

FIRST CHOICE HEATING & COOLING SITE PLAN APPROVAL PACKAGE

14214 FENTON ROAD
FENTON, MI 48430

PART OF THE NORTHEAST 1/4 OF SECTION 23 &
PART OF THE NORTHWEST 1/4 OF SECTION 24
TOWNSHIP 05 NORTH, RANGE 06 EAST
FENTON TOWNSHIP, COUNTY OF GENESEE, STATE OF MICHIGAN

PROPERTY DESCRIPTION:

LEGAL DESCRIPTION
LAND SITUATED IN THE STATE OF MICHIGAN, COUNTY OF GENESEE, TOWNSHIP OF FENTON, PARCEL A: PART OF THE NORTHEAST 1/4 OF SECTION 23 AND PART OF THE NORTHWEST 1/4 OF SECTION 24, TOWNSHIP 5 NORTH, RANGE 6 EAST, DESCRIBED AS FOLLOWS: BEGINNING ON THE CENTERLINE OF FENTON ROAD N00°30'E, 69.80 FEET TO THE CENTERLINE OF FENTON ROAD AND N31°56'E, 538.49 FEET ALONG SAID CENTERLINE FROM THE EAST 1/4 CORNER OF SECTION 23; THENCE N11°19' 42"W, 549.56 FEET; THENCE N01°05' 08"E, 58.31 FEET; THENCE S73°37' 45"E, 586.30 FEET TO THE CENTERLINE OF FENTON ROAD; THENCE S31°56' W ALONG SAID CENTERLINE 81.29 FEET TO POINT OF BEGINNING.

EXCEPT PARCEL 1: PART OF THE NORTHEAST 1/4 OF SECTION 23 AND PART OF THE NORTHWEST 1/4 OF SECTION 24, TOWNSHIP 5 NORTH, RANGE 6 EAST, DESCRIBED AS FOLLOWS: BEGINNING ON THE CENTERLINE OF FENTON ROAD, N00°30'E, 69.80 FEET TO THE CENTERLINE OF FENTON ROAD AND N31°56'E, 619.78 FEET ALONG SAID CENTERLINE FROM THE EAST 1/4 CORNER OF SECTION 23; THENCE N73°37' 45"W, 586.30 FEET; THENCE N01°05' 08"E, 45.00 FEET; THENCE S75°04' 35"E, 614.78 FEET TO THE CENTERLINE OF FENTON ROAD; THENCE S31°56' W ALONG SAID CENTERLINE 61.17 FEET TO THE POINT OF BEGINNING.

PARCEL FOR INGRESS AND EGRESS: PART OF THE NORTHEAST 1/4 OF SECTION 23 AND PART OF THE NORTHWEST 1/4 OF SECTION 24, TOWNSHIP 5 NORTH, RANGE 6 EAST, DESCRIBED AS FOLLOWS: BEGINNING N00°30'E, 69.80 FEET TO THE CENTERLINE OF FENTON ROAD AND N31°56'E, 619.78 FEET ALONG SAID CENTERLINE AND N73°37' 45"W, 151.00 FEET TO THE POINT OF BEGINNING FROM THE EAST 1/4 CORNER OF SAID SECTION 23; THENCE S16°22' 15"W, 4.60 FEET; THENCE N73°55' 12"W, 200.00 FEET; THENCE N16°22' 15"E, 5.62 FEET; THENCE S73°37' 45"E, 200.00 FEET TO THE POINT OF BEGINNING.

PARCEL B: PART OF THE NORTHEAST 1/4 OF SECTION 23 AND PART OF THE NORTHWEST 1/4 OF SECTION 24, TOWNSHIP 5 NORTH, RANGE 6 EAST, DESCRIBED AS FOLLOWS: BEGINNING ON THE CENTERLINE OF FENTON ROAD, N00°30'E, 69.80 FEET TO THE CENTERLINE OF FENTON ROAD, AND N31°56'E, 619.78 FEET ALONG SAID CENTERLINE FROM THE EAST 1/4 CORNER OF SECTION 23, TOWNSHIP 5 NORTH, RANGE 6E; THENCE N73°37' 45"W, 586.30 FEET; THENCE N01°05' 08"E, 45.00 FEET; THENCE S75°04' 35"E, 614.78 FEET TO THE CENTERLINE OF FENTON ROAD; THENCE S31°56' W ALONG SAID CENTERLINE 61.17 FEET TO THE POINT OF BEGINNING.

DRAWING INDEX:

●	10-21-2022	C000 — COVER SHEET
●	10-21-2022	C100 — TOPOGRAPHIC SURVEY PLAN
●	10-21-2022	C101 — SITE REMOVAL PLAN
●	10-21-2022	C200 — SITE LAYOUT PLAN
●	10-21-2022	C300 — SITE GRADING & STORM SEWER PLAN
●	10-21-2022	C301 — SOIL EROSION CONTROL PLAN
●	10-21-2022	C302 — DRAINAGE AREA MAP & STORM SEWER DESIGN CALCULATIONS
●	10-21-2022	C400 — SITE UTILITY PLAN
●	10-21-2022	C401 — SITE PHOTOMETRIC PLAN
●	10-21-2022	C500 — SITE LANDSCAPE PLAN
●	10-21-2022	C600 — SITE DETAILS
○	-	A2 — FLOOR PLAN
○	-	A3 — BUILDING ELEVATIONS

●	DATE
○	MOST RECENT ISSUE / REVISION DATE
○	FILLED CIRCLE INDICATES SUBMITTED DRAWING

BENCHMARKS:

BM #1 PK TAG IN WEST FACE OF UTILITY POLE LOCATED AT THE NORTHEAST CORNER OF THE SITE AND APPROXIMATELY 40' WEST OF E FENTON ROAD, ELEVATION = 887.44

NPDES STATEMENT:

THE OWNER WILL NOT NEED TO OBTAIN AN NPDES STORM WATER DISCHARGE PERMIT FROM THE MDOT. TOTAL DISTURBED AREA: 1.23 ACRES

TOPOGRAPHIC SURVEY STATEMENT:

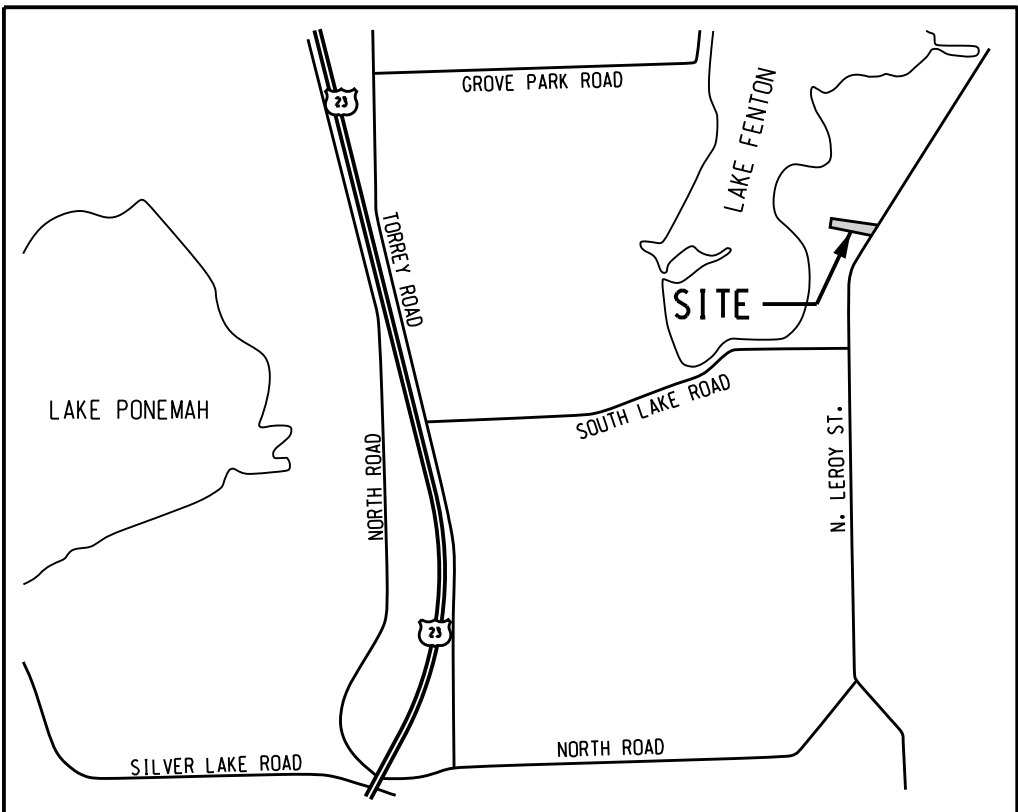
THE EXISTING FEATURES SHOWN ON THIS PLAN ARE FROM AN ACTUAL TOPOGRAPHIC SURVEY PERFORMED BY GRIGGS QUADERER, INC. IN SEPTEMBER OF 2021. THE UNDERGROUND UTILITIES SHOWN WERE EITHER VERIFIED BY THIS SURVEY OR WERE PLOTTED IN ACCORDANCE WITH THE BEST INFORMATION AVAILABLE. NO EXISTING UTILITIES WERE EXPOSED FOR VERIFICATION OF LOCATION AND ELEVATION. NO GUARANTEES ARE GIVEN THAT THE LOCATIONS ARE ABSOLUTELY ACCURATE OR THAT UTILITIES OTHER THAN THOSE SHOWN ARE NOT PRESENT.

OWNER: BRYAN MCINTYRE
VALKYRIE ENTERPRISES, LLC
402 JAYNE ROAD
FENTON, MI 48430
PHONE: (810) 397-2804
EMAIL: BRYAN@IRSTCHOICEHEAT.COM

ARCHITECT: DAVID J. MCDADE
ROARK GALT ARCHITECTURE
10166 N. LINDEN ROAD
CLIO, MI 48420
PHONE: (231) 557-3304
EMAIL: RGARCHS@GMAIL.COM

ENGINEER: RUDY QUADERER, PE
GRIGGS QUADERER, INC.
8308 OFFICE PARK DRIVE
GRAND BLANC, MI 48439
PHONE: (810) 695-0154
EMAIL: RQUADERER@GQINCORP.COM

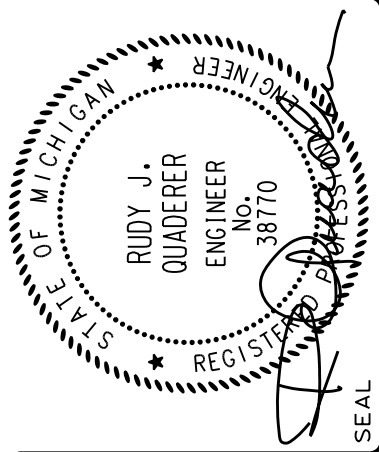
SESC CONSTRUCTION AND MAINTENANCE SCHEDULE									
Project Name: First Choice Heating & Cooling - New Warehouse Addition									
Anticipated Start Date: March 2022									
Anticipated End Date: September 2022									
Construction Schedule									
Construction Sequence	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Temporary SESC Measures									
Excavation									
Strip and Stockpile									
Gravel Grading									
Underground Utilities									
Storm Sewer									
Building Construction									
Permanent SESC Measures									
Final Grading									
Landscaping									
Maintenance Schedule									
Maintenance Sequence	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Street Sweeping									
Leaf Removal									
Maintain Buffer Strips									
Leaf Shredding									
Seeding and Mowing									
Landscaping									
Leaf Shred									
Remove Temporary Measures									
Seeding and Planting Schedule									
Temporary: (refer to Tables A & B in MDOT "Guidelines for Vegetative Erosion Control" included with this packet)									
Area on Plan	Mix #	Common Name	Natural Drainage Class	Substrate	Rate	Notes	Rate	Notes	Rate
Area on Plan	1	Grass Seed	Grass	Grass	Grass	Grass	Grass	Grass	Grass
Area on Plan	2	Grass Seed	Grass	Grass	Grass	Grass	Grass	Grass	Grass
Permanent: (refer to Tables A & B in MDOT "Guidelines for Vegetative Erosion Control" included with this packet)									
Area on Plan	Mix #	Common Name	Natural Drainage Class	Substrate	Rate	Notes	Rate	Notes	Rate
Area on Plan	1	Grass Seed	Grass	Grass	Grass	Grass	Grass	Grass	Grass
Area on Plan	2	Grass Seed	Grass	Grass	Grass	Grass	Grass	Grass	Grass
Trees and Shrubs: (refer to Table F in MDOT "Guidelines for Vegetative Erosion Control" included with this packet)									
Area on Plan	Quantity	Common Name	Scientific Name	Drainage Class	Notes	Area on Plan	Quantity	Common Name	Scientific Name
Area on Plan						Area on Plan			



LOCATION MAP
NOT TO SCALE

STANDARD LEGEND		
DESCRIPTION	PROPOSED	EXISTING
BUILDING		
STORM SEWER		
SANITARY SEWER		
WATER		
GAS LINE		
ELECTRIC LINE		
TELEPHONE LINE		
MANHOLE		
CATCH BASIN		
FIRE HYDRANT		
GATE VALVE & WELL		
POWER POLE		
LIGHT POLE		
CURB & GUTTER		
FENCE		
DECIDUOUS TREE		
EVERGREEN TREE		
EASEMENT		
WETLAND BOUNDARY		
SIGN		
ASPHALT SURFACE		
CONCRETE SURFACE		
SOIL BORING		
SPOT ELEVATION		
CONTOUR LINE		

AGENCY CONTACT INFORMATION					
AGENCY	SUBMITTAL DATE	STATUS	AGENCY	SUBMITTAL DATE	STATUS
MIKE DEEM ZONING ADMINISTRATOR FENTON TOWNSHIP 12060 MANTAWAKA DR. FENTON, MI 48430 PH: 810-629-1537	07-07-2022	UNDER REVIEW	SOIL EROSION CONTROL GCDC-WWS DION BURROUGHS G-4610 BEECHER RD. FLINT, MI 48532 PH: 810-732-7870	09-23-2022	UNDER REVIEW
PUBLIC UTILITIES GCDC-WWS LYNETTE MEINZ, PE G-4610 BEECHER RD. FLINT, MI 48532 PH: 810-732-7870	09-23-2022	UNDER REVIEW	IPP GCDC-WWS THAD DOMICK G-4610 BEECHER RD. FLINT, MI 48532 PH: 810-732-7870	09-23-2022	UNDER REVIEW
STORM GCDC-SWM TOM JONES G-4608 BEECHER RD. FLINT, MI 48532 PH: 810-732-1590	-	-	DRIVE APPROACH GC ROAD COMMISSION BILL D'LORENZO - PERMITS 211 W. OAKLEY ST. FLINT, MI 48503 PH: 810-767-4920	-	-

