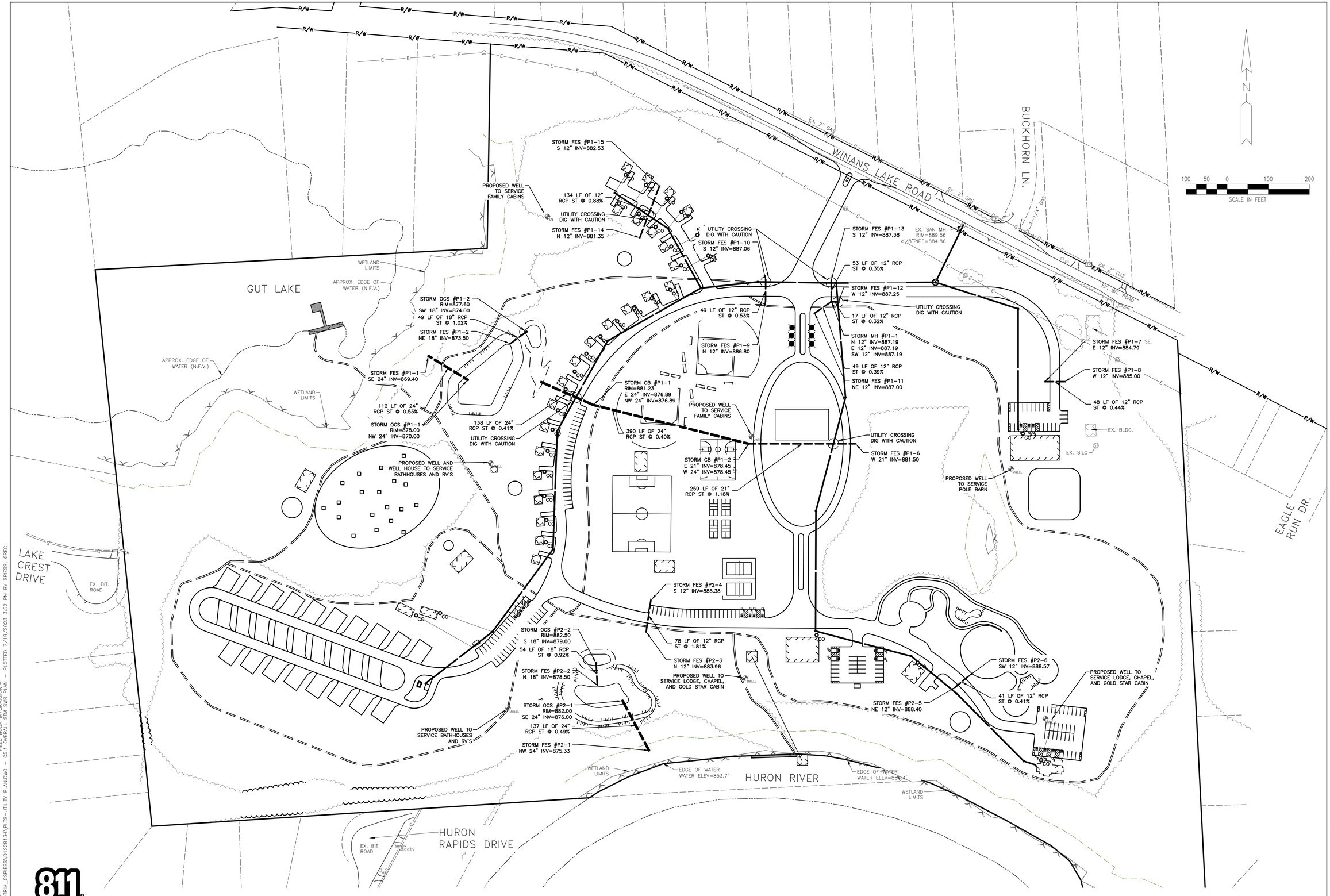
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

OVERALL UTILITY PLAN – SANITARY
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO. VCM2001

SHEET C5.0



BY	DESCRIPTION	DATE	REV#
	SITE PLAN REVIEW	7/19/23	1

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9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

OVERALL STM SWR PLAN – STORM
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO. VCM2001

SHEET C5.1

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C:\PW_WORK\WADE-TRIM_GSPIESS\D1228134\P\TS-UTILITY PLAN.DWG - C5.1 OVERALL STM SWR PLAN - PLOTTED 7/19/2023 3:52 PM BY SPIESS, GREG
FIELD BOOK INFORMATION:-

SANITARY SEWER NOTES

1. PRECAST CONCRETE MANHOLE, FLAT TOP SLABS, RISERS, CONE, TRANSITION SECTIONS AND BOTTOM SECTIONS SHALL CONFORM TO ASTM C478, AND SHALL BE CIRCULAR WITH CIRCULAR REINFORCEMENT.

2. 6–INCH THROUGH 24–INCH CONNECTIONS TO MANHOLES SHALL USE A MECHANICALLY COMPRESSIBLE FLEXIBLE JOINT, AS INDICATED ON THE PLANS.

3. RISER AND CONE SECTIONS OF A MANHOLE SHALL HAVE MODIFIED GROOVED TONGUE JOINTS WITH "O" RING GASKETS (OUTSIDE OF PAVEMENT OR TRAFFIC AREAS) OR A TONGUE AND GROOVE JOINT WITH A BUTYL RUBBER BASED GASKET TYPE SEALANT MEETING THE REQUIREMENTS OF AASHTO M 198 AND HAVING A NOMINAL SIZE OF 1–INCH.

4. ECCENTRIC CONE SECTIONS OF A MANHOLE SHALL HAVE MODIFIED GROOVED TONGUE JOINTS WITH "O" RING GASKETS AND BE PROVIDED WITH 4 STUD INSERTS CAST IN THE TOP. THE TOP SHALL HAVE A SMOOTH FINISHED SURFACE.

5. CONCRETE GRADE RINGS SHALL HAVE SMOOTH FINISHED TOP AND BOTTOM SURFACES. GRADE RINGS SHALL BE PROVIDED WITH "O" RING GASKETS.

6. ALL PIPE CONNECTIONS SHALL HAVE MECHANICALLY COMPRESSED FLEXIBLE JOINT. STYLE TO BE RES–SEAL, KOR–N–SEAL OR APPROVED EQUAL.

7. MANHOLE STEPS TO BE INSTALLED AT THE PLANT BY MFR. OF PRECAST MANHOLE SECTION WITH 16" SPACING AND SET 45° TO ℄ OF MAIN SEWER WITH THE BOTTOM STEP TO BE 24" MAX. ABOVE BOTTOM. MANHOLE STEPS CAN BE:

   7.1. CAST IRON MANHOLE STEPS SHALL CONFORM TO ASTM A48, CLASS 30, GRAY IRON WITH A MINIMUM CROSS SECTION DIMENSION OF 1–INCH IN ANY DIRECTION.

   7.2. STEEL REINFORCED PLASTIC MANHOLE STEPS SHALL BE OF SUITABLY APPROVED CO–POLYMER POLYPROPYLENE CONFORMING TO ASTM D4101, PP0344B33534Z02 WITH 1/2 INCH MINIMUM DIAMETER DEFORMED REINFORCING BAR CONFORMING TO ASTM A615, GRADE 60 AND SHALL BE IN ACCORDANCE WITH ASTM C478.

8. MANHOLE FRAMES AND COVERS SHALL CONFORM TO ASTM A48, CLASS 30, GRAY IRON. CASTINGS SHALL BE NEATLY MADE AND FREE FROM CRACKS, COLD SHEETS, HOLES AND OTHER DEFECTS. SURFACES OF CASTING SHALL BE GROUND TO ASSURE PROPER FIT AND TO PREVENT ROCKING.

   8.1. FOR MANHOLES, USE A BOLTED WATERPROOF FRAME WITH A PRESSURE TIGHT COVER. BOLTED DOWN FRAME AND COVER SHALL BE INSTALLED AS INDICATED ON THE PLANS.

   8.2. MANHOLE COVERS STYLE SHALL BE APPROVED BY LOCAL APPROVING AGENCY PRIOR TO INSTALLATION.

9. PIPE MATERIAL SHALL BE AS NOTED ON PLAN OR AS APPROVED BY THE LOCAL APPROVING AGENCY THE FOLLOWING ARE A LIST OF PIPES:

   9.1. POLYVINYL CHLORIDE (PVC) TRUSS PIPE SHALL BE ASTM D2680. THE PIPE SHALL BE OF A DOUBLE WALL CONSTRUCTION, BRACED WITH A TRUSS–TYPE STRUCTURE WITH ALL 3 FORMED IN 1 EXTRUSION. THE TRUSS VOIDS ARE FILLED WITH LIGHTWEIGHT CONCRETE TO PROVIDE ADDITIONAL COMPRESSIVE STRENGTH AND BRACING.