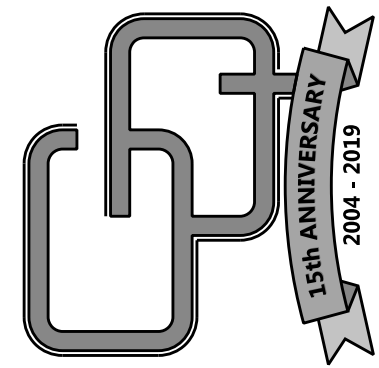


10-11-22	STORM WATER DISCHARGE (EGLE)
09-23-22	ISSUED TO GCDC-WWS
08-16-22	ISSUED TO FENTON TWP.
07-07-22	ISSUED TO FENTON TOWNSHIP
06-24-22	OWNER REVIEW
02-18-22	PRELIMINARY OWNER REVIEW
NO.	DATE
REVISION OR ISSUE	

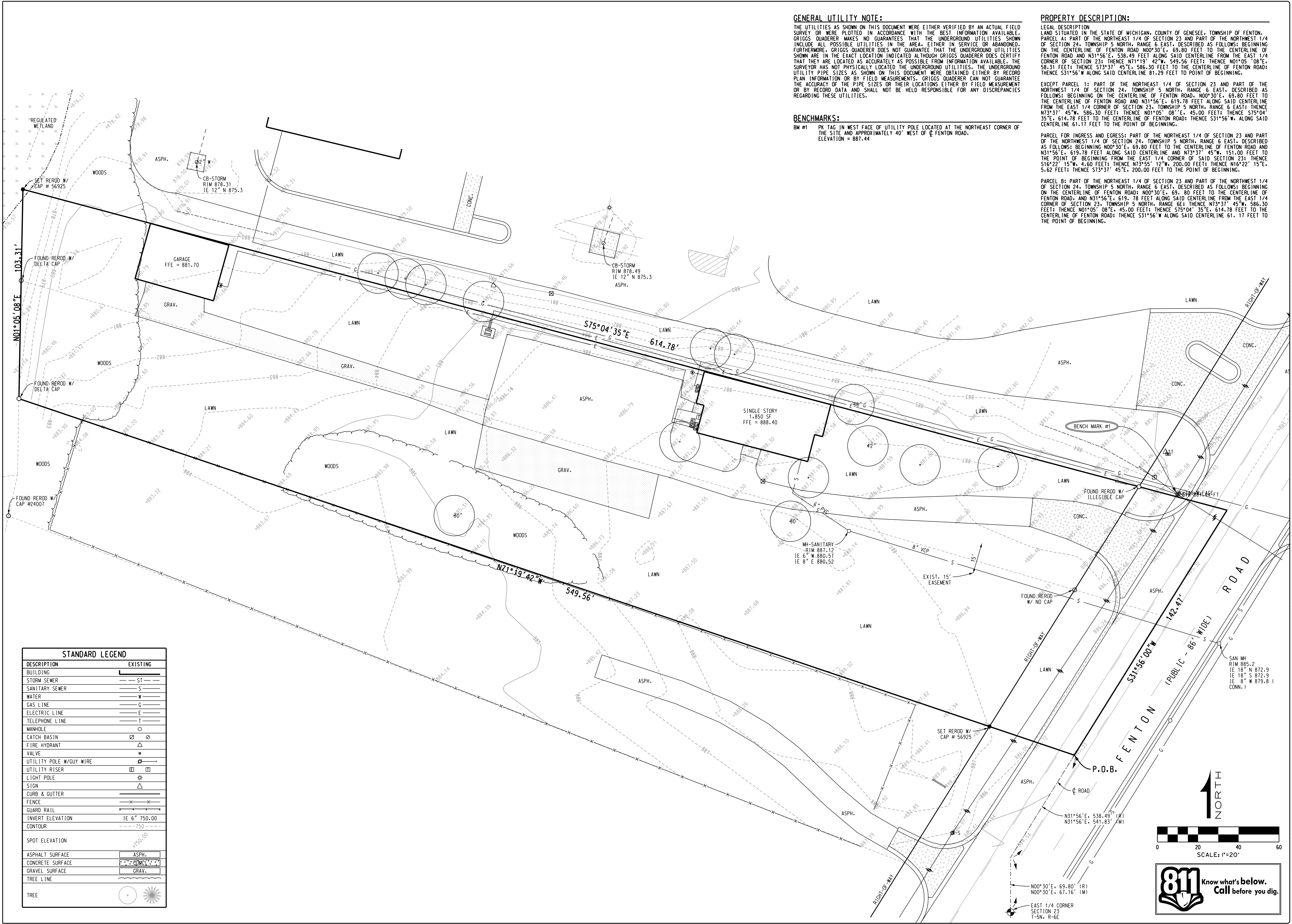
DRAWN	DESIGNED	CHECKED	FIELD CREW
14214 FENTON RD FENTON TWP GENESEE CO MICHIGAN			

FIRST CHOICE
HEATING & COOLING

Griggs Quaderer, Inc.
8308 OFFICE PARK DRIVE
GRAND BLANC, MI 48439
PH: (810) 695-0154
FX: (810) 695-0158
CIVIL ENGINEERING · LAND SURVEYING
SITE PLANNING



PHASE: SURVY
JOB NO.: 220105
C000



GENERAL UTILITY NOTE:

THE UTILITIES AS SHOWN ON THIS DOCUMENT WERE EITHER VERIFIED BY AN ACTUAL FIELD SURVEY OR WERE PLOTTED IN ACCORDANCE WITH THE BEST INFORMATION AVAILABLE. GRIGGS QUADERER MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN INCLUDE ALL POSSIBLE UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHERMORE, GRIGGS QUADERER DOES NOT GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH GRIGGS QUADERER DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THE UNDERGROUND UTILITY PIPE SIZES AS SHOWN ON THIS DOCUMENT WERE OBTAINED EITHER BY RECORD PLAN INFORMATION OR BY FIELD MEASUREMENTS. GRIGGS QUADERER CAN NOT GUARANTEE THE ACCURACY OF THE PIPE SIZES OR THEIR LOCATIONS EITHER BY FIELD MEASUREMENT OR BY RECORD DATA AND SHALL NOT BE HELD RESPONSIBLE FOR ANY DISCREPANCIES REGARDING THESE UTILITIES.

BENCHMARKS:

BM #1 PK TAG IN WEST FACE OF UTILITY POLE LOCATED AT THE NORTHEAST CORNER OF THE SITE AND APPROXIMATELY 40' WEST OF FENTON ROAD. ELEVATION = 887.44

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STANDARD LEGEND	
DESCRIPTION	EXISTING
BUILDING	— ST —
STORM SEWER	— S —
SANITARY SEWER	— S —
WATER	— W —
GAS LINE	— G —
ELECTRIC LINE	— E —
TELEPHONE LINE	— T —
MANHOLE	○
CATCH BASIN	⊠
FIRE HYDRANT	⊠
VALVE	•
UTILITY POLE W/GUY WIRE	⊠
UTILITY RISER	⊠
LIGHT POLE	⊠
SIGN	⊠
CURB & GUTTER	— X —
FENCE	— X —
GUARD RAIL	— X —
INVERT ELEVATION	IE 6" 750.00
CONTOUR	— 750 —
SPOT ELEVATION	+750.00
ASPHALT SURFACE	ASPH.
CONCRETE SURFACE	CONC.
GRAVEL SURFACE	GRAV.
TREE LINE	— X —
TREE	⊙

10-11-22 STORM WATER DISCHARGE (EGLE)

09-23-22 ISSUED TO GQCC-WMS

08-16-22 ISSUED TO FENTON TWP.

07-07-22 ISSUED TO FENTON TOWNSHIP

06-24-22 OWNER REVIEW

02-18-22 PRELIMINARY OWNER REVIEW

NO.

DATE

SUBJECT

REVISION OR ISSUE

DRAWN

DESIGNED

CHECKED

FIELD CREW

1424 FENTON RD

FENTON TWP

GENESEE CO

MICHIGAN

DATE: 06/21/2022

TIME: 2:10:00 PM

TOPOGRAPHIC & BOUNDARY SURVEY

Griggs Quaderer, Inc.

8308 OFFICE PARK DRIVE

GRAND BLANC, MI 48409

WWW.GQINCORP.COM

PH: (810) 695-0154

FX: (810) 695-0158

PHASE: SURVY

JOB NO.: 220105

811

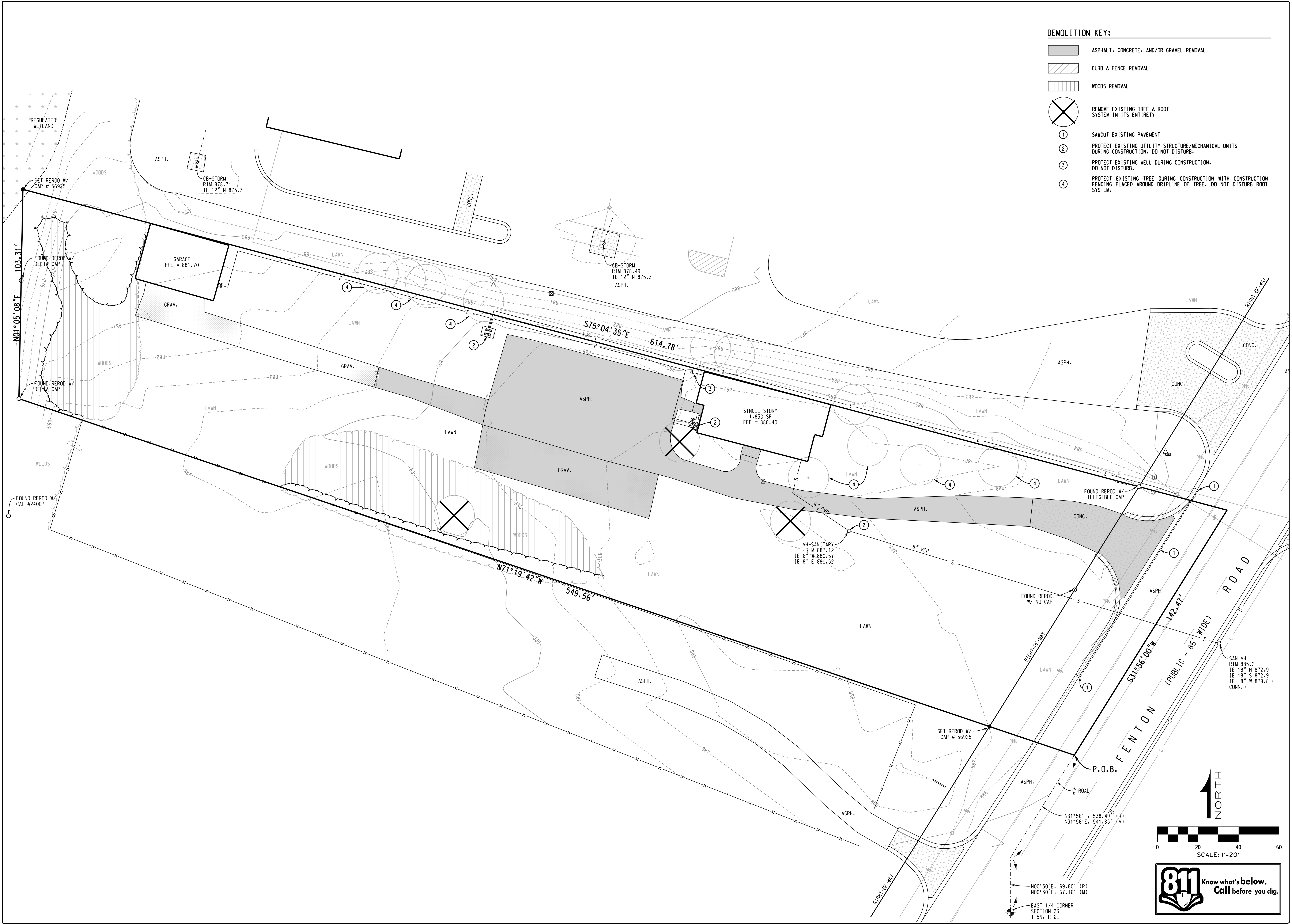
Know what's below.

Call before you dig.

15th ANNIVERSARY

2004 - 2019

C100



10-11-22

STORM WATER DISCHARGE (EGLE)

09-23-22

ISSUED TO GOC-WWS

08-16-22

ISSUED TO FENTON TWP.

07-07-22

ISSUED TO FENTON TOWNSHIP

06-24-22

OWNER REVIEW

02-18-22

PRELIMINARY OWNER REVIEW

NO.

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FIELD CREW

14214 FENTON RD

FENTON TWP

GENESEE CO

MICHIGAN

GRIGGS QUADERER, INC.

8308 OFFICE PARK DRIVE

GRAND BLANC, MI 48439

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PH: (810) 695-0154

FX: (810) 695-0158

CIVIL ENGINEERING - LAND SURVEYING

SITE PLANNING

PHASE:

220105

SURVY

811

Know what's below.

Call before you dig.

C101

1

NORTH

0

20

40

60

SCALE: 1"=20'

10-11-22

STORM WATER DISCHARGE (EGLE)

09-23-22

ISSUED TO GOC-WWS

08-16-22

ISSUED TO FENTON TWP.

07-07-22

ISSUED TO FENTON TOWNSHIP

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OWNER REVIEW

02-18-22

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SEAL

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FIELD CREW

14214 FENTON RD

FENTON TWP

GENESEE CO

MICHIGAN

GRIGGS QUADERER, Inc.

8308 OFFICE PARK DRIVE

GRAND BLANC, MI 48439

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PH: (810) 695-0154

FX: (810) 695-0158

CIVIL ENGINEERING - LAND SURVEYING

SITE PLANNING

PHASE:

220105

SURVY

811

Know what's below.

Call before you dig.

C101

PAVEMENT MARKING & SIGNAGE NOTES:

1. PARKING STALL WIDTH DIMENSIONS ARE TO CENTERLINE OF STRIPING.
2. ALL PAVEMENT MARKINGS SHALL BE 4" WIDE WHITE PAINT STRIPING UNLESS OTHERWISE INDICATED. ALL BARRIER FREE STRIPING SHALL BE COLORED BLUE AND IN ACCORDANCE WITH THE LATEST ADA STANDARDS FOR ACCESSIBLE DESIGN.
3. CONTRACTOR SHALL NOT APPLY TRAFFIC MARKING PAINT ON NEW ASPHALT UNTIL PAVEMENT HAS CURED A MINIMUM OF SEVEN (7) DAYS.
4. PAINT SHALL BE APPLIED WITH MECHANICAL EQUIPMENT TO PRODUCE UNIFORM STRAIGHT EDGES. APPLY IN TWO COATS AT MANUFACTURER'S RECOMMENDED RATES TO PROVIDE MINIMUM 10.0 TO 15.0 MILS WET THICKNESS.
5. ALL TRAFFIC CONTROL SIGNS SHALL CONFORM WITH ALL REQUIREMENTS AS STIPULATED IN THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
6. ☐ NUMBER OF PARKING SPACES (FOR INFORMATION ONLY)

MARKING / SIGNAGE LEGEND:

- ① STOP SIGN (R1-1)
② 4" SINGLE SOLID LINE, YELLOW
③ 24" WIDE STOP LINE, WHITE
④A ACCESSIBLE SIGN (R7-8)
- NO PARKING / NO DRIVING AREAS
4" WIDE WHITE PAINT STRIPING
2' ON CENTER @ 45°. REFER TO
PAVEMENT MARKING NOTE #2 FOR
BARRIER FREE PARKING

PARKING DATA:

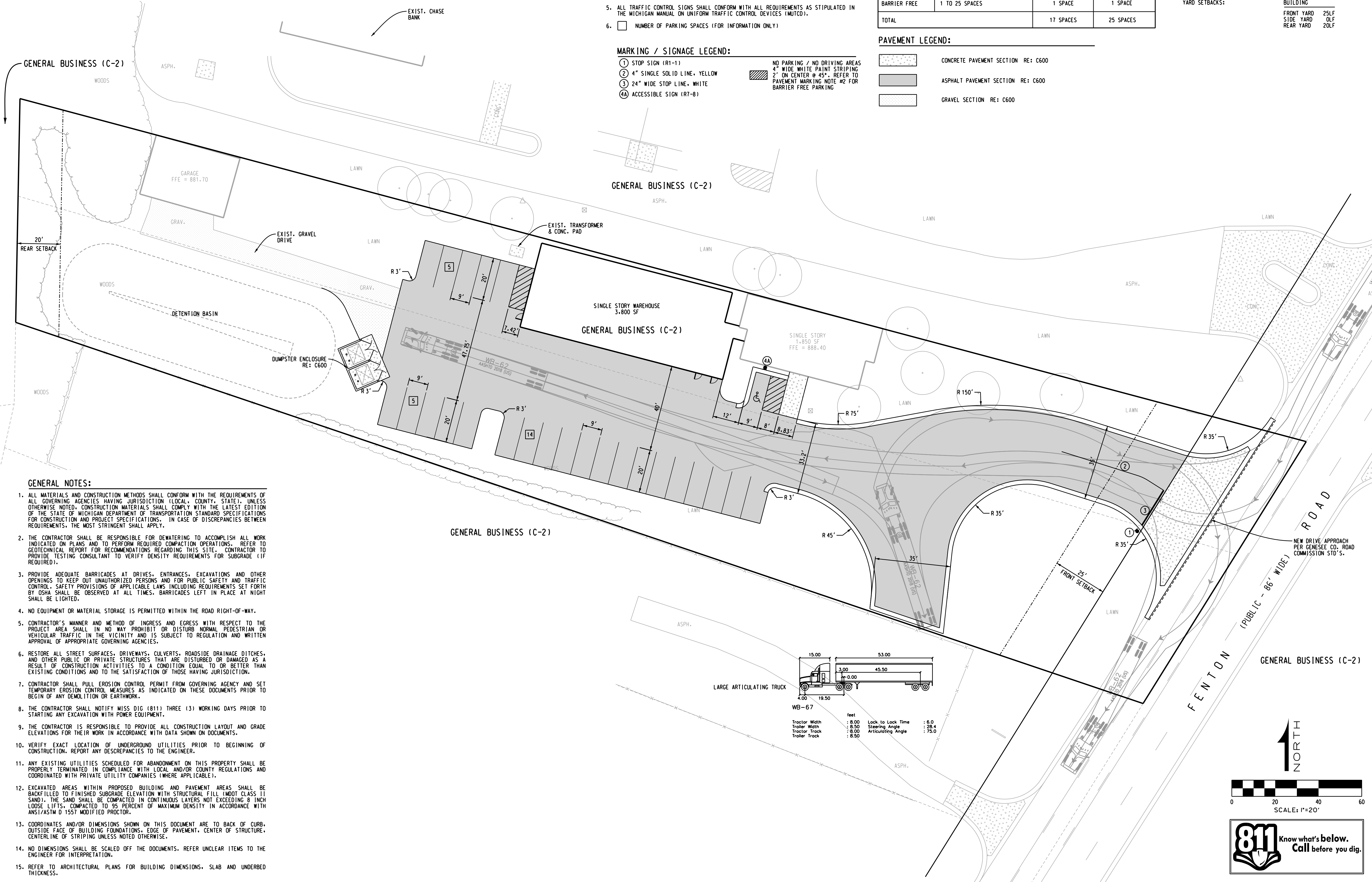
USE	REQUIREMENTS	PARKING REQUIRED	PARKING PROVIDED
OFFICE	1 SPACE / 200 U.FLR. AREA 1,000 / 200 = 5	5 SPACES	25 SPACES
WAREHOUSE	1 SPACE / VEH. + 1 / 2,000 SF = 10 VEH. + 3,800/2000 = 12	12 SPACES	
BARRIER FREE	1 TO 25 SPACES	1 SPACE	1 SPACE
TOTAL		17 SPACES	25 SPACES

PAVEMENT LEGEND:

	CONCRETE PAVEMENT SECTION RE: C600
	ASPHALT PAVEMENT SECTION RE: C600
	GRAVEL SECTION RE: C600

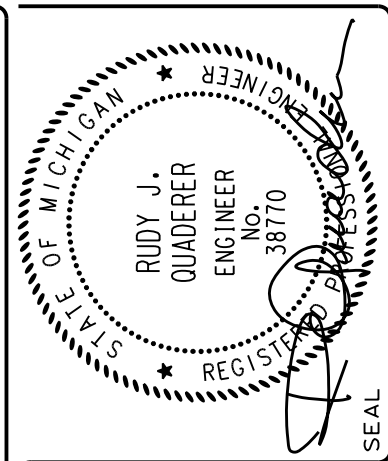
LAND USE INFORMATION:

CURRENT ZONING:	GENERAL BUSINESS (C-2)
PROPOSED ZONING:	GENERAL BUSINESS (C-2)
CURRENT USE:	GLASS CLEANING
PROPOSED USE:	HEATING & COOLING
TOTAL SITE AREA:	68,938 SF, 1.58 AC.
TOTAL BUILDING AREA:	5,650 SF
LOT COVERAGE BY BLDG:	8.2%
YARD SETBACKS:	BUILDING
	FRONT YARD 25LF
	SIDE YARD 0LF
	REAR YARD 20LF



GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM WITH THE REQUIREMENTS OF ALL GOVERNING AGENCIES HAVING JURISDICTION (LOCAL, COUNTY, STATE), UNLESS OTHERWISE NOTED. CONSTRUCTION MATERIALS SHALL COMPLY WITH THE LATEST EDITION OF THE STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND PROJECT SPECIFICATIONS. IN CASE OF DISCREPANCIES BETWEEN REQUIREMENTS, THE MOST STRINGENT SHALL APPLY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING TO ACCOMPLISH ALL WORK INDICATED ON PLANS AND TO PERFORM REQUIRED COMPACTION OPERATIONS. REFER TO GEOTECHNICAL REPORT FOR RECOMMENDATIONS REGARDING THIS SITE. CONTRACTOR TO PROVIDE TESTING CONSULTANT TO VERIFY DENSITY REQUIREMENTS FOR SUBGRADE (IF REQUIRED).
3. PROVIDE ADEQUATE BARRICADES AT DRIVES, ENTRANCES, EXCAVATIONS AND OTHER OPENINGS TO KEEP OUT UNAUTHORIZED PERSONS AND FOR PUBLIC SAFETY AND TRAFFIC CONTROL. SAFETY PROVISIONS OF APPLICABLE LAWS INCLUDING REQUIREMENTS SET FORTH BY OSHA SHALL BE OBSERVED AT ALL TIMES. BARRICADES LEFT IN PLACE AT NIGHT SHALL BE LIGHTED.
4. NO EQUIPMENT OR MATERIAL STORAGE IS PERMITTED WITHIN THE ROAD RIGHT-OF-WAY.
5. CONTRACTOR'S MANNER AND METHOD OF INGRESS AND EGRESS WITH RESPECT TO THE PROJECT AREA SHALL IN NO WAY PROHIBIT OR DISTURB NORMAL PEDESTRIAN OR VEHICULAR TRAFFIC IN THE VICINITY AND IS SUBJECT TO REGULATION AND WRITTEN APPROVAL OF APPROPRIATE GOVERNING AGENCIES.
6. RESTORE ALL STREET SURFACES, DRIVEWAYS, CULVERTS, ROADSIDE DRAINAGE DITCHES, AND OTHER PUBLIC OR PRIVATE STRUCTURES THAT ARE DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITIONS AND TO THE SATISFACTION OF THOSE HAVING JURISDICTION.
7. CONTRACTOR SHALL PULL EROSION CONTROL PERMIT FROM GOVERNING AGENCY AND SET TEMPORARY EROSION CONTROL MEASURES AS INDICATED ON THESE DOCUMENTS PRIOR TO BEGIN OF ANY DEMOLITION OR EARTHWORK.
8. THE CONTRACTOR SHALL NOTIFY MISS DIG (811) THREE (3) WORKING DAYS PRIOR TO STARTING ANY EXCAVATION WITH POWER EQUIPMENT.
9. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL CONSTRUCTION LAYOUT AND GRADE ELEVATIONS FOR THEIR WORK IN ACCORDANCE WITH DATA SHOWN ON DOCUMENTS.
10. VERIFY EXACT LOCATION OF UNDERGROUND UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.
11. ANY EXISTING UTILITIES SCHEDULED FOR ABANDONMENT ON THIS PROPERTY SHALL BE PROPERLY TERMINATED IN COMPLIANCE WITH LOCAL AND/OR COUNTY REGULATIONS AND COORDINATED WITH PRIVATE UTILITY COMPANIES (WHERE APPLICABLE).
12. EXCAVATED AREAS WITHIN PROPOSED BUILDING AND PAVEMENT AREAS SHALL BE BACKFILLED TO FINISHED SUBGRADE ELEVATION WITH STRUCTURAL FILL (MOOT CLASS II SAND). THE SAND SHALL BE COMPACTED IN CONTINUOUS LAYERS NOT EXCEEDING 8 INCH LOOSE LIFTS, COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ANSI/ASTM D 1557 MODIFIED PROCTOR.
13. COORDINATES AND/OR DIMENSIONS SHOWN ON THIS DOCUMENT ARE TO BACK OF CURB, OUTSIDE FACE OF BUILDING FOUNDATIONS, EDGE OF PAVEMENT, CENTER OF STRUCTURE, CENTERLINE OF STRIPING UNLESS NOTED OTHERWISE.
14. NO DIMENSIONS SHALL BE SCALED OFF THE DOCUMENTS. REFER UNCLEAR ITEMS TO THE ENGINEER FOR INTERPRETATION.
15. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS, SLAB AND UNDERBED THICKNESS.



	10-11-22	STORM WATER DISCHARGE (EGLE)
	09-23-22	ISSUED TO GOC-WWS
	08-16-22	ISSUED TO FENTON TWP.
	07-07-22	ISSUED TO FENTON TOWNSHIP
	06-24-22	OWNER REVIEW
	02-18-22	PRELIMINARY OWNER REVIEW
	NO.	DATE
	SUBJECT	
	REVISION OR ISSUE	

DRAWN	DESIGNED	CHECKED	FIELD CREW
1424 FENTON RD	FENTON TWP	GENESEE CO	MICHIGAN

1424 FENTON RD
FENTON TWP
GENESEE CO
MICHIGAN

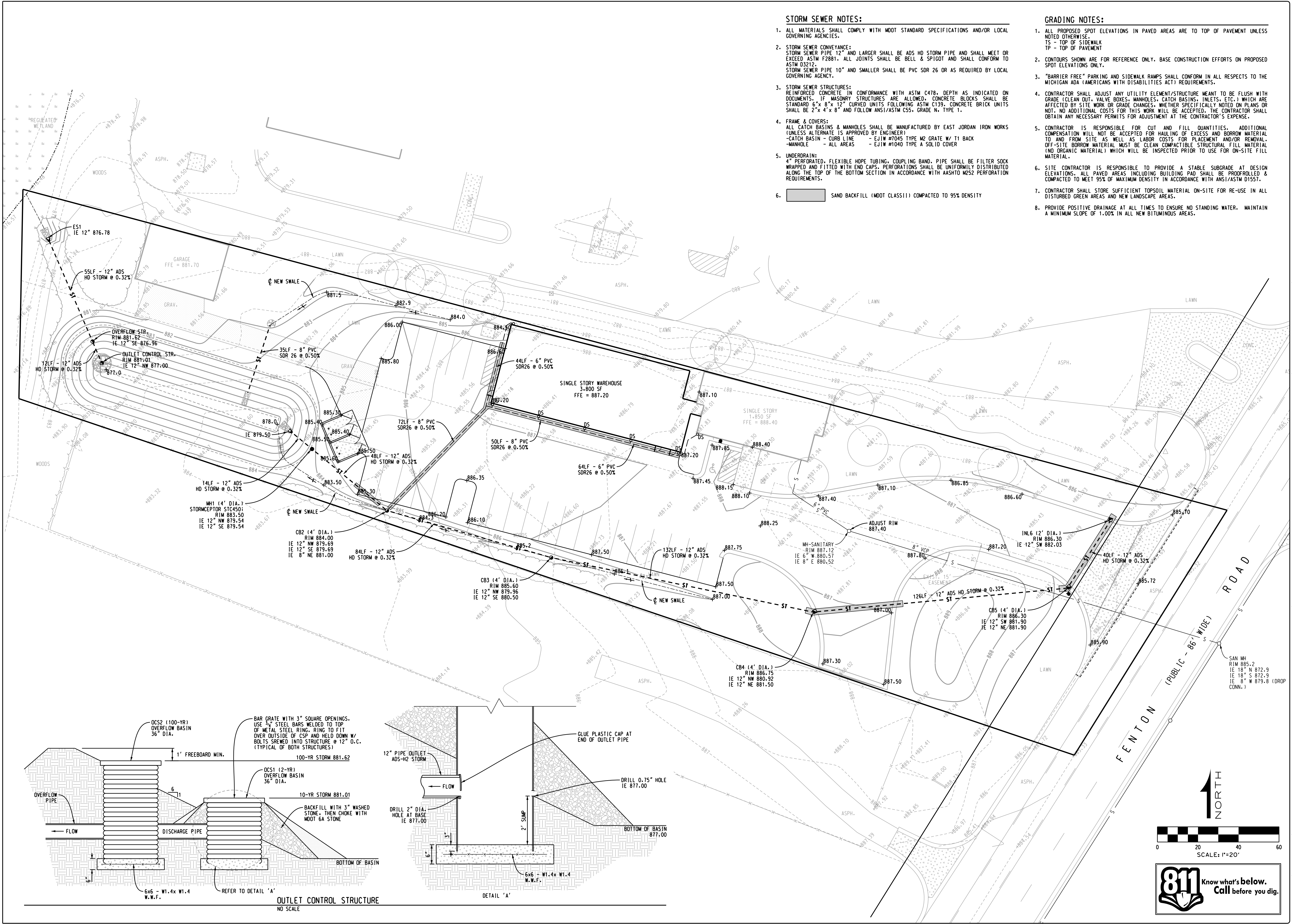
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PHASE: SURVY
JOB NO.: 220105
C200