   9.2. PVC SOLID WALL PIPE IN SIZES 6–INCH THROUGH 15–INCH SHALL BE ASTM D3034, SDR 35, AND IN SIZES 18–INCH THROUGH 27–INCH SHALL BE ASTM F679 SDR35, PVC.

   9.3. OTHER MATERIALS MAY BE ACCEPTABLE, HOWEVER ALL PIPE MATERIALS SHALL BE APPROVED BY THE LOCAL APPROVING AGENCY.

10. PIPE JOINTS SHALL BE:

    10.1. JOINTS FOR POLYVINYL CHLORIDE (PVC) PIPE SHALL BE ELASTOMERIC GASKETED CONFORMING TO ASTM D3212, PUSH ON TYPE JOINT.

    10.2. JOINTS FOR POLYVINYL CHLORIDE PIPE (PVC) SHALL BE ASTM D3212, PUSH–ON TYPE. A JOINT IN WHICH AN ELASTOMERIC RING GASKET IS COMPRESSED IN THE ANNULAR SPACE BETWEEN A BELL END OR SOCKET AND A SPIGOT END OF PIPE.

    10.3. IN THE EVENT OTHER PIPE MATERIAL IS USED OTHER THAT THAT LISTED, CONTACT THE ENGINEER FOR AN APPROVED JOINT STYLE.

11. BUILDING LEADS SHALL BE 6–INCH DIAMETER AND SHALL BE LAID ON A UNIFORM SLOPE AS INDICATED ON THE PLANS WITH A MIN. SLOPE OF 1.0% BUILDING LEADS SHALL BE INSTALLED TO WITH IN 1.0 FOOT OF THE PROPERTY LINE OR 5 FEET FROM THE PROPOSED BUILDING. THE CONTRACTOR SHALL INSTALL A WATER TIGHT PLUG FOR FUTURE CONNECTION BY THE PLUMBING CONTRACTOR AND MARKED WITH A 4X4 WOOD POST.

12. WYES OR TEES SHALL BE OF THE SAME MATERIAL AS THE MAINLINE PIPE. THEY SHALL BE A MOLDED WYE OR TEE FITTING PER ASTM D2680, WITH GASKETED JOINTS ON EACH END SUITABLE FOR DIRECTLY INSERTING IN THE MAINLINE PIPE. SADDLE CONNECTIONS ARE NOT ALLOWED.

13. ALL TRENCHES SHALL CONFORM TO THE DETAILS INCLUDED WITH THESE PLANS AND PIPE MANUFACTURES REQUIREMENTS.

14. CLEANOUTS SHALL BE INSTALLED AT ALL PIPE BEND LOCATIONS ON A SERVICE LEAD, LOCATED ON THE UPSTREAM SIDE OF THE SERVICE LEAD. THE MAX. SPACING FOR ALL CLEAN OUTS IS 100 HORIZONTAL FEET.

15. CONTRACTOR SHALL EXPOSE THE EXISTING SANITARY SEWER AND STRUCTURES TO WHICH THE NEW WORK IS TO BE CONNECTED AND NOTIFY ENGINEER OF ANY CHANGES IN THE HORIZONTAL OR VERTICAL LOCATION. CONTRACTOR WILL VERIFY THE VERTICAL AND HORIZONTAL LOCATIONS OF THE EXISTING SYSTEM AND SHALL INFORM THE ENGINEER AS TO THE NECESSARY ADJUSTMENTS REQUIRED TO ALIGN THE NEW SANITARY SEWER WORK WITH THE EXISTING SYSTEM IF REQUIRED.

16. ALL CONCRETE USED FOR INSTALLATION OF FLOW CHANNELS AND BACKFILL SHALL BE 3500 PSI.

17. CONNECTIONS TO EXISTING PIPES SHALLBE MADE WITH ENGINEER APPROVED METHODS. STAINLESS STEEL SHEAR RING FERNCOS SHALL BE USED IF FERNCO CONNECTIONS ARE ALLOWED BY AGENCY HAVING JURISDICTION.

18. IN ACCORDANCE WITH 10–STATE STANDARDS IF AN UPSTREAM SANITARY SEWER PIPE CONNECTION IS GREATER THAN 24" ABOVE THE DOWNSTREAM PIPE A DROP CONNECTIONS IS REQUIRED.

STORM SEWER NOTES

1. ALL STORM SEWER CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND GENERAL SPECIFICATION OF THE AGENCY OR AGENCIES HAVING JURISDICTION OF THE STORM SEWER AND CONSTRUCTION AREA.

2. DETAILS ARE FOR STRUCTURES WITH NO MORE THAN TWO PIPES, 180° APART. LARGER DIAMETER STRUCTURES MAY BE REQUIRED FOR DIFFERENT CONFIGURATIONS.

3. ALL STRUCTURES REQUIRE A MINIMUM OF 8–INCHES OF WALL BETWEEN PIPE OPENINGS. LARGER DIAMETER STRUCTURES MAY BE REQUIRED WHERE PIPE ENTERING THE STRUCTURE ARE LESS THAN 90° APART IN ANY DIRECTION.

4. ALL CASTING RIMS SHALL BE SET TO GRADE OR AS SHOWN ON THE PLANS.

5. MANHOLE STEPS SHALL BE INSTALLED AT LOCATIONS SHOWN ON THE DETAILS AND SHALL BE:

   5.1. CAST IRON CONFORMING TO ASTM A48, CLASS 30 GRAY IRON WITH A MIN. CROSS SECTION DIMENSION OF 1–INCH IN ANY DIRECTION.

   5.2. STEEL REINFORCED POLYPROPYLENE ASTM 4101, PP0344B33534Z02 WITH 1/2–INCH MIN. DIAMETER DEFORMED REINFORCING BAR CONFORMING TO ASTM A615, GRADE 60.

6. MANHOLE AND CATCH BASINS FRAME AND COVER/GRATE SHALL BE CONFORM TO ASTM A48, CLASS 30, GRAY IRON AND BE AS FOLLOWS (**):

   6.1. MANHOLES: EJ #1040 WITH A SOLID COVER (OR APPROVED EQUAL).

   6.2. CATCH BASINS:

   LAWN AREA: EJ #1040 WITH A TYPE N OVAL GRATE (OR APPROVED EQUAL).

   PAVEMENT (ROUND): EJ #1040 WITH A TYPE M1 GRATE "DUMP NO WASTE" (OR APPROVED EQUAL).

   PAVEMENT (SQUARE): EJ #5724 FRAME AND GRATE (OR APPROVED EQUAL).

   CURB:

   18" STANDARD CURB: EJ #7045Z W/ 7040 M1 GRATE & EJ #7050 T–1 BACK OR APPROVED EQUAL

   24" STANDARD CURB: EJ #7045Z W/ 7045 M1 GRATE EJ #7050 T–1 BACK OR APPROVED EQUAL

   ROLL CURB: EJ #7085 W/ M1 GRATE OR APPROVED EQUAL

   MOUNTABLE CURB: EJ #7250 OR APPROVED EQUAL

   WEDGE CURB & GUTTER: EJ #7300 W/ M GRATE OR APPROVED EQUAL

   DRIVEWAY GUTTER: EJ #7065 W/ 7045 M1 GRATE OR APPROVED EQUAL

   VALLEY GUTTER: EJ# #4410 OR APPROVED EQUAL

   **LOCAL APPROVING AGENCIES CASTINGS SHALL SUPERSEDE THE LIST PROVIDED HERE.

   6.3. ALL MANHOLE/CATCH BASIN CONNECTIONS SHALL BE PER THE DETAILS INCLUDED IN THIS SET.

   6.4. ALL MANHOLES WITH 36" DIAMETER PIPE CONNECTIONS SHALL HAVE CONCRETE FLOW CHANNEL.

7. DIFFERENTIAL OF EXCAVATION AROUND EXISTING MANHOLES SHALL NOT EXCEED SIX FEET.

8. PLACE GRANULAR MATERIAL BACKFILL WITHIN THREE FEET OF ALL STRUCTURES ALL BACK FILL SHALL BE COMPACTED IN MAX. 12" LIFTS COMPACTED TO A MINIMUM 95% OF THE MAXIMUM DRY DENSITY DETERMINED BY MODIFIED PROCTOR TEST.