CIVIL ENGINEERING - LAND SURVEYING
SITE PLANNING

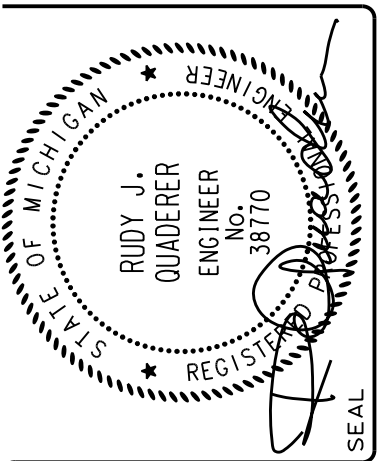


STORM SEWER NOTES:

1. ALL MATERIALS SHALL COMPLY WITH MDOT STANDARD SPECIFICATIONS AND/OR LOCAL GOVERNING AGENCIES.
2. STORM SEWER CONVEYANCE:
STORM SEWER PIPE 12" AND LARGER SHALL BE ADS HD STORM PIPE AND SHALL MEET OR EXCEED ASTM F2881. ALL JOINTS SHALL BE BELL & SPIGOT AND SHALL CONFORM TO ASTM D3212.
STORM SEWER PIPE 10" AND SMALLER SHALL BE PVC SDR 26 OR AS REQUIRED BY LOCAL GOVERNING AGENCY.
3. STORM SEWER STRUCTURES:
REINFORCED CONCRETE IN CONFORMANCE WITH ASTM C478. DEPTH AS INDICATED ON DOCUMENTS. IF MASONRY STRUCTURES ARE ALLOWED, CONCRETE BLOCKS SHALL BE STANDARD 6" x 8" x 12" CURVED UNITS FOLLOWING ASTM C139. CONCRETE BRICK UNITS SHALL BE 2" x 4" x 8" AND FOLLOW ANSI/ASTM C55, GRADE N, TYPE 1.
4. FRAME & COVERS:
ALL CATCH BASINS & MANHOLES SHALL BE MANUFACTURED BY EAST JORDAN IRON WORKS (UNLESS ALTERNATE IS APPROVED BY ENGINEER)
-CATCH BASIN - CURB LINE - EJIW #7045 TYPE M2 GRATE W/ T1 BACK
-MANHOLE - ALL AREAS - EJIW #1040 TYPE A SOLID COVER
5. UNDERDRAIN:
4" PERFORATED, FLEXIBLE HDPE TUBING, COUPLING BAND. PIPE SHALL BE FILTER SOCK WRAPPED AND FITTED WITH END CAPS. PERFORATIONS SHALL BE UNIFORMLY DISTRIBUTED ALONG THE TOP OF THE BOTTOM SECTION IN ACCORDANCE WITH AASHTO M252 PERFORATION REQUIREMENTS.
6. SAND BACKFILL (MDOT CLASSII) COMPACTED TO 95% DENSITY

GRADING NOTES:

1. ALL PROPOSED SPOT ELEVATIONS IN PAVED AREAS ARE TO TOP OF PAVEMENT UNLESS NOTED OTHERWISE.
TS - TOP OF SIDEWALK
TP - TOP OF PAVEMENT
2. CONTOURS SHOWN ARE FOR REFERENCE ONLY. BASE CONSTRUCTION EFFORTS ON PROPOSED SPOT ELEVATIONS ONLY.
3. "BARRIER FREE" PARKING AND SIDEWALK RAMPS SHALL CONFORM IN ALL RESPECTS TO THE MICHIGAN ADA (AMERICANS WITH DISABILITIES ACT) REQUIREMENTS.
4. CONTRACTOR SHALL ADJUST ANY UTILITY ELEMENT/STRUCTURE MEANT TO BE FLUSH WITH GRADE (CLEAN OUT, VALVE BOXES, MANHOLES, CATCH BASINS, INLETS, ETC.) WHICH ARE AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT. NO ADDITIONAL COSTS FOR THIS WORK WILL BE ACCEPTED. THE CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FOR ADJUSTMENT AT THE CONTRACTOR'S EXPENSE.
5. CONTRACTOR IS RESPONSIBLE FOR CUT AND FILL QUANTITIES. ADDITIONAL COMPENSATION WILL NOT BE ACCEPTED FOR HAULING OF EXCESS AND BORROW MATERIAL TO AND FROM SITE AS WELL AS LABOR COSTS FOR PLACEMENT AND/OR REMOVAL. OFF-SITE BORROW MATERIAL MUST BE CLEAN COMPACTIBLE STRUCTURAL FILL MATERIAL (NO ORGANIC MATERIAL) WHICH WILL BE INSPECTED PRIOR TO USE FOR ON-SITE FILL MATERIAL.
6. SITE CONTRACTOR IS RESPONSIBLE TO PROVIDE A STABLE SUBGRADE AT DESIGN ELEVATIONS. ALL PAVED AREAS INCLUDING BUILDING PAD SHALL BE PRODDROLLED & COMPACTED TO MEET 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ANSI/ASTM D1557.
7. CONTRACTOR SHALL STORE SUFFICIENT TOPSOIL MATERIAL ON-SITE FOR RE-USE IN ALL DISTURBED GREEN AREAS AND NEW LANDSCAPE AREAS.
8. PROVIDE POSITIVE DRAINAGE AT ALL TIMES TO ENSURE NO STANDING WATER. MAINTAIN A MINIMUM SLOPE OF 1.00% IN ALL NEW BITUMINOUS AREAS.



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DRAWN	DESIGNED	CHECKED	FIELD CREW

14214 FENTON RD
FENTON TWP
GENESEE CO
MICHIGAN

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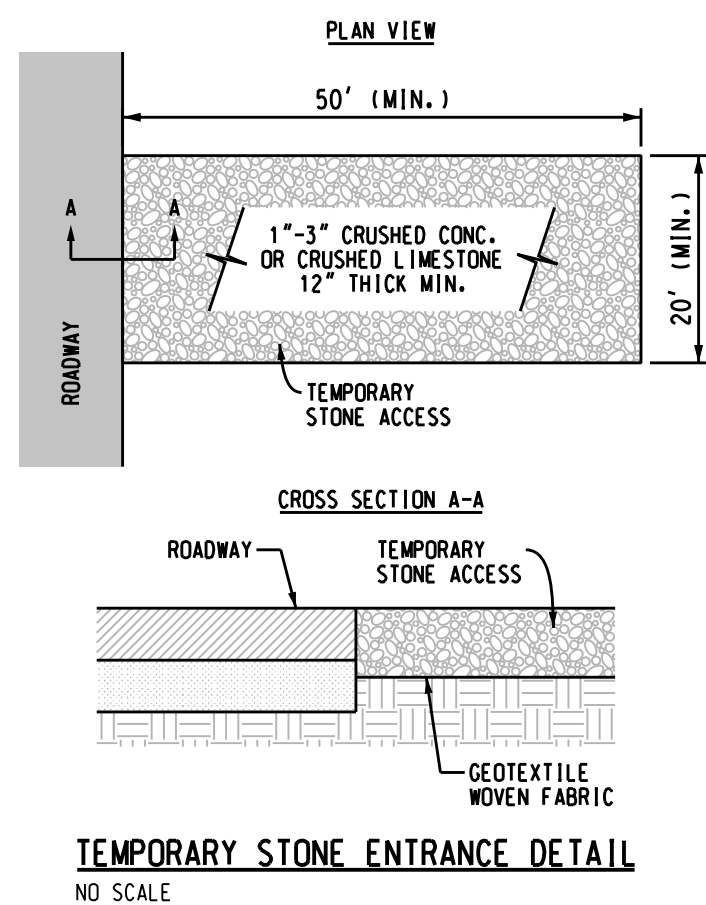
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JOB NO.: 220105
PHASE: SURVY
C300

SOILS DATA:

BrA	BOYER LOAMY SAND, 0 TO 2% SLOPES
BrB	BOYER LOAMY SAND, 2 TO 6% SLOPES
BrC	BOYER LOAMY SAND, 6 TO 12% SLOPES
MoC	WAWASEE LOAM 6 TO 12% SLOPES



SOIL EROSION CONTROL MEASURES:

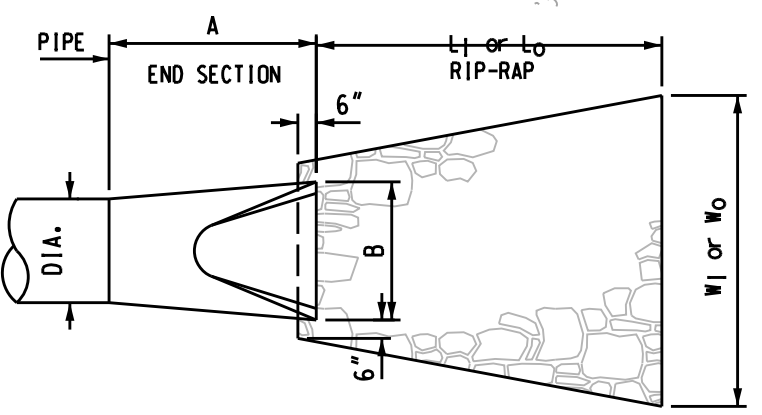
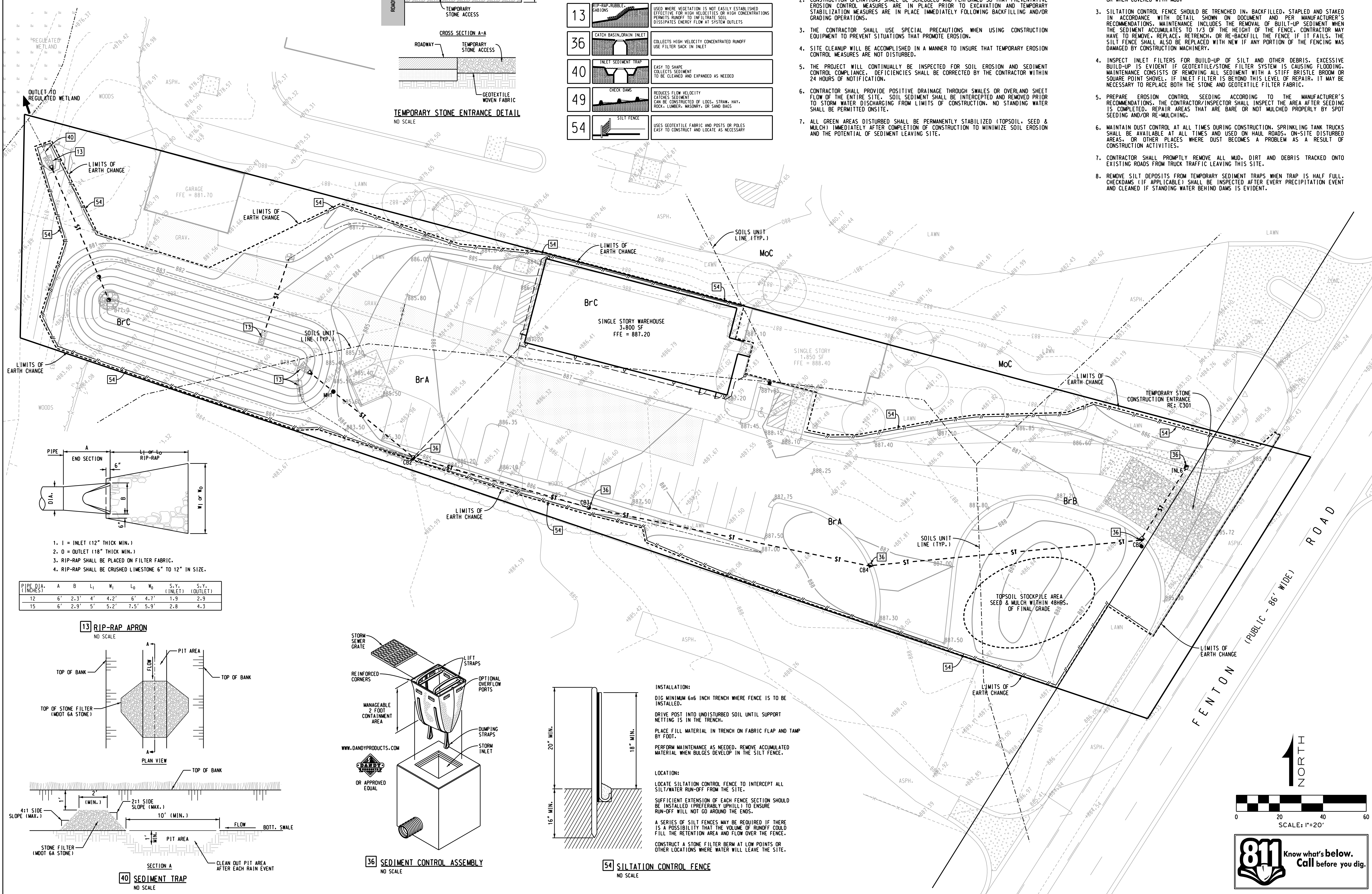
2	SELECTIVE GRADING & SHAPING	WATER CAN BE DIVERTED TO MINIMIZE EROSION FLATTER SLOPES EASE EROSION PROBLEMS
6	SEEDING WITH MULCH AND/OR MATTING	FACILITATES ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR DRAINAGEWAYS WITH LOW VELOCITIES EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL SHOULD INCLUDE PREPARED TOPSOIL BED
13	RIP-RAP/ROCK BASINS	USED WHERE VEGETATION IS NOT EASILY ESTABLISHED EFFECTIVE FOR HIGH VELOCITIES OR HIGH CONCENTRATIONS PERMITS RUNOFF TO INFILTRATE SOIL DISSIPATES ENERGY FLOW AT SYSTEM OUTLETS
36	CATCH BASIN/DRAIN INLET	COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF USE FILTER SACK IN INLET
40	INLET SEDIMENT TRAP	EASY TO SHAPE CATCHES SEDIMENT TO BE CLEANED AND EXPANDED AS NEEDED
49	CHECK DAMS	REDUCES FLOW VELOCITY CATCHES SEDIMENT CAN BE CONSTRUCTED OF LOGS, STRAW, HAY, ROCK, LUMBER, MASONRY, OR SAND BAGS
54	SILT FENCE	USES GEOTEXTILE FABRIC AND POSTS OR POLES EASY TO CONSTRUCT AND LOCATE AS NECESSARY