9. ALL STORM SEWER PIPE SHALL HAVE BEDDING PER THE DETAIL ON THIS SHEET UNLESS OTHERWISE NOTED ON THE PLANS.

10. ALL PRECAST PRODUCTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C–478.

11. ALL JOINTS FOR PRECAST CONCRETE MANHOLE SECTIONS SHALL BE THE SAME AS RCP PIPE.

12. ALL DRAINAGE PIPE SHALL BE AS NOTED ON PLANS.

    12.1. ALL REINFORCED CONCRETE PIPE (RCP) SHALL CONFORM TO ASTM C76 CLASS IV, CIRCULAR REINFORCED.

    12.2. ALL HIGH DENSITY POLYETHYLENE PIPE (HDPE) SHALL BE SMOOTH LINED CORRUGATED POLYETHYLENE PIPE MEETING AASHTO M252, TYPE S FOR SIZES 4" TO 10" DIAMETER AND AASHTO M294, TYPE S FOR 12" TO 48" DIAMETER.

    12.3. ALL CORRUGATED PLASTIC EDGE DRAINS / UNDERDRAINS (CPP) SHALL MEET THE REQUIREMENTS OF AASHTO M252 FOR POLYETHYLENE TUBING. ALL UNDERDRAINS SHALL BE WRAPPED IN A GEOTEXTILE WRAP. ALL CORRUGATED METAL PIPE (CMP) SHALL CONFORM TO AASHTO M36.

    12.4. ALL POLYVINYL CHLORIDE SOLID WALL PIPE (PVC) SHALL IN SIZES SHALL BE SDR 35.

13. ALL PIPE JOINTS SHALL BE:

    13.1. RCP: ALL JOINTS SHALL BE PREMIUM JOINTS. PREMIUM JOINTS FOR CIRCULAR PIPE SHALL CONFORM TO ASTM C443 LIMITED AS FOLLOWS: SECTION 5.1 OF C443, "PHYSICAL REQUIREMENTS FOR GASKETS," SHALL BE REPLACED WITH SECTION 6.9 OF C361, "RUBBER GASKETS." ALSO, SECTION 5 OF C443 SHALL BE LIMITED TO A MODIFIED GROOVED TONGUE TO RECEIVE A RUBBER GASKET.

    13.2. HDPE: JOINTS SHALL BE BELL & SPIGOT TYPE WITH RUBBER GASKETS ON BOTH SIDES OF THE JOINT CONFORMING TO AND ASTM F477. SPLIT COLLAR COUPLERS ARE NOT ALLOWED. JOINTS SHALL BE WATERTIGHT MEETING THE PERFORMANCE REQUIREMENTS OF ASTM D3212.

    13.3. CMP: JOINTS FOR CORRUGATED METAL PIPE SHALL BE MADE BY USE OF COUPLING BANDS. COUPLING BANDS SHALL BE OF THE SAME MATERIAL AS SPECIFIED FOR THE PIPE AND SHALL PREVENT INFILTRATION OF THE SIDE FILL MATERIAL. COUPLING BANDS SHALL BE CORRUGATED TO MATCH THE CORRUGATIONS OF THE PIPE TO BE JOINTED, AND SHALL INCLUDE TWO (2) "O" RING NEOPRENE GASKETS FOR EACH JOINT. DIMPLE BANDS SHALL NOT BE USED. JOINTS SHALL BE WRAPPED WITH A 3 FOOT (1 M) WIDE GEOTEXTILE FILTER FABRIC CENTERED ON THE JOINT.

    13.4. PVC: JOINTS SHALL BE ASTM D3212, PUSH–ON TYPE. A JOINT IN WHICH AN ELASTOMERIC RING GASKET IS COMPRESSED IN THE ANNULAR SPACE BETWEEN A BELL END OR SOCKET AND A SPIGOT END OF PIPE.

14. THE CONTRACTOR SHALL EXPOSE THE EXISTING STORM SEWER AND STRUCTURES TO WHICH THE NEW WORK IS TO BE CONNECTED AND VERIFY THE EXACT VERTICAL AND HORIZONTAL LOCATIONS OF THE EXISTING SYSTEM. HE SHALL INFORM ENGINEER AS TO THE NECESSARY ADJUSTMENTS REQUIRED TO ALIGN THE NEW STORM SEWER WORK WITH THE EXISTING SYSTEM IF REQUIRED.

15. ALL CATCH BASIN STRUCTURES, SEE DETAIL THIS SHEET.

16. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONNECT ALL BUILDING FOOTING DRAINS TO THE NEAREST DRAINAGE STRUCTURE, COORDINATE WITH ARCHITECTURAL PLANS.

17. TRENCH BACKFILL:

    17.1. ALL PIPE THAT RUNS UNDER PAVEMENT, GRAVEL OR CONCRETE SURFACE AND WITHIN A 1 ON 1 INFLUENCE OF THE PAVEMENT, GRAVEL OR CONCRETE SURFACE TO RECEIVE 100% GRANULAR MATERIAL (SEE NOTE) COMPACTED TO A MINIMUM 95% OF THE MAXIMUM DRY DENSITY DETERMINED BY MODIFIED PROCTOR TEST.

    17.2. ALL PIPE THAT RUNS OUTSIDE THE PAVED, GRAVEL OR CONCRETE SURFACE SHALL BE BACKFILLED IN MAX 12" LIFTS WITH SUITABLE NATIVE MATERIAL COMPACTED TO A MINIMUM 95% OF THE MAXIMUM DRY DENSITY DETERMINED BY MODIFIED PROCTOR TEST.

18. MATERIALS:

    18.1. GRANULAR MATERIAL – MDOT CLASS II SAND

    18.2. OPEN GRADED AGGREGATE – MDOT 6A OR AASHTO #57

    18.3. DENSE GRADED AGGREGATE – MDOT 22AA CRUSHED LIMESTONE

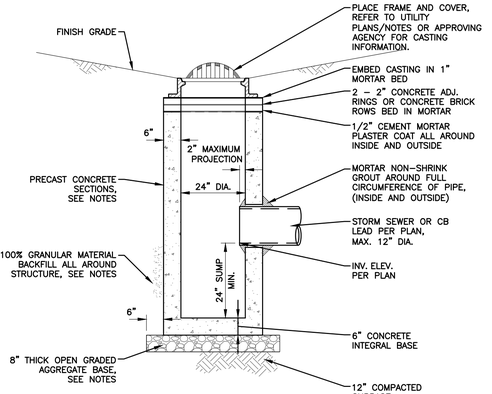
Know what's **below.** **Call** before you dig.

STORM SEWER STRUCTURE TABLE

STR. #	SIZE	RIM	INVERTS	NORTHING	EASTING
STORM CB #P1–1	48"	881.23	E 24" 876.89 NW 24" 876.89	354046.12	13270926.82
STORM CB #P1–2	48"	883.22	E 21" 878.45 W 24" 878.45	353951.56	13271304.97
STORM FES #P1–1	48"	874.58	SE 24" 869.40	354165.52	13270525.76
STORM FES #P1–2		875.71	NE 18" 873.50	354195.12	13270725.07
STORM FES #P1–5		878.54	SE 24" 876.33	354101.70	13270800.08
STORM FES #P1–6		883.17	W 21" 881.50	353951.60	13271563.79
STORM FES #P1–7		886.46	E 12" 884.79	354102.85	13272025.01
STORM FES #P1–8		886.67	W 12" 885.00	354102.85	13272073.01
STORM FES #P1–9		888.47	N 12" 886.80	354300.40	13271345.69
STORM FES #P1–10		888.73	S 12" 887.06	354349.40	13271345.99
STORM FES #P1–11		888.67	NE 12" 887.00	354269.21	13271465.01
STORM FES #P1–12		888.91	W 12" 887.25	354296.23	13271522.87
STORM FES #P1–13		889.05	S 12" 887.38	354350.27	13271505.56
STORM FES #P1–14		883.02	N 12" 881.35	354452.93	13271039.93
STORM FES #P1–15		884.20	S 12" 882.53	354577.97	13271087.35
STORM FES #P2–1	???"	878.08	NW 24" 875.33	353205.74	13271062.36
STORM FES #P2–2	???"	880.71	N 18" 878.50	353364.54	13270936.78
STORM FES #P2–3		885.63	N 12" 883.96	353494.34	13271055.40
STORM FES #P2–4		887.05	S 12" 885.38	353571.96	13271066.98
STORM FES #P2–5		890.07	NE 12" 888.40	353359.67	13271807.08
STORM FES #P2–6		890.23	SW 12" 888.57	353385.75	13271838.14
STORM MH #P1–1	48"	890.23	N 12" 887.19 E 12" 887.19 SW 12" 887.19	354297.27	13271505.55
STORM OCS #P1–1	48"	878.00	NW 24" 870.00	354106.99	13270621.60
STORM OCS #P1–2	36"	877.60	SW 18" 874.00	354224.11	13270764.48
STORM OCS #P2–1	48"	882.00	SE 24" 876.00	353326.75	13270998.00

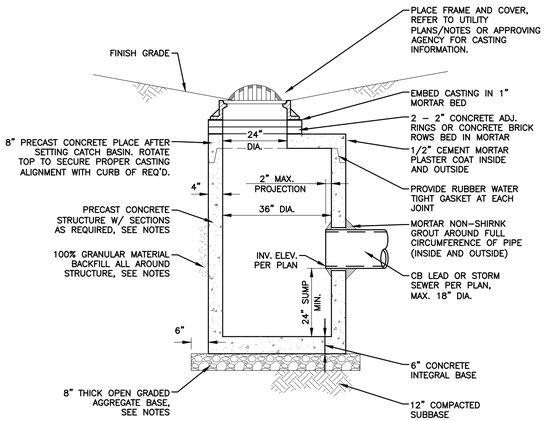
SANITARY SEWER STRUCTURE TABLE

STR. #	SIZE	RIM	INVERTS	NORTHING	EASTING
EX. SAN MH #1	48"	889.56	SW 2" 884.50	354483.28	13271826.53
SAN MH #2	48"	889.10	S 8" 880.76 W 8" 880.66	354279.90	13271959.73
SAN MH #3	48"	888.42	N 8" 881.93	353986.27	13271959.79
SAN MH #4	48"	888.63	W 8" 878.07 E 8" 877.97 S 8" 879.17	354342.63	13271517.52
SAN MH #5	48"	885.50	S 8" 880.39 N 8" 880.29	354064.63	13271540.14
SAN MH #6	48"	887.88	S 8" 881.63 N 8" 881.53	353788.83	13271468.28
SAN MH #7	48"	892.23	E 8" 882.90 N 8" 882.80	353496.20	13271467.19
SAN MH #8	48"	890.81	SE 8" 883.96 W 8" 883.86	353434.96	13271700.11
SAN MH #9	48"	890.21	SE 8" 884.63 NW 8" 884.53	353344.43	13271810.19
SAN MH #10	48"	891.74	NW 8" 885.56 E 6" 885.80	353179.98	13271973.33
SAN MH #11	48"	888.01	W 8" 878.93 E 8" 878.83	354345.36	13271326.66
SAN MH #12	48"	887.29	SW 8" 879.59 E 8" 879.49 NW 8" 880.01	354330.41	13271188.54
SAN MH #13	48"	885.13	SW 8" 880.73 NE 8" 880.63	354201.75	13270961.50
SAN MH #14	48"	884.95	S 8" 881.83 NE 8" 881.73	353982.94	13270839.12
SAN MH #15	48"	887.46	SW 8" 883.08 N 8" 882.98	353695.01	13270828.79
SAN MH #16	48"	889.77	SW 8" 884.18 NE 8" 884.08	353494.37	13270681.68
SAN MH #17	48"	886.20	NW 8" 880.61 SE 8" 880.51	354475.47	13271108.26
SAN MH #18	48"	885.76	SE 8" 881.08	354561.84	13270978.91
SAN PS #1	48"	889.64	E 8" 879.82 W 8" 877.00 NE 2" 883.33	354344.48	13271758.91



24" DIA. CATCH BASIN DETAIL

NOT TO SCALE



36" DIA. CATCH BASIN DETAIL

NOT TO SCALE

STANDARD SANITARY MANHOLE

NOT TO SCALE

REV#	DATE	BY
1	7/19/23	SITE PLAN REVIEW DESCRIPTION

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2525 t Northline Rd.
Taylor, MI 48180
734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

UTILITY DETAILS
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO. VCM2001

SHEET C5.2

PROJECT MANAGER: -
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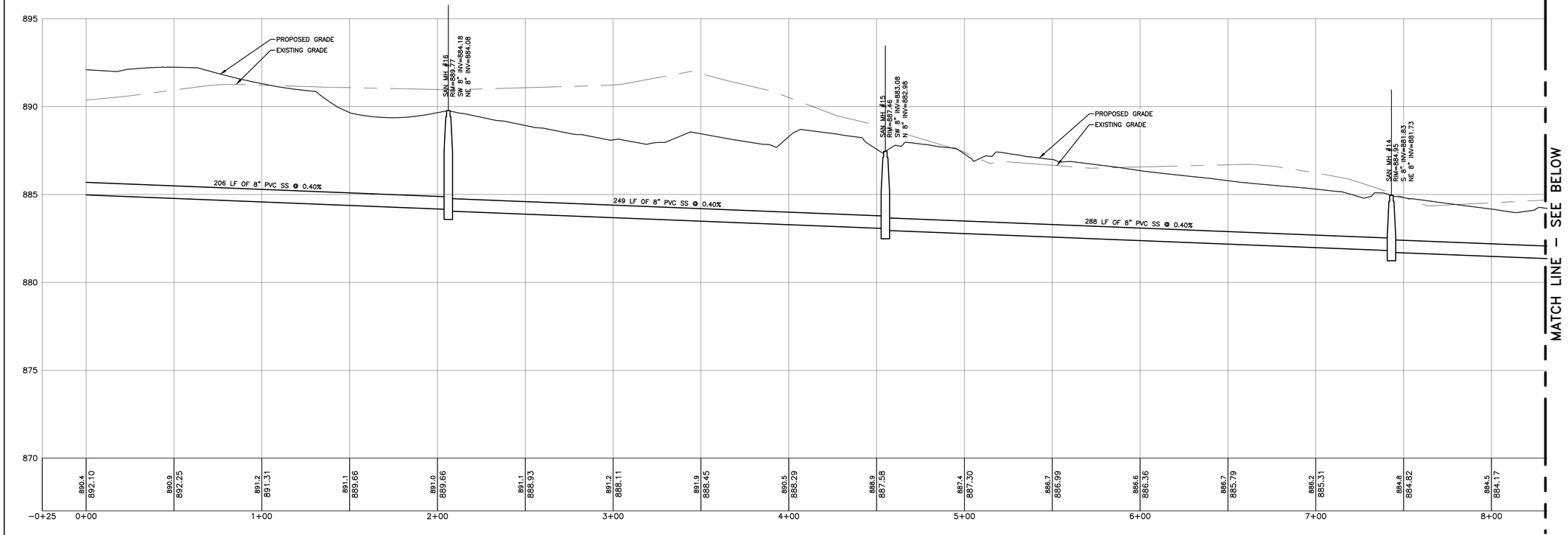
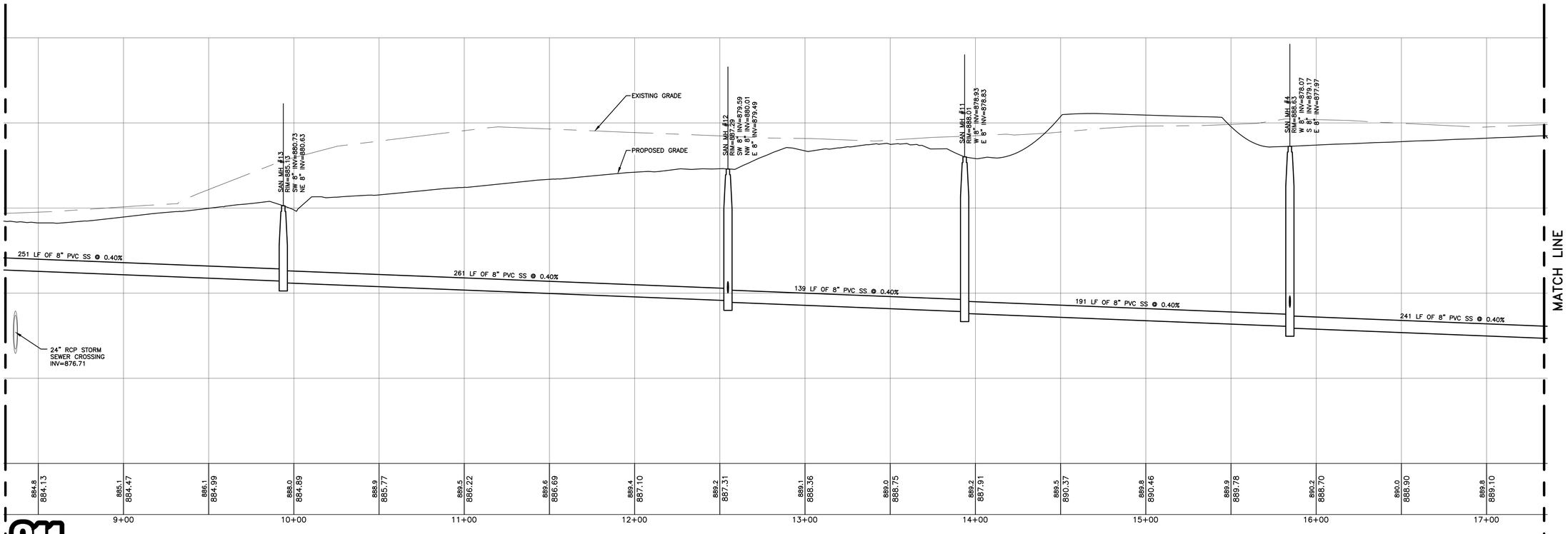
FIELD BOOK INFORMATION: -