SOIL EROSION CONTROL NOTES:

- THE DEVELOPER IS NOT REQUIRED TO OBTAIN A NPDES STORM WATER DISCHARGE PERMIT THROUGH THE GENESSEE COUNTY DRAIN COMMISSIONER, DIVISION OF WATER AND WASTE SERVICES PRIOR TO ANY CONSTRUCTION ACTIVITIES.
- THE DEVELOPER SHALL SUBMIT A DETAILED EROSION CONTROL PLAN AND OBTAIN ACT 451 PERMIT INCLUDING PAYMENT OF FEES AND PROVIDING THE NECESSARY BONDS FROM THE GENESSEE COUNTY DRAIN COMMISSIONER, DIVISION OF WATER AND WASTE SERVICES, PRIOR TO ANY EARTH CHANGES.
- 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 BACKFILLING AND/OR GRADING OPERATIONS.
- THE CONTRACTOR SHALL USE SPECIAL PRECAUTIONS WHEN USING CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
- SITE CLEANUP WILL BE ACCOMPLISHED IN A MANNER TO INSURE THAT TEMPORARY EROSION CONTROL MEASURES ARE NOT DISTURBED.
- THE PROJECT WILL CONTINUALLY BE INSPECTED FOR SOIL EROSION AND SEDIMENT CONTROL COMPLIANCE. DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR WITHIN 24 HOURS OF NOTIFICATION.
- CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE THROUGH SWALES OR OVERLAND SHEET FLOW OF THE ENTIRE SITE. SOIL SEDIMENT SHALL BE INTERCEPTED AND REMOVED PRIOR TO STORM WATER DISCHARGING FROM LIMITS OF CONSTRUCTION. NO STANDING WATER SHALL BE PERMITTED ONSITE.
- ALL GREEN AREAS DISTURBED SHALL BE PERMANENTLY STABILIZED (TOPSOIL, SEED & MULCH) IMMEDIATELY AFTER COMPLETION OF CONSTRUCTION TO MINIMIZE SOIL EROSION AND THE POTENTIAL OF SEDIMENT LEAVING SITE.

SESC MAINTENANCE SCHEDULE NOTES:

- A CONTRACTOR/INSPECTOR SHALL INSPECT THE SOIL EROSION AND SEDIMENT CONTROL DEVICES ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF A PRECIPITATION EVENT WHICH RESULTS IN A STORM WATER DISCHARGE FROM THE SITE. A LOG OF INSPECTION REPORTS SHALL BE MAINTAINED AND ACCESSIBLE IN ACCORDANCE WITH NPDES REQUIREMENTS. IMPLEMENT THE FOLLOWING STEPS IF ANY DAMAGE HAS RESULTED FROM CONSTRUCTION OR PRECIPITATION.
- CONSTRUCTION ACCESS ROADS (CLEAN STONE EXITS) MUST BE MAINTAINED AS NECESSARY. ADD ADDITIONAL STONE WHEN ACCESS ROAD BECOMES INEFFECTIVE DUE TO LOSS OF STONE OR WHEN COVERED WITH MUD.
- SILTATION CONTROL FENCE SHOULD BE TRENCHED IN, BACKFILLED, STAPLED AND STAKED IN ACCORDANCE WITH DETAIL SHOWN ON DOCUMENT AND PER MANUFACTURER'S RECOMMENDATIONS. MAINTENANCE INCLUDES THE REMOVAL OF BUILT-UP SEDIMENT WHEN THE SEDIMENT ACCUMULATES TO 1/3 OF THE HEIGHT OF THE FENCE. CONTRACTOR MAY HAVE TO REMOVE, REPLACE, RETRENCH, OR RE-BACKFILL THE FENCE IF IT FAILS. THE SILT FENCE SHALL ALSO BE REPLACED WITH NEW IF ANY PORTION OF THE FENCING WAS DAMAGED BY CONSTRUCTION MACHINERY.
- INSPECT INLET FILTERS FOR BUILD-UP OF SILT AND OTHER DEBRIS. EXCESSIVE BUILD-UP IS EVIDENT IF GEOTEXTILE/STONE FILTER SYSTEM IS CAUSING FLOODING. MAINTENANCE CONSISTS OF REMOVING ALL SEDIMENT WITH A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL. IF INLET FILTER IS BEYOND THIS LEVEL OF REPAIR, IT MAY BE NECESSARY TO REPLACE BOTH THE STONE AND GEOTEXTILE FILTER FABRIC.
- PREPARE EROSION CONTROL SEEDING ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR/INSPECTOR SHALL INSPECT THE AREA AFTER SEEDING IS COMPLETED. REPAIR AREAS THAT ARE BARE OR NOT MULCHED PROPERLY BY SPOT SEEDING AND/OR RE-MULCHING.
- MAINTAIN DUST CONTROL AT ALL TIMES DURING CONSTRUCTION. SPRINKLING TANK TRUCKS SHALL BE AVAILABLE AT ALL TIMES AND USED ON HAUL ROADS, ON-SITE DISTURBED AREAS, OR OTHER PLACES WHERE DUST BECOMES A PROBLEM AS A RESULT OF CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL PROMPTLY REMOVE ALL MUD, DIRT AND DEBRIS TRACKED ONTO EXISTING ROADS FROM TRUCK TRAFFIC LEAVING THIS SITE.
- REMOVE SILT DEPOSITS FROM TEMPORARY SEDIMENT TRAPS WHEN TRAP IS HALF FULL. CHECKDAMS (IF APPLICABLE) SHALL BE INSPECTED AFTER EVERY PRECIPITATION EVENT AND CLEANED IF STANDING WATER BEHIND DAMS IS EVIDENT.

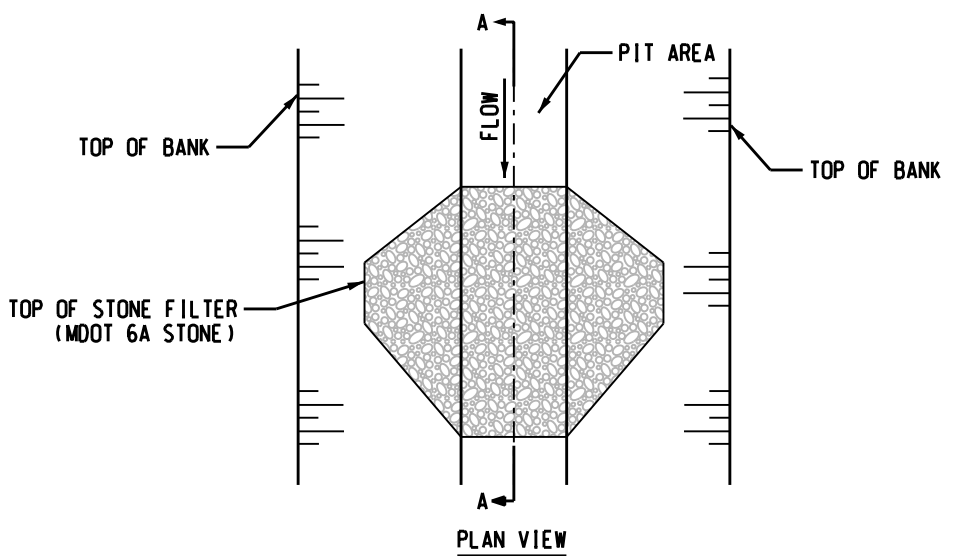


- 1 = INLET (12" THICK MIN.)
- 2 = OUTLET (18" THICK MIN.)
3. RIP-RAP SHALL BE PLACED ON FILTER FABRIC.
4. RIP-RAP SHALL BE CRUSHED LIMESTONE 6" TO 12" IN SIZE.

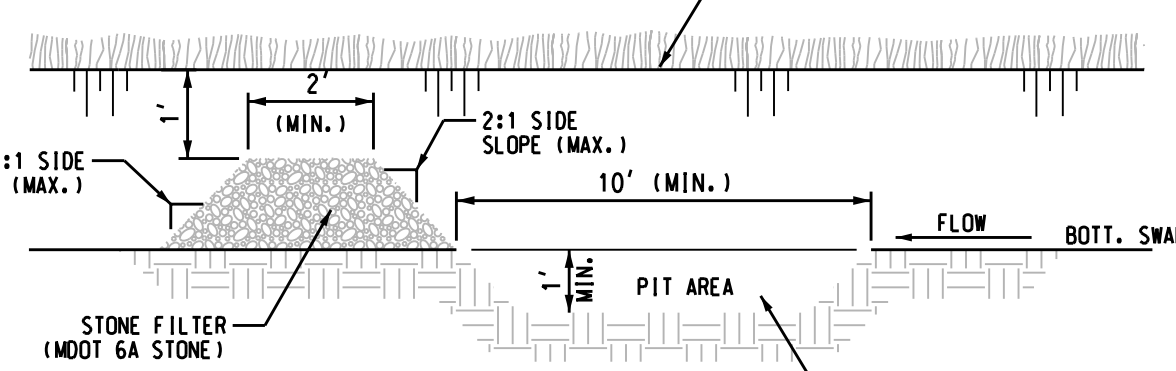
PIPE DIA. (INCHES)	A	B	L ₁	W ₁	L ₂	W ₂	S.Y. (INLET)	S.Y. (OUTLET)
12	6'	2.3'	4'	4.2'	6'	4.7'	1.9	2.9
15	6'	2.9'	5'	5.2'	7.5'	5.9'	2.8	4.3

13 RIP-RAP APRON

NO SCALE

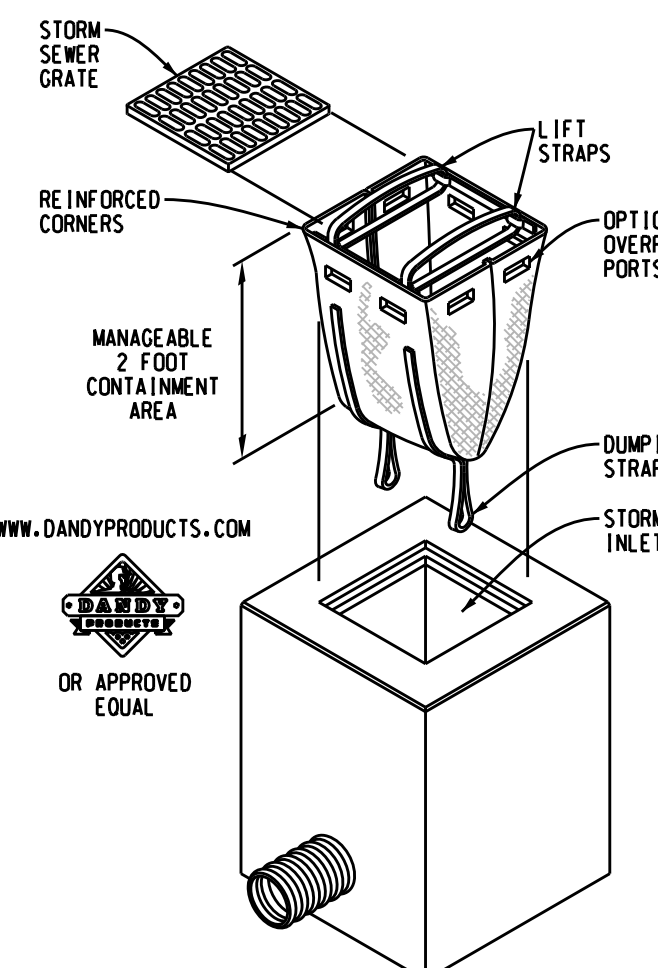


PLAN VIEW



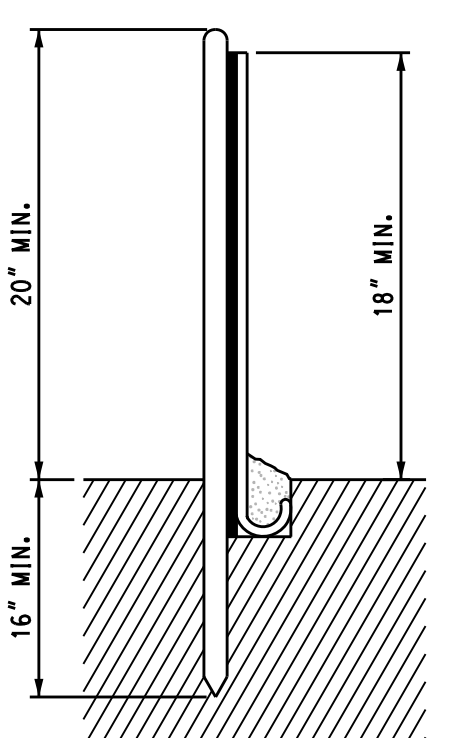
40 SEDIMENT TRAP

NO SCALE



36 SEDIMENT CONTROL ASSEMBLY

NO SCALE



54 SILTATION CONTROL FENCE

NO SCALE

INSTALLATION:
DIG MINIMUM 6x6 INCH TRENCH WHERE FENCE IS TO BE INSTALLED.
DRIVE POST INTO UNDISTURBED SOIL UNTIL SUPPORT NETTING IS IN THE TRENCH.
PLACE FILL MATERIAL IN TRENCH ON FABRIC FLAP AND TAMP BY FOOT.
PERFORM MAINTENANCE AS NEEDED. REMOVE ACCUMULATED MATERIAL WHEN BULGES DEVELOP IN THE SILT FENCE.