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FREEDOM RIVER CAMPGROUND

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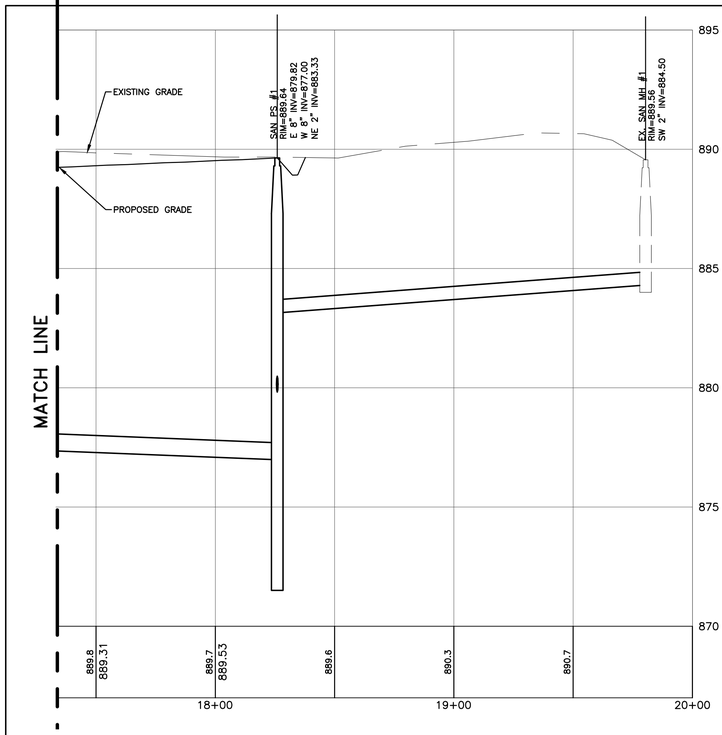
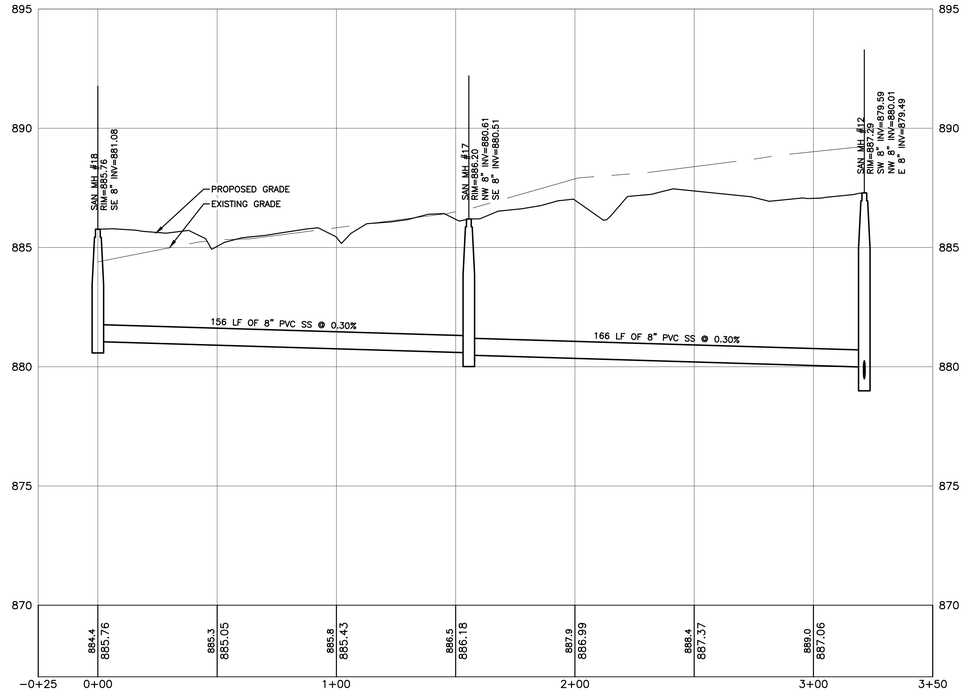
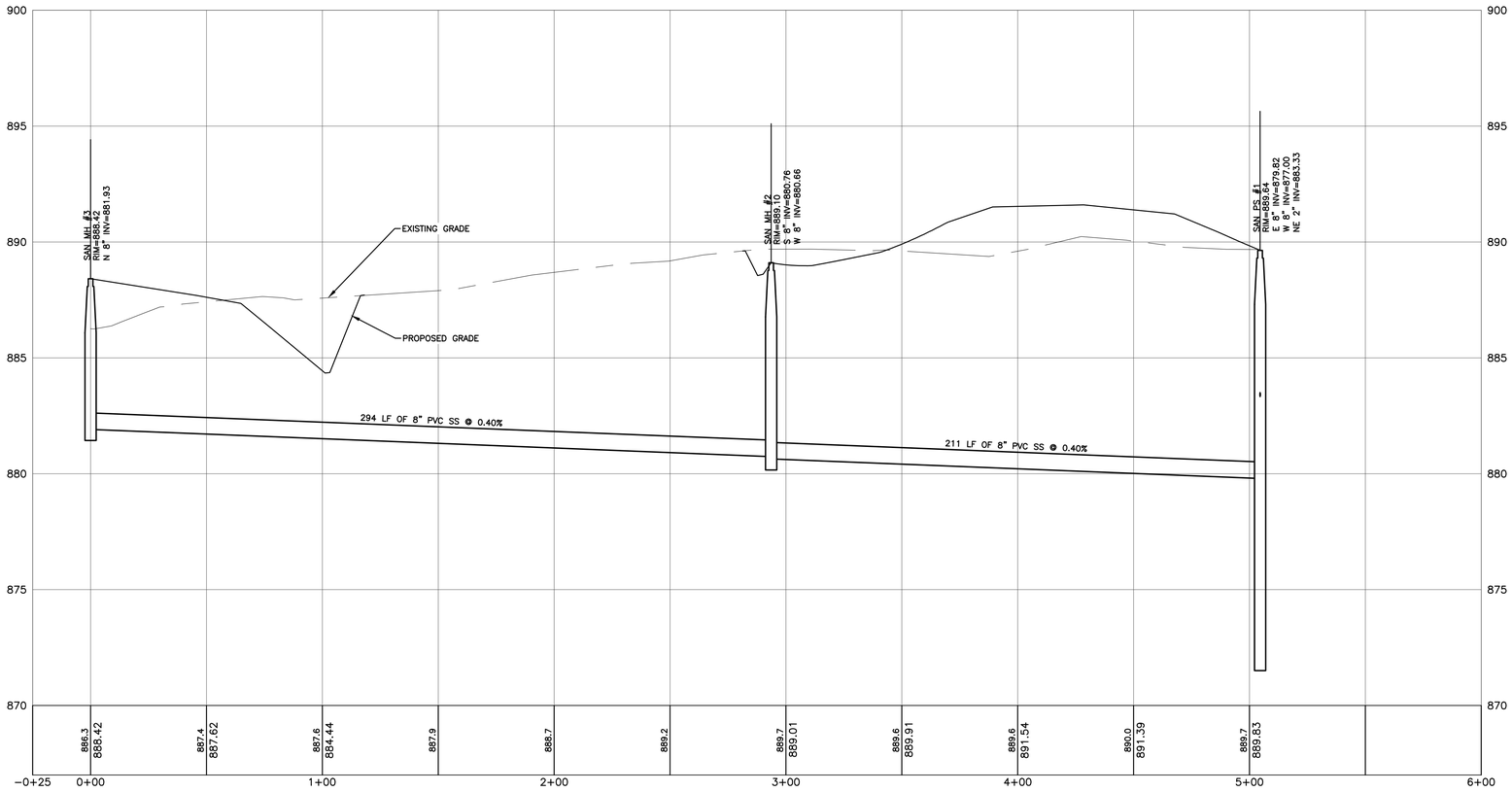
JOB NO.
VCM2001

SHEET
C5.3







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SANITARY PROFILES - B
FOR
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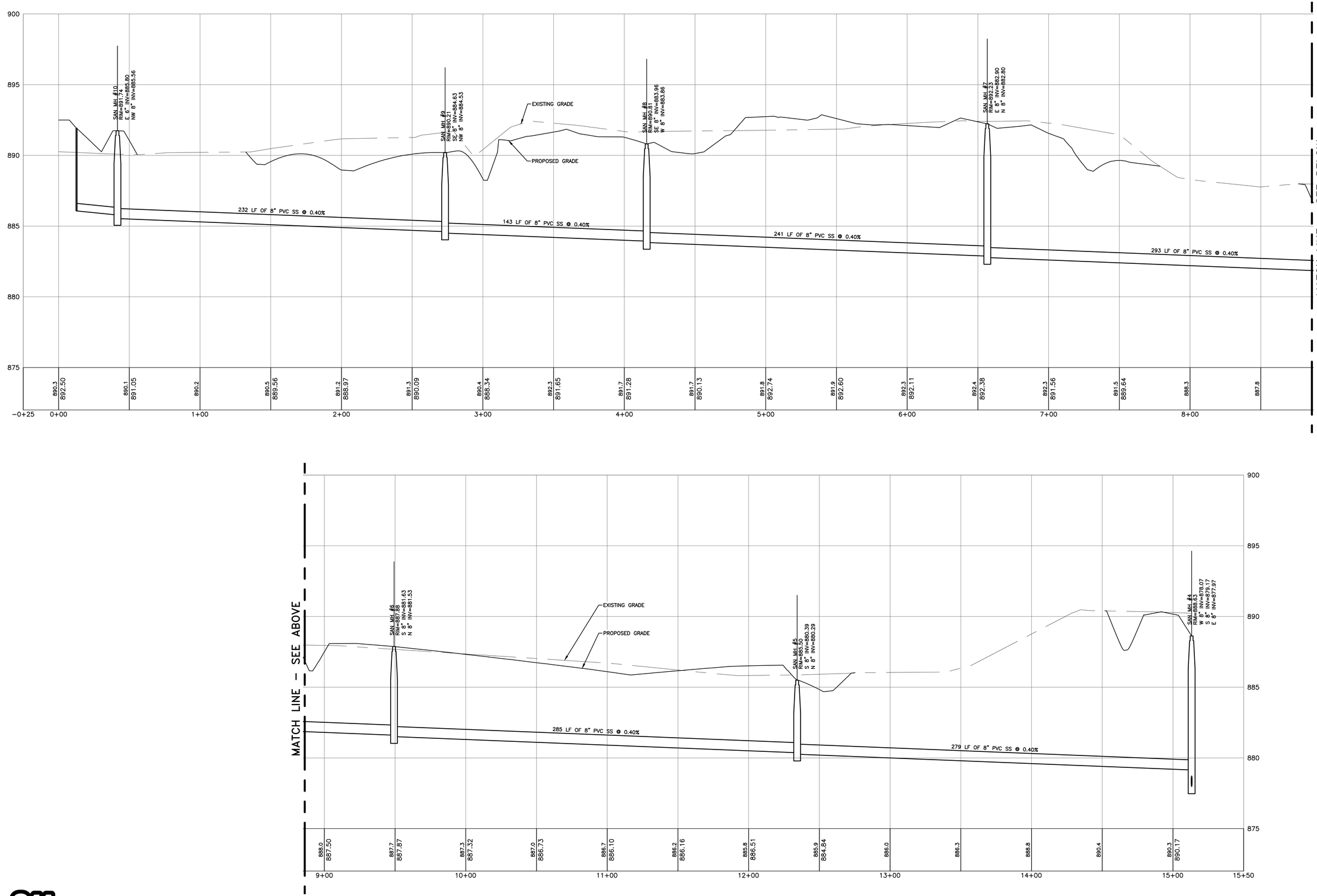
FIELD BOOK INFORMATION:-



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SPA REV 1	7/19/23	GLS

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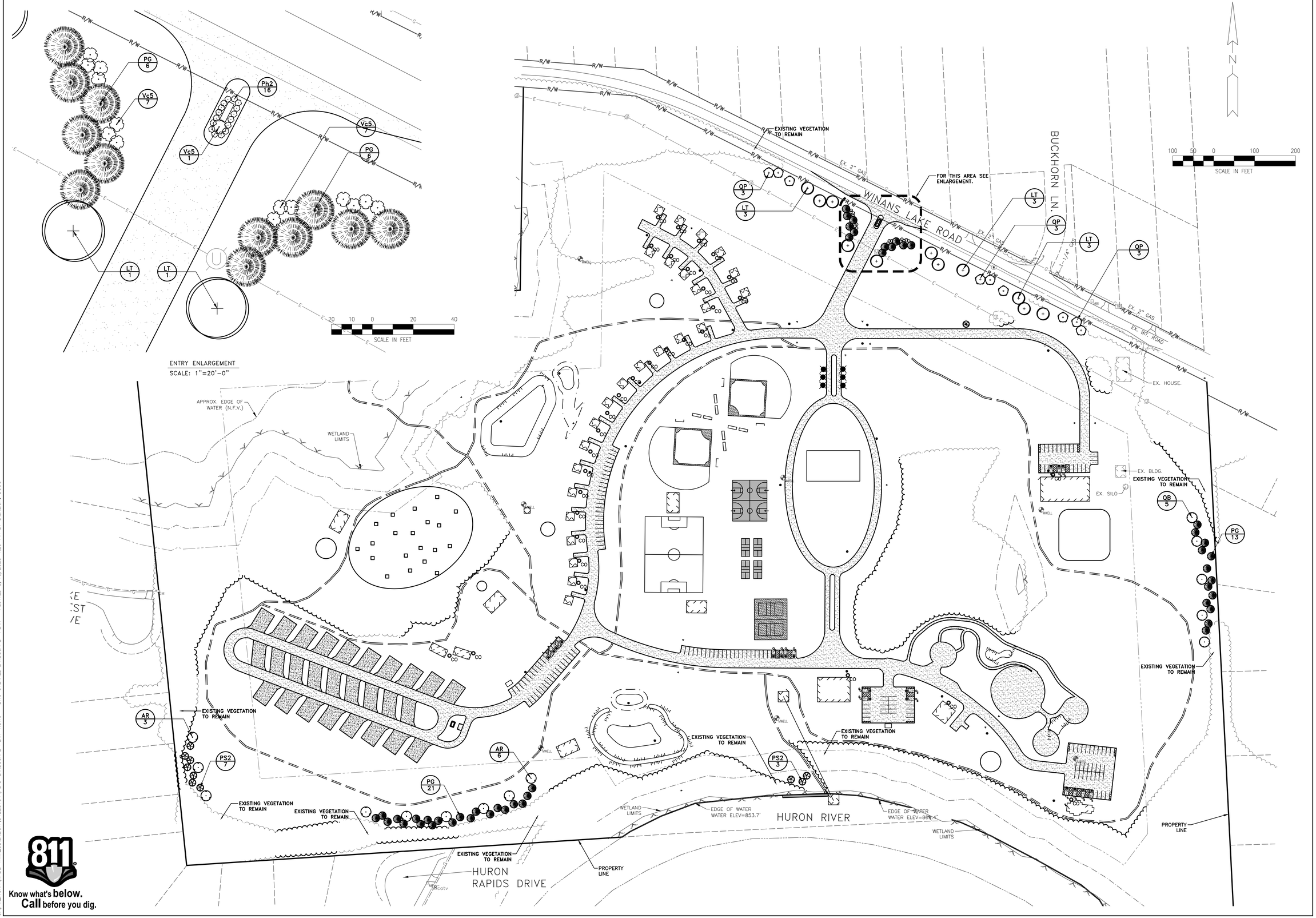

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PROJECT MANAGER:-
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FIELD BOOK INFORMATION:-

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734.947.9700
www.wadetrim.com

FREEDOM RIVER, INC.
9305 HURON RAPIDS DRIVE
WHITEMORE LAKE, MI 48189

OVERALL LANDSCAPE PLAN
FOR
FREEDOM RIVER CAMPGROUND

ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
SPA REV 1	7/19/23	GLS

JOB NO. VCM2001

SHEET L1.0

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CAL	HEIGHT	WIDTH	NATIVE	DROUGHT TOLERANT	REMARKS
	AR	9	Acer rubrum	Red Maple	B&B	2" Cal.	10' Ht.	5' Width	Yes	Medium	Full
	LT	16	Liriodendron tulipifera	Tulip Poplar	B&B	3" Cal.	12' Ht.	6' Width	Yes	Medium	Full, Well branched
	QB	5	Quercus bicolor	Swamp White Oak	B&B	2" Cal.	10' Ht.	6' Width	Yes	Low	Full, Well branched
	QP	9	Quercus palustris	Pin Oak	B&B	2" Cal.	10' Ht.	5' Width	Yes	High	Full, Well branched, Urban tolerant

EVERGREEN TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	CAL	HEIGHT	WIDTH	NATIVE	DROUGHT TOLERANT	REMARKS
	PG	58	Picea glauca	White Spruce	B&B	2" Cal.	8' Ht.	4'Width	Yes	High	Full
	PS2	10	Pinus strobus	White Pine	B&B	2.5 Cal.	8' Ht.	4'Width	Yes	Medium	Full