LOCATION:
LOCATE SILTATION CONTROL FENCE TO INTERCEPT ALL SILT/WATER RUN-OFF FROM THE SITE.
SUFFICIENT EXTENSION OF EACH FENCE SECTION SHOULD BE INSTALLED (PREFERABLY UPWILL) TO ENSURE RUN-OFF WILL NOT GO AROUND THE ENDS.
A SERIES OF SILT FENCES MAY BE REQUIRED IF THERE IS A POSSIBILITY THAT THE VOLUME OF RUNOFF COULD FILL THE RETENTION AREA AND FLOW OVER THE FENCE.
CONSTRUCT A STONE FILTER BERM AT LOW POINTS OR OTHER LOCATIONS WHERE WATER WILL LEAVE THE SITE.

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CIVIL ENGINEERING - LAND SURVEYING
SITE PLANNING

15th ANNIVERSARY
2004 - 2019

FIRST CHOICE
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14214 FENTON RD
FENTON TWP
GENESSEE CO
MICHIGAN

DRAWN
DESIGNED
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10-11-22 STORM WATER DISCHARGE (EGLE)
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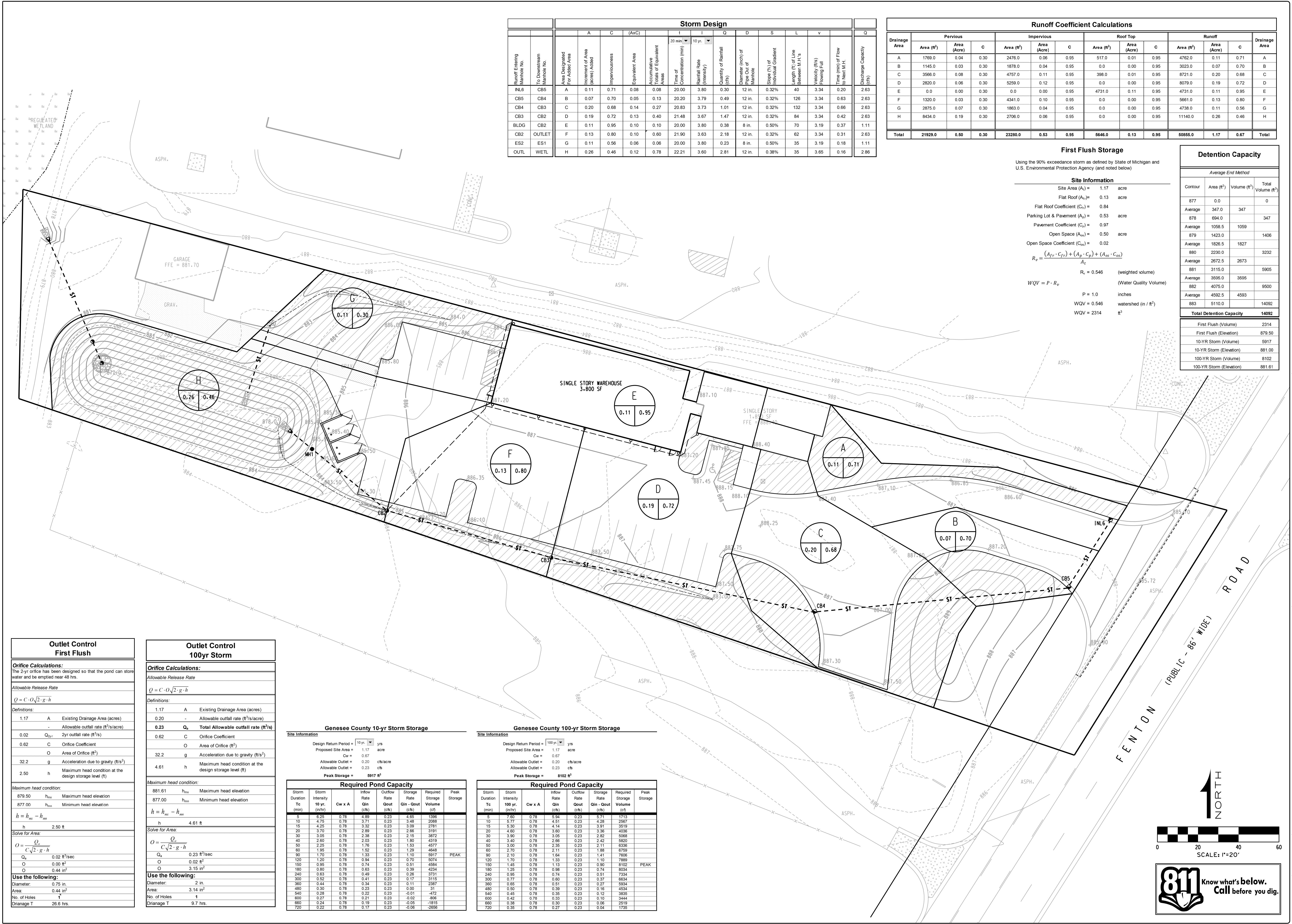
NO. DATE SUBJECT
REVISION OR ISSUE

JOB NO.: 220105 SURVY

PHASE: 1

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

SCALE: 1"=20'



Outlet Control First Flush		
Orifice Calculations: The 2-yr orifice has been designed so that the pond can store water and be emptied near 48 hrs.		
Allowable Release Rate		
$Q = C \cdot O \cdot \sqrt{2 \cdot g \cdot h}$		
Definitions:		
1.17	A	Existing Drainage Area (acres)
-		Allowable outfall rate (ft ³ /s/acre)
0.02	Q_{2yr}	2-yr outfall rate (ft ³ /s)
0.62	C	Orifice Coefficient
	O	Area of Orifice (ft ²)
32.2	g	Acceleration due to gravity (ft/s ²)
2.50	h	Maximum head condition at the design storage level (ft)
Maximum head condition:		
879.50	h_{max}	Maximum head elevation
877.00	h_{min}	Minimum head elevation
$h = h_{ac} - h_{min}$		
h		4.61 ft
Solve for Area:		
$O = \frac{Q_{2yr}}{C \cdot \sqrt{2 \cdot g \cdot h}}$		
Q_{2yr}		0.02 ft ³ /sec
O		0.00 ft ²
O		0.44 in ²
Use the following:		
Diameter:		0.75 in.
Area:		0.44 in ²
No. of Holes		1
Drainage T		26.6 hrs.

Outlet Control 100yr Storm		
Orifice Calculations: Allowable Release Rate		
$Q = C \cdot O \cdot \sqrt{2 \cdot g \cdot h}$		
Definitions:		
1.17	A	Existing Drainage Area (acres)
0.20		Allowable outfall rate (ft ³ /s/acre)
0.23	Q_{100}	Total Allowable outfall rate (ft ³ /s)
0.62	C	Orifice Coefficient
	O	Area of Orifice (ft ²)
32.2	g	Acceleration due to gravity (ft/s ²)
4.61	h	Maximum head condition at the design storage level (ft)
Maximum head condition:		
881.61	h_{max}	Maximum head elevation
877.00	h_{min}	Minimum head elevation
$h = h_{ac} - h_{min}$		
h		4.61 ft
Solve for Area:		
$O = \frac{Q_{100}}{C \cdot \sqrt{2 \cdot g \cdot h}}$		
Q_{100}		0.23 ft ³ /sec
O		0.02 ft ²
O		3.15 in ²
Use the following:		
Diameter:		2 in.
Area:		3.14 in ²
No. of Holes		1
Drainage T		9.7 hrs.

Genesee County 10-yr Storm Storage									
Site Information									
Design Return Period = 10 yr									
Proposed Site Area = 1.17 acre									
Cw = 0.67									
Allowable Outlet = 0.20 cfs/acre									
Allowable Outlet = 0.23 cfs									
Peak Storage = 5917 ft ³									
Storm Duration (min)	Storm Intensity 10 yr (in/hr)	Cw x A	Inflow Rate Qin (cfs)	Outflow Rate Qout (cfs)	Storage Rate Qin - Qout (cfs)	Required Storage Volume (cf)	Required Storage (cf)	Peak Storage	
5	6.25	0.78	4.89	0.23	4.65	1396			
10	4.75	0.78	3.71	0.23	3.48	2088			
15	4.25	0.78	3.32	0.23	3.09	2781			
20	3.70	0.78	2.89	0.23	2.66	3191			
30	3.05	0.78	2.38	0.23	2.15	3872			
40	2.60	0.78	2.03	0.23	1.80	4319			
50	2.25	0.78	1.76	0.23	1.53	4577			
60	1.95	0.78	1.52	0.23	1.29	4668			
90	1.70	0.78	1.33	0.23	1.10	5917		PEAK	
120	1.20	0.78	0.94	0.23	0.70	5074			
150	0.95	0.78	0.74	0.23	0.51	4584			
180	0.80	0.78	0.63	0.23	0.39	4234			
240	0.63	0.78	0.49	0.23	0.26	3731			
300	0.52	0.78	0.41	0.23	0.17	3115			
360	0.44	0.78	0.34	0.23	0.11	2387			
480	0.30	0.78	0.23	0.23	0.00	31			
540	0.28	0.78	0.22	0.23	-0.01	-472			
600	0.27	0.78	0.21	0.23	-0.02	-806			
660	0.24	0.78	0.19	0.23	-0.05	-1815			
720	0.22	0.78	0.17	0.23	-0.06	-2858			

Genesee County 100-yr Storm Storage									
Site Information									
Design Return Period = 100 yr									
Proposed Site Area = 1.17 acre									
Cw = 0.67									
Allowable Outlet = 0.20 cfs/acre									
Allowable Outlet = 0.23 cfs									
Peak Storage = 8102 ft ³									
Storm Duration (min)	Storm Intensity 100 yr (in/hr)	Cw x A	Inflow Rate Qin (cfs)	Outflow Rate Qout (cfs)	Storage Rate Qin - Qout (cfs)	Required Storage Volume (cf)	Required Storage (cf)	Peak Storage	
5	7.60	0.78	5.94	0.23	5.71	1713			
10	5.77	0.78	4.51	0.23	4.28	2567			
15	5.30	0.78	4.14	0.23	3.91	3519			
20	4.60	0.78	3.60	0.23	3.36	4036			
30	3.90	0.78	3.05	0.23	2.82	5068			
40	3.40	0.78	2.66	0.23	2.42	5850			
50	3.00	0.78	2.35	0.23	2.11	6336			
60	2.70	0.78	2.11	0.23	1.88	6759			
90	2.10	0.78	1.64	0.23	1.41	7606			
120	1.70	0.78	1.33	0.23	1.10	7889			
150	1.45	0.78	1.13	0.23	0.90	8102		PEAK	
180	1.25	0.78	0.98	0.23	0.74	8034			
240	0.95	0.78	0.74	0.23	0.51	7334			
300	0.77	0.78	0.60	0.23	0.37	6634			
360	0.65	0.78	0.51	0.23	0.27	5934			
480	0.50	0.78	0.39	0.23	0.16	4534			
540	0.45	0.78	0.35	0.23	0.12	3855			
600	0.42	0.78	0.33	0.23	0.10	3444			
660	0.38	0.78	0.30	0.23	0.06	2519			
720	0.35	0.78	0.27	0.23	0.04	1735			

Storm Design													
		A	C	(AxC)		I	I	Q	D	S	L	V	
Manhole No.	Downstream Manhole No.	Area Designated For Added Area	Increment of Area (acres) Added	Imperviousness	Equivalent Area	Accumulative Area of Equivalent Area	Time of Concentration (min)	Rainfall Rate (intensity)	Quantity of Rainfall (cfs)	Discharge (inch) of Pipe Out of Manhole	Slope (%) of Individual Gradient	Length (ft) of Line Between M.H.'s	Velocity (ft/s) Flowing Full
INL6	CB5	A	0.11	0.71	0.08	0.08	20.00	3.80	0.30	12 in.	0.32%	40	3.34
CB5	CB4	B	0.07	0.70	0.05	0.13	20.20	3.79	0.49	12 in.	0.32%	126	3.34
CB4	CB3	C	0.20	0.68	0.14	0.27	20.63	3.73	1.01	12 in.	0.32%	132	3.34
CB3	CB2	D	0.19	0.72	0.13	0.40	21.48	3.67	1.47	12 in.	0.32%	84	3.34
BLDG	CB2	E	0.11	0.95	0.10	0.10	20.00	3.80	0.38	8 in.	0.50%	70	3.19
CB2	OUTLET	F	0.13	0.80	0.10	0.60	21.90	3.63	2.18	12 in.	0.32%	62	3.34
ES1	ES1	G	0.11	0.56	0.06	0.06	20.00	3.80	0.23	8 in.	0.50%	35	3.19
OUTL	WETL	H	0.26	0.46	0.12	0.78	22.21	3.60	2.81	12 in.	0.38%	35	3.65

Runoff Coefficient Calculations													
Drainage Area	Pervious			Impervious			Roof Top			Runoff			Drainage Area
	Area (ft ²)	Area (Acre)	C	Area (ft ²)	Area (Acre)	C	Area (ft ²)	Area (Acre)	C	Area (ft ²)	Area (Acre)	C	
A	1769.0	0.04	0.30	2476.0	0.06	0.95	517.0	0.01	0.95	4762.0	0.11	0.71	A
B	1145.0	0.03	0.30	1878.0	0.04	0.95	0.0	0.00	0.95	3023.0	0.07	0.70	B
C	3566.0	0.08	0.30	4757.0	0.11	0.95	398.0	0.01	0.95	8721.0	0.20	0.68	C
D	2620.0	0.06	0.30	5259.0	0.12	0.95	0.0	0.00	0.95	8079.0	0.19	0.72	D
E	0.0	0.00	0.30	0.0	0.00	0.95	4731.0	0.11	0.95	4731.0	0.11	0.95	E
F	1320.0	0.03	0.30	4341.0	0.10	0.95	0.0	0.00	0.95	5661.0	0.13	0.80	F
G	2875.0	0.07	0.30	1863.0	0.04	0.95	0.0	0.00	0.95	4738.0	0.11	0.56	G
H	8434.0	0.19	0.30	2706.0	0.06	0.95	0.0	0.00	0.95	11140.0	0.26	0.46	H
Total	21929.0	0.50	0.30	23280.0	0.53	0.95	5646.0	0.13	0.95	50855.0	1.17	0.67	Total

First Flush Storage
Using the 90% exceedance storm as defined by State of Michigan and U.S. Environmental Protection Agency (and noted below)

Site Information
Site Area (A_s) = 1.17 acre
Flat Roof (A_{FR}) = 0.13 acre
Flat Roof Coefficient (C_{FR}) = 0.84
Parking Lot & Pavement (A_P) = 0.53 acre
Pavement Coefficient (C_P) = 0.97
Open Space (A_{OS}) = 0.50 acre
Open Space Coefficient (C_{OS}) = 0.02

$R_v = \frac{(A_{FR} \cdot C_{FR}) + (A_P \cdot C_P) + (A_{OS} \cdot C_{OS})}{A_s}$
 $R_v = 0.546$ (weighted volume)
 $W/QV = P \cdot R_v$ (Water Quality Volume)
 $P = 1.0$ inches
 $WQV = 0.546$ watershed (in / ft³)
 $WQV = 2314$ ft³

Detention Capacity			
Average End Method			
Contour	Area (ft ²)	Volume (ft ³)	Total Volume (ft ³)
877	0.0		0
Average	347.0	347	347
878	694.0		
Average	1058.5	1059	1406
879	1423.0		
Average	1826.5	1827	3232
880	2230.0		
Average	2672.5	2673	5905
881	3115.0		
Average	3595.0	3595	9500
882	4075.0		
Average	4592.5	4593	14092
883	5110.0		
Total Detention Capacity			14092
First Flush (Volume)			
First Flush (Elevation)			
10-YR Storm (Volume)			
10-YR Storm (Elevation)			
100-YR Storm (Volume)			
100-YR Storm (Elevation)			

10-11-22

STORM WATER DISCHARGE (EGLE)

09-23-22

ISSUED TO GOC-WMS

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ISSUED TO FENTON TWP.

07-07-22

ISSUED TO FENTON TOWNSHIP

06-24-22

OWNER REVIEW

02-18-22

PRELIMINARY OWNER REVIEW

NO.

DATE

SUBJECT

REVISION OR ISSUE

DRAWN

DESIGNED

CHECKED

FIELD CREW

14214 FENTON RD

FENTON TWP

GENESEE CO

GENESEE CO

MICHIGAN

FIRST CHOICE

HEATING & COOLING

Griggs Quaderer, Inc.

8308 OFFICE PARK DRIVE

GRAND BLANC, MI 48439

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SITE PLANNING

15th ANNIVERSARY 2004 - 2019

JOB NO.:

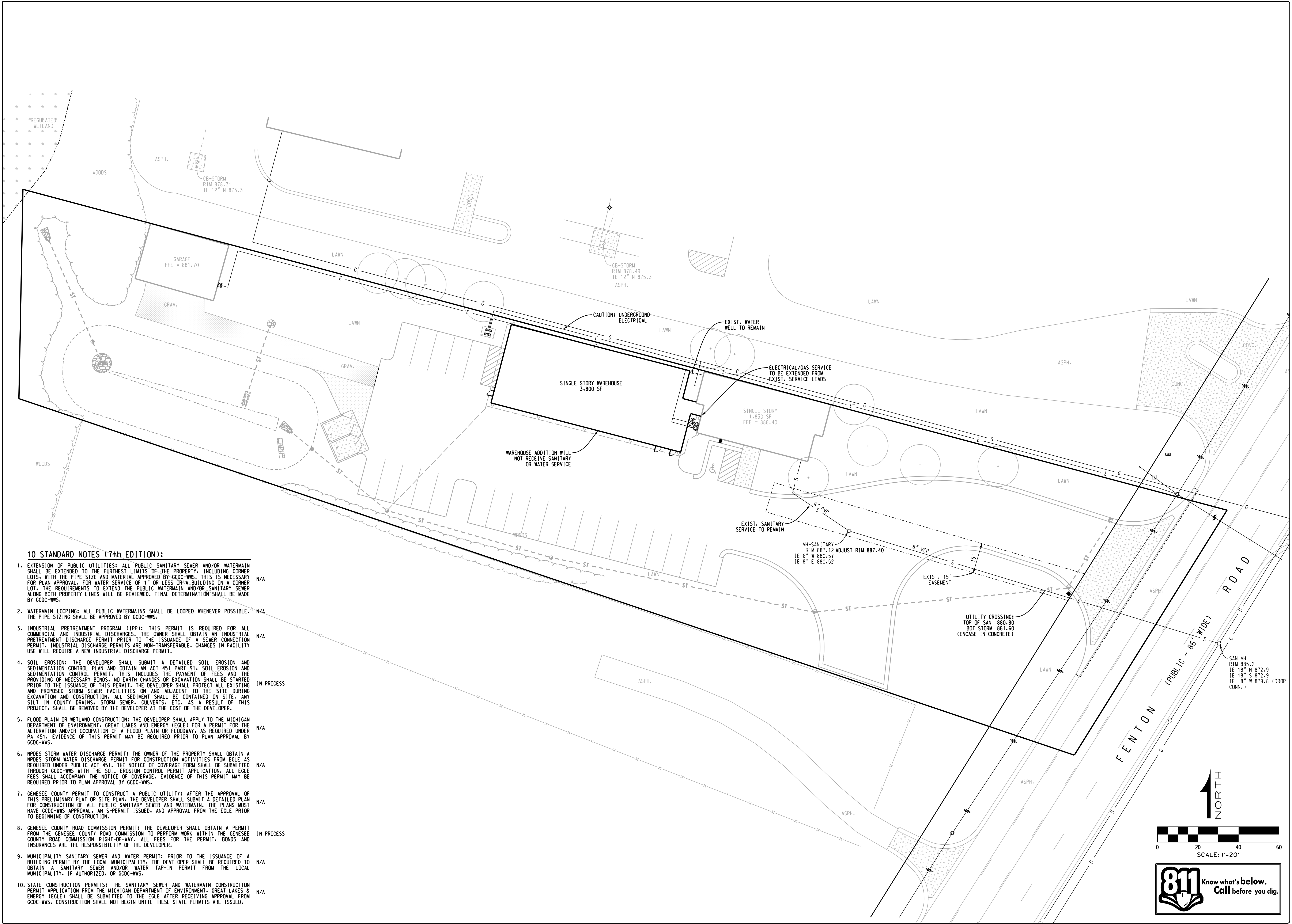
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PHASE:

SURVY

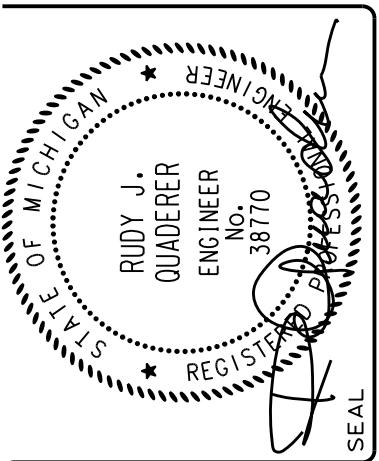
302

AREA DRAINAGE MAP & STORM SEWER DESIGN CALCULATIONS



10 STANDARD NOTES (7th EDITION):

1. EXTENSION OF PUBLIC UTILITIES: ALL PUBLIC SANITARY SEWER AND/OR WATERMAIN SHALL BE EXTENDED TO THE FURTHEST LIMITS OF THE PROPERTY, INCLUDING CORNER LOTS, WITH THE PIPE SIZE AND MATERIAL APPROVED BY GCDC-WWS. THIS IS NECESSARY FOR PLAN APPROVAL. FOR WATER SERVICE OF 1" OR LESS OR A BUILDING ON A CORNER LOT, THE REQUIREMENTS TO EXTEND THE PUBLIC WATERMAIN AND/OR SANITARY SEWER ALONG BOTH PROPERTY LINES WILL BE REVIEWED. FINAL DETERMINATION SHALL BE MADE BY GCDC-WWS. N/A
2. WATERMAIN LOOPING: ALL PUBLIC WATERMAINS SHALL BE LOOPED WHENEVER POSSIBLE. THE PIPE SIZING SHALL BE APPROVED BY GCDC-WWS. N/A
3. INDUSTRIAL PRETREATMENT PROGRAM (IPP): THIS PERMIT IS REQUIRED FOR ALL COMMERCIAL AND INDUSTRIAL DISCHARGES. THE OWNER SHALL OBTAIN AN INDUSTRIAL PRETREATMENT DISCHARGE PERMIT PRIOR TO THE ISSUANCE OF A SEWER CONNECTION PERMIT. INDUSTRIAL DISCHARGE PERMITS ARE NON-TRANSFERABLE. CHANGES IN FACILITY USE WILL REQUIRE A NEW INDUSTRIAL DISCHARGE PERMIT. N/A
4. 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. IN PROCESS
5. 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 BY GCDC-WWS. N/A
6. 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 THROUGH GCDC-WWS WITH THE SOIL EROSION CONTROL PERMIT APPLICATION. ALL EGLE FEES SHALL ACCOMPANY THE NOTICE OF COVERAGE. EVIDENCE OF THIS PERMIT MAY BE REQUIRED PRIOR TO PLAN APPROVAL BY GCDC-WWS. N/A
7. GENESEE COUNTY PERMIT TO CONSTRUCT A PUBLIC UTILITY: AFTER THE APPROVAL OF THIS PRELIMINARY PLAT OR SITE PLAN, THE DEVELOPER SHALL SUBMIT A DETAILED PLAN FOR CONSTRUCTION OF ALL PUBLIC SANITARY SEWER AND WATERMAIN. THE PLANS MUST HAVE GCDC-WWS APPROVAL, AN S-PERMIT ISSUED, AND APPROVAL FROM THE EGLE PRIOR TO BEGINNING OF CONSTRUCTION. N/A
8. GENESEE COUNTY ROAD COMMISSION PERMIT: THE DEVELOPER SHALL OBTAIN A PERMIT FROM THE GENESEE COUNTY ROAD COMMISSION TO PERFORM WORK WITHIN THE GENESEE COUNTY ROAD COMMISSION RIGHT-OF-WAY. ALL FEES FOR THE PERMIT, BONDS AND INSURANCES ARE THE RESPONSIBILITY OF THE DEVELOPER. IN PROCESS
9. MUNICIPALITY SANITARY SEWER AND WATER PERMIT: PRIOR TO THE ISSUANCE OF A BUILDING PERMIT BY THE LOCAL MUNICIPALITY, THE DEVELOPER SHALL BE REQUIRED TO OBTAIN A SANITARY SEWER AND/OR WATER TAP-IN PERMIT FROM THE LOCAL MUNICIPALITY, IF AUTHORIZED, OR GCDC-WWS. N/A
10. STATE CONSTRUCTION PERMITS: THE SANITARY SEWER AND WATERMAIN CONSTRUCTION PERMIT APPLICATION FROM THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY (EGLE) SHALL BE SUBMITTED TO THE EGLE AFTER RECEIVING APPROVAL FROM GCDC-WWS. CONSTRUCTION SHALL NOT BEGIN UNTIL THESE STATE PERMITS ARE ISSUED. N/A



10-11-22	STORM WATER DISCHARGE (EGLE)
09-23-22	ISSUED TO GCDC-WWS
08-16-22	ISSUED TO FENTON TWP.
07-07-22	ISSUED TO FENTON TOWNSHIP
06-24-22	OWNER REVIEW
02-18-22	PRELIMINARY OWNER REVIEW
NO.	DATE
REVISION OR ISSUE	

DRAWN	DESIGNED	CHECKED	FIELD CREW
14214 FENTON RD FENTON TWP GENESEE CO MICHIGAN			

FIRST CHOICE
HEATING & COOLING

SITE UTILITY PLAN

DATE: 10/21/2022 TIME: 2:12:26 PM

Griggs Quaderer, Inc.
8308 OFFICE PARK DRIVE
GRAND BLANC, MI 48439
PH: (810) 695-0154
FX: (810) 695-0158
WWW.GQINCORP.COM