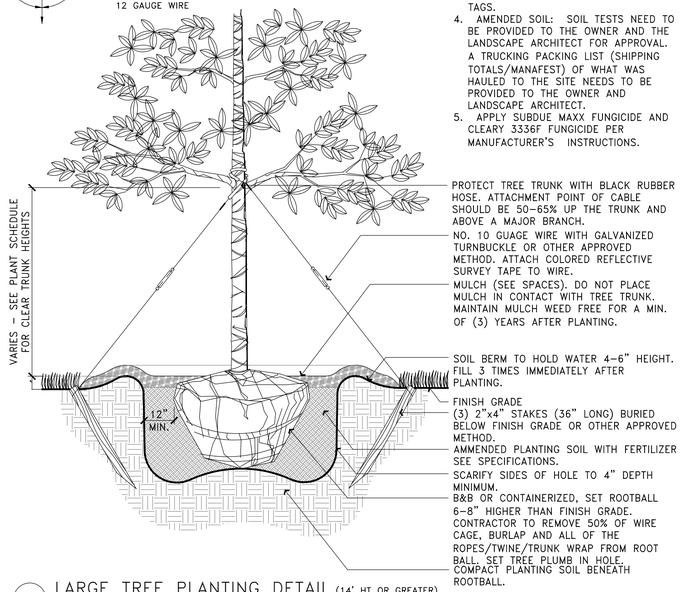
SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	HEIGHT	WIDTH	NATIVE	DROUGHT TOLERANT	
	Vc5	30	Viburnum trilobum 'Wentworth'	Wentworth American Cranberrybush	7 gal.	36" Ht.	24" Width	Yes	Medium	Full

ORNAMENTAL GRASSES	CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	HEIGHT	WIDTH	NATIVE	DROUGHT TOLERANT	
	Ph2	32	Pennisetum alopecuroides 'Hameln'	Hameln Fountain Grass	3 gal.	24" Ht.	12" Width	Yes	Medium	Full

FESCUE LAWN LOW MAINTENANCE SEED MIX

Botanical Name	Common Name	PLS LBS/ACRE
GRASSES		
Festuca brevipila	Hard Fescue	40
Festuca ovina	Sheep Fescue	30
Festuca rubra commutata	Chewings Fescue	70
Festuca rubra arenaria	Creeping Red Fescue	60

RECOMMENDED SEEDING RATE: 200 LBS PER ACRE
4 VARIETIES OF NON-NATIVE TALL FESCUES
~2,500 SEEDS PER SQ FT

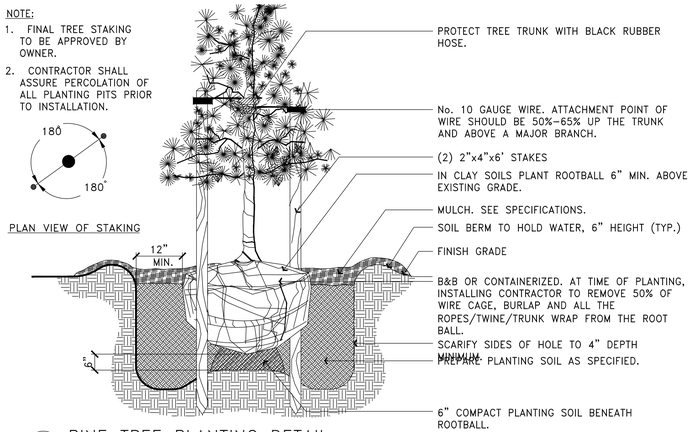


NOTES:
1. FINAL TREE LOCATION TO BE APPROVED BY OWNER.
2. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
3. REMOVE ALL FLAGGING TAPE AND TAGS.
4. AMENDED SOIL: SOIL TESTS NEED TO BE PROVIDED TO THE OWNER AND THE LANDSCAPE ARCHITECT FOR APPROVAL. A TRUCKING PACKING LIST (SHIPPING TOTALS/MANAFEST) OF WHAT WAS HAULED TO THE SITE NEEDS TO BE PROVIDED TO THE OWNER AND LANDSCAPE ARCHITECT.
5. APPLY SUBDUE MAXX FUNGICIDE AND CLEARY 3336F FUNGICIDE PER MANUFACTURER'S INSTRUCTIONS.

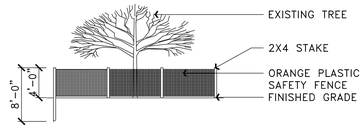
1 LARGE TREE PLANTING DETAIL (14' HT OR GREATER)
SCALE: 1"=1'-0"

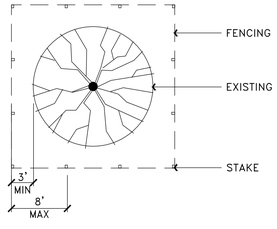
NOTE:
1. FINAL TREE STAKING TO BE APPROVED BY OWNER.
2. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

PLAN VIEW OF STAKING



2 PINE TREE PLANTING DETAIL
SCALE: NOT TO SCALE

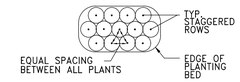




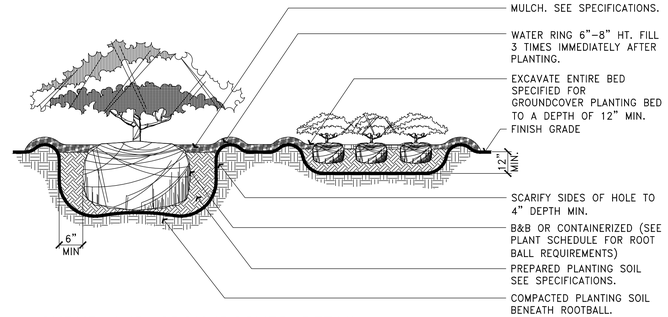
NOTES:
1. NO CONSTRUCTION MATERIALS SHALL BE STORED INSIDE FENCED AREA.
2. TREE PROTECTION TO REMAIN UNTIL SUBSTANTIAL COMPLETION OR AS DIRECTED BY THE LANDSCAPE ARCH.

3 EXISTING TREE PROTECTION
NTS

NOTES:
1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
2. IN SEMI-IMPERVIOUS SOIL CONDITIONS, ROOTBALL ELEVATION SHALL BE 2"-4" ABOVE FINISH GRADE. COORDINATE WITH LANDSCAPE ARCHITECT PRIOR TO SETTING ROOTBALL ELEVATIONS.



TYPICAL PLANTING BED PLAN



4 SHRUB AND GROUNDCOVER DETAIL
SCALE: NOT TO SCALE

PLANTING MIXTURE NOTES

1. MIXTURE SHALL BE A MIXTURE OF 6 PARTS TOPSOIL, 4 PARTS MEDIUM-COARSE SAND, AND 1 PART COMPOST. ADD FERTILIZER AT THE QUANTITY AS RECOMMENDED BY THE MANUFACTURER. PLANTING MIXTURE SHALL BE FREE FROM, STICK, STONES, SOD CLODS, OR OTHER MATERIAL WHICH MIGHT LEAVE POCKETS AROUND THE ROOTS.

2. TOPSOIL
2.1. TOPSOIL SHALL BE FERTILE, FRIABLE, SANDY CLAY LOAM WITHOUT ADMIXTURE OBUBSOIL. TOPSOIL IS TO BE FREE OF GLASS, STONES GREATER THAN ONE (1) INCH IN ANY DIMENSION, WEEDS, UNDESIRABLE GRASSES AND OTHER EXTRANEOUS MATERIALS. TOPSOIL SHALL HAVE THE FOLLOWING RANGE OF VALUES:
pH 5.0 TO 7.5
SOLUBLE SALTS 500 PPM MAX
ORGANIC CONTENT 5% TO 30%
SILT CONTENT 35% TO 50%
CLAY CONTENT 5% TO 10%
DELETERIOUS MAT'L* 5% MAX
***ROCK, GRAVEL, STONE, STICKS, ROOTS, SOD, ETC.**
2.2. TOPSOIL IS TO BE FINAL SCREENED THRU A 5/8" MAXIMUM MESH SCREEN PRIOR TO DELIVERY TO THE PROJECT SITE. ENGINEER SHALL REVIEW SOURCE AND FINAL SCREEN RESULTS PRIOR TO RELEASE OF TOPSOIL. CONTRACTOR SHALL SUBMIT A CERTIFIED ANALYSIS OF THE TOPSOIL FROM EACH SOURCE TO THE ENGINEER. TOPSOIL SHALL BE PLACED IN 4-INCH MINIMUM THICKNESS THROUGHOUT.

3. SAND FOR PLANTING MIXTURE SHALL BE CLEAN, MEDIUM-COARSE, UNGRADED SAND CONFORMING TO ASTM C3 FOR FINE AGGREGATES.
4. COMPOST SHALL BE COMPOSTED PINE BARK FINES OR OTHER HIGH-LIGNIN BARK FROM SPRUCE, FIR, OR OTHER CONIFERS.

LANDSCAPE NOTES

1. ALL PLANTS TO BE INSTALLED IN ACCORDANCE WITH AMERICAN ASSOCIATION OF NURSERYMEN LANDSCAPE STANDARDS.
2. CONTRACTOR SHALL PROVIDE A PLANTING MIXTURE MEETING THE FOLLOWING REQUIREMENTS. IF THE ENGINEER HAS ANY CONCERNS WITH THE QUALITY OF THE PLANTING MIXTURE, THE ENGINEER SHALL BE ALLOWED TWO WEEKS TO OBTAIN SOIL TEST TO DETERMINE SPECIFICATION COMPLIANCE. NO PLANT MATERIAL SHALL BE PLANTED PRIOR TO ENGINEER APPROVAL OF PLANTING MIXTURE. ALL PLANT MATERIAL SHALL BE MAINTAINED BY THE CONTRACTOR IN A VIGOROUS GROWING CONDITION DURING THIS TIME AT NO ADDITIONAL COST.
3. SPACING OF PLANT MATERIALS SHALL BE AS SHOWN ON DRAWING OR ON PLANT LIST. THE ENGINEER SHALL REVIEW THE PLACEMENT OF PLANT MATERIAL PRIOR TO AND AFTER INSTALLATION AND RESERVES THE RIGHT TO ADJUST LAYOUT TO ACCOMMODATE SITE CONDITIONS AND DESIGN INTENT.
4. ALL PLANT MATERIALS SHALL CONFORM TO PLANT SCHEDULES. SIZES SHALL BE THE MINIMUM STATED ON THE PLANT LIST OR LARGER. ALL MEASUREMENTS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "A.A.N. STANDARDS FOR NURSERY STOCK."
5. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN FINISHED AND REVIEWED BY THE ENGINEER.
6. FINAL PLANT LOCATIONS SHALL BE MARKED BY CONTRACTOR THREE WORKING DAYS PRIOR TO PLANTING FOR ENGINEER REVIEW.
7. ALL PLANTED PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANTS ORIGINAL GRADE BEFORE DIGGING.
8. PLANT MATERIAL, ESPECIALLY EVERGREENS, TO BE PLANTED HIGHER THAN NORMAL WHEN HEAVY SOIL CONDITIONS (CLAY, ETC.) PREVAIL.
9. IF FOR ANY REASON ANY BALLED AND BURLAPED PLANT MATERIALS NEED TO BE STORED ON SITE LONGER THAN A 24-HOUR PERIOD, THEIR ROOT BALLS SHALL BE PROTECTED. ALL PLANTS SHALL BE THOROUGHLY WATERED EACH DAY THEY ARE STORED ON SITE. PLANTS MAY BE STORED ON SITE FOR A MAXIMUM OF TWO (2) WEEKS, OR 14 DAYS. ANY PLANTS ALLOWED TO DRY OUT AS DETERMINED BY THE ENGINEER WILL BE REJECTED.
10. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL WRAPPING MATERIALS MADE OF SYNTHETIC OR PLASTICS SHALL BE COMPLETELY REMOVED AT TIME OF PLANTING.
11. THE CONTRACTOR SHALL FILL PLANT PIT WITH PREPARED PLANT MIX TO 1/2 DEPTH OF ROOT BALL OR ROOT MASS, PACK FIRMLY, PUDDLE WITH WATER; THEN FOR BALLED AND BURLAPED MATERIAL, THE BURLAP AND ALL LACING (INCLUDING WIRE BASKET IF NECESSARY) SHALL BE REMOVED FROM THE UPPER 1/3 OF ROOTBALL, THEN FINISH BACKFILLING ADDING SOLID FERTILIZER TO THE PLANT MIX, PACK FIRMLY AND WATER. A SAUCER SHALL BE PLACED AROUND EVERY PLANT AND SHALL BE APPROVED PRIOR TO PLACEMENT OF ANY MULCH.
12. ALL DISTURBED LAWN AREAS SHALL BE RESTORED WITH 4-INCHES OF TOPSOIL, SPREAD, FINE GRADED, AND SEEDED/SODDED AS SPECIFIED. PRIOR TO INSTALLATION OF TOPSOIL, LOOSEN SUBGRADE TO A DEPTH OF 2 INCHES. THIS WORK SHALL BE INCIDENTAL TO THE PROJECT.
13. TOPSOIL SHALL CONSIST OF FRIABLE, SHREDDED, AND SCREENED SOIL REASONABLY FREE OF GRASS, ROOTS, WEEDS, STICKS, STONES OR OTHER FOREIGN MATERIALS. THE TOPSOIL MATERIAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT. SOIL COMPOSITION SHOULD CONTAIN AN ORGANIC CONTENT OF 2 TO 6 PERCENT AND BE CLASSIFIED AS A LOAM OR SANDY LOAM AS SPECIFIED IN THE "GUIDE FOR U.S.D.A. SOIL TEXTURAL CLASSIFICATION".
14. ALL TREES AND SHRUBS ARE TO BE FERTILIZED ONCE ROOTS SYSTEM IS ESTABLISHED WITH AGRIFORM 21-GRAM FERTILIZER TABLETS AT RATES RECOMMENDED BY MANUFACTURER.
15. ALL PLANTS AND STAKES SHALL BE SET PLUMB UNLESS OTHERWISE SPECIFIED.
16. AT PLANTING TIME, ALL DEAD AND BROKEN BRANCHES SHALL BE PRUNED ON ALL DECIDUOUS TREES.
17. CONTRACTOR SHALL APPLY ENGINEER APPROVED PRE-EMERGENT HERBICIDE, "PREEN" OR EQUAL, TO SHRUB AND GROUND COVER PLANTING AREAS AT THE TIME OF PLANTING (IF SPRING PLANTED) OR THE FOLLOWING SPRING. CONTRACTOR SHALL ENSURE THE PLANT MATERIALS ARE RESISTANT TO THE HERBICIDES PROPERTIES. HERBICIDE SHALL BE APPLIED ACCORDING TO MANUFACTURERS SPECIFICATIONS AND IN ACCORDANCE WITH SOUND HORTICULTURAL PRACTICES.
18. ALL TREES, SHRUBS AND PERENNIAL GROUND COVER SHALL RECEIVE A MINIMUM DEPTH OF THREE INCHES DOUBLE SHREDDED HARDWOOD BARK MULCH. WHERE PLANT BEDS MEET PAVEMENTS, LAWN, OR STEEL EDGING CUT THE GRADE TO ALLOW FOR MULCH AND THREE-INCH DROP FROM ADJOINING FINISH GRADE.
19. ALL PLANT BEDS SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 8-INCHES AND BACKFILLED WITH SPECIFIED PLANT MIX AS PER PLANTING BED DETAILS. BEDS SHALL BE EDGED WITH METAL EDGING AROUND PERIMETER. ALL EDGING SHALL BE 4" WIDE - 12 GAUGE STEEL, COLOR BLACK. CONTRACTOR SHALL LAYOUT EDGING FOR APPROVAL AND INSTALL PER MANUFACTURERS RECOMMENDATIONS.
20. PLANTS SHALL BE WATERED BEFORE AND AFTER PLANTING IS COMPLETE. ALL TREES MUST BE STAKED, FERTILIZED AND MULCHED AND SHALL BE GUARANTEED TO EXHIBIT A NORMAL GROWTH CYCLE FOR AT LEAST ONE (1) FULL YEAR FOLLOWING PLANTING. ALL DISEASED, DAMAGED, OR DEAD MATERIAL SHOWN ON THE SITE PLAN SHALL BE REPLACED BY THE END OF THE FOLLOWING GROWING SEASON.
21. APPLICATIONS OF FERTILIZER BEYOND THE INITIAL TOPSOIL AND SEEDING SHALL BE A FERTILIZER WITH NO PHOSPHOROUS.

Know what's **below.**
Call before you dig.

BY	DESCRIPTION	DATE	REV#
	SITE PLAN REVIEW	7/19/23	1.

WADE TRIM
25251 Northline Rd.
Taylor, MI 48180
734.947.9700
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FREEDOM RIVER, INC.
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ISSUED FOR:	DATE:	BY:
SPA	6/1/23	GLS
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JOB NO. VCM2001

SHEET L1.7

PROJECT MANAGER: -
C:\PW_WORK\WADE-TRIM_DDIERLICH\D1228134\PLTS-LANDSCAPE PLAN 1.DWG - L1.7 PLANT SCHEDULE & DETAILS - PLOTTED 8/10/2023 2:01 PM BY DIERLICH, DOUG
FIELD BOOK INFORMATION: -