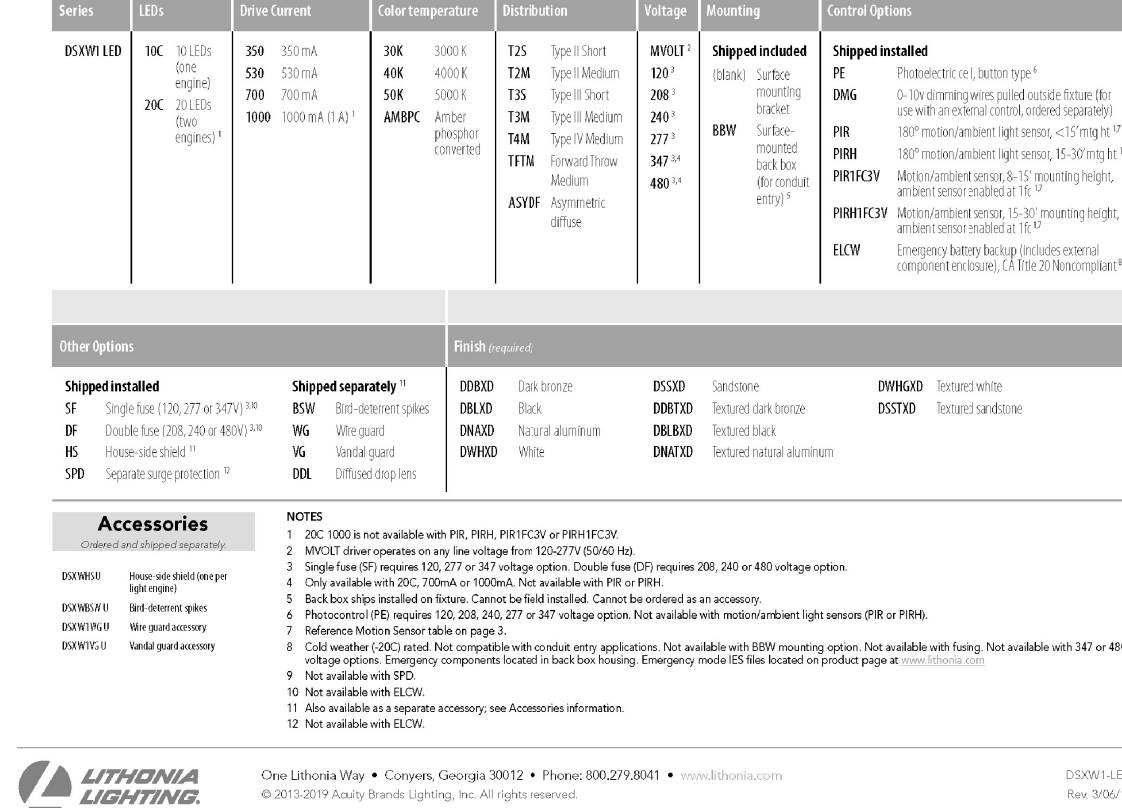
CIVIL ENGINEERING - LAND SURVEYING
SITE PLANNING



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

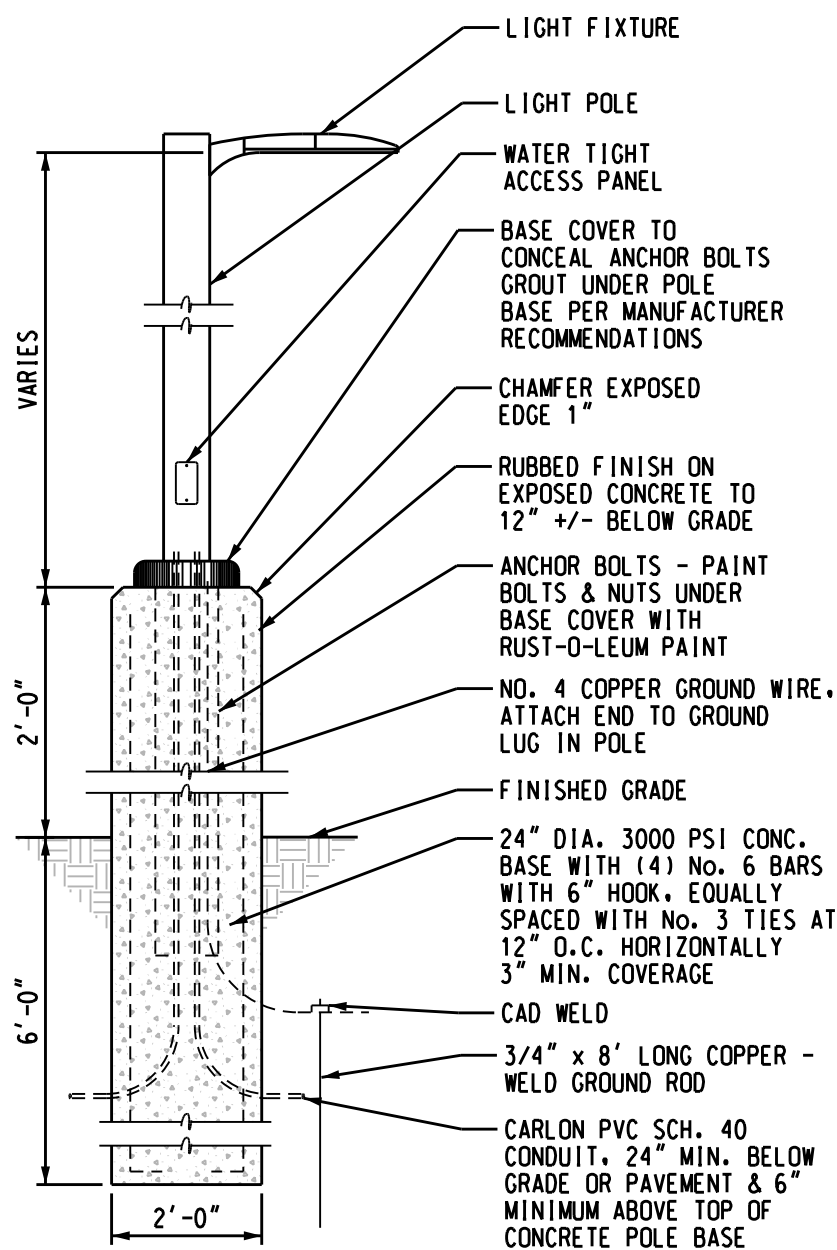
PHASE: SURVY
JOB NO.: 220105

15th ANNIVERSARY
2004 - 2019

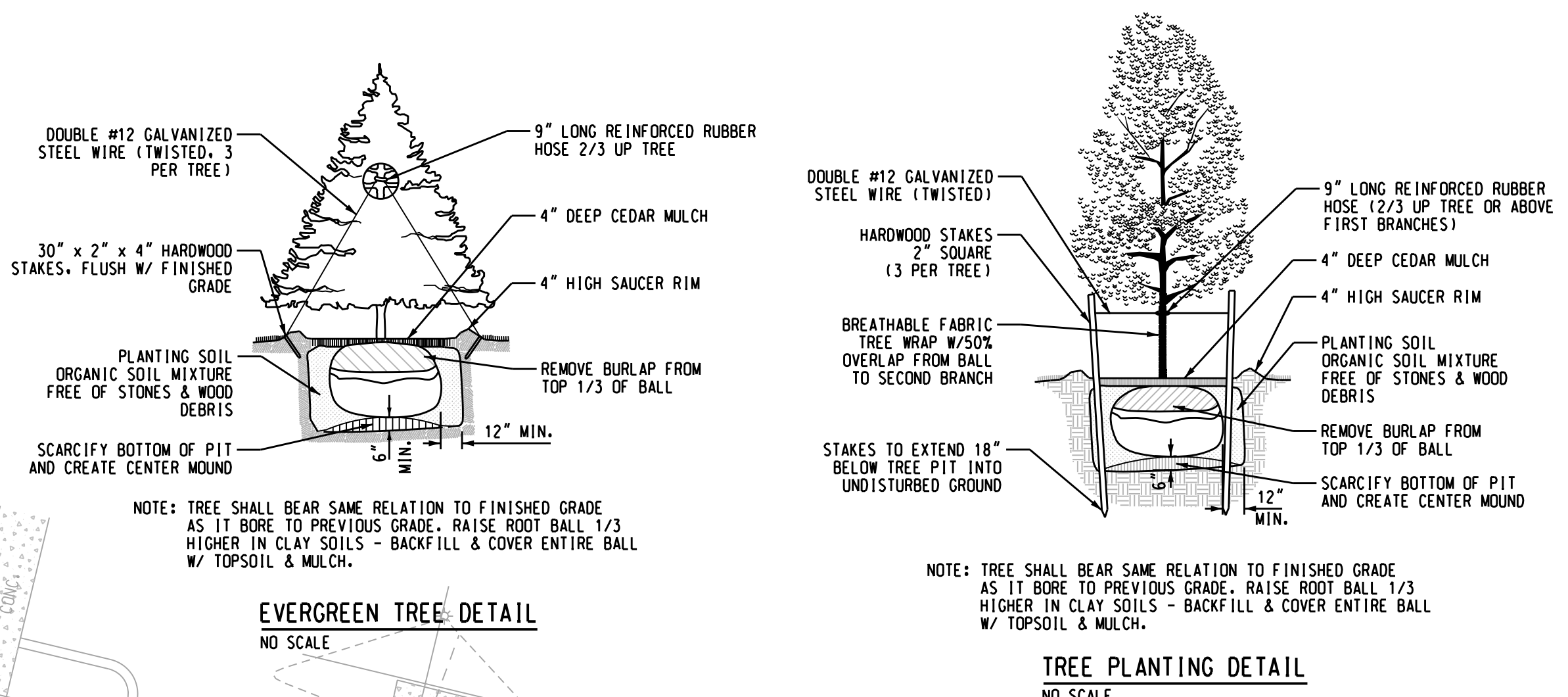
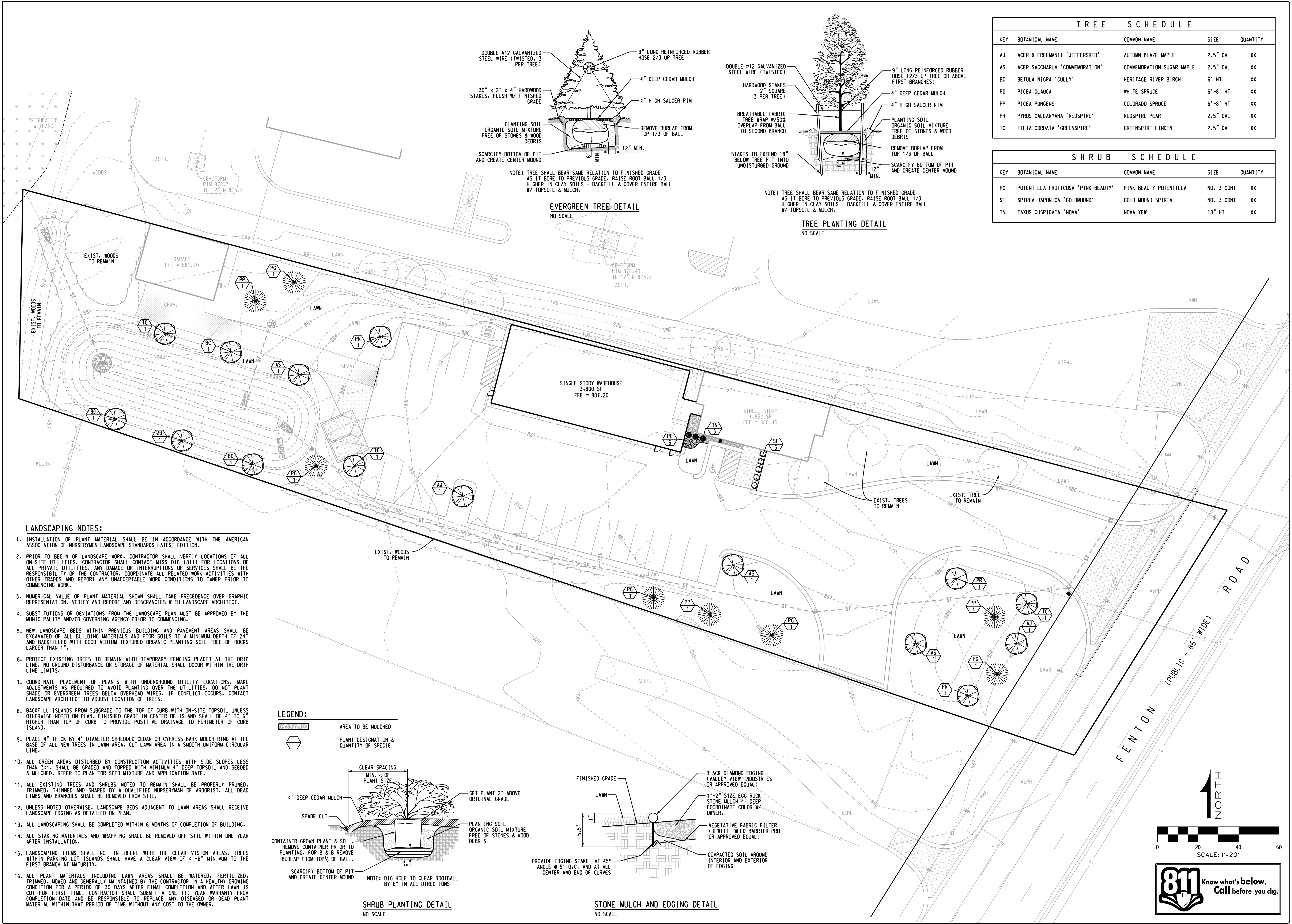
C400



LUMINAIRE SCHEDULE							
QTY	LABEL	ARRANGEMENT	MANUFACTURER	CATALOG NO.	DESCRIPTION	LAMP	WATTAGE
4	A	SINGLE 	LITHONIA	DSXO LED P2 40K TFTM MVOLT HS	D-SERIES AREA SIZE 0, POLE MOUNTED, SINGLE (ONE) LIGHT FIXTURE	LED	49
3	B	SINGLE 	LITHONIA	DSXW1 LED 10C 350 40K TFTM MVOLT	DW-SERIES AREA SIZE 1, WALL MOUNTED, SINGLE (ONE) LIGHT FIXTURE	LED	13.3



LIGHT POLE DETAIL
NO SCALE



TREE SCHEDULE				
KEY	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
AJ	ACER X FREEMANII 'JEFFERSRED'	AUTUMN BLAZE MAPLE	2.5" CAL	XX
AS	ACER SACCHARUM 'COMMEMORATION'	COMMEMORATION SUGAR MAPLE	2.5" CAL	XX
BC	BETULA NIGRA 'CULLY'	HERITAGE RIVER BIRCH	6' HT	XX
PG	PICEA GLAUCA	WHITE SPRUCE	6'-8' HT	XX
PP	PICEA PUNGENS	COLORADO SPRUCE	6'-8' HT	XX
PR	PYRUS CALLARYANA 'REDSPIRE'	REDSPIRE PEAR	2.5" CAL	XX
TC	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LINDEN	2.5" CAL	XX

SHRUB SCHEDULE				
KEY	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
PC	POTENTILLA FRUTICOSA 'PINK BEAUTY'	PINK BEAUTY POTENTILLA	NO. 3 CONT	XX
SF	SPIREA JAPONICA 'GOLDMOUND'	GOLD MOUND SPIREA	NO. 3 CONT	XX
TN	TAXUS CUSPIDATA 'NOVA'	NOVA YEW	18" HT	XX

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SITE PLANNING

1ST ANNIVERSARY

2004 - 2019

PHASE: SURVY

JOB NO.: 220105

500

811

Know what's below.

Call before you dig.

1

NORTH

0

20

40

60

SCALE: 1"=20'

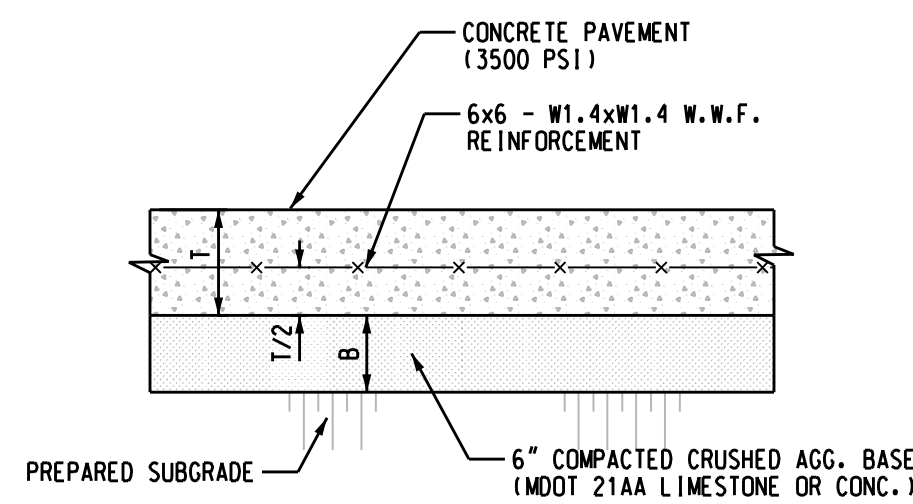
TYPICAL
PAVEMENT SECTION

WEARING COURSE - 1.5" MDOT 13A
LEVEL COURSE - 3" MDOT 3C
AGGREGATE BASE - 8" MDOT 21AA

ROAD R/W
PAVEMENT SECTION

WEARING COURSE - 1.5" MDOT 13A
LEVEL COURSE - 3.5" MDOT 3C
AGGREGATE BASE - 13" MDOT 21AA CRUSHED LIMESTONE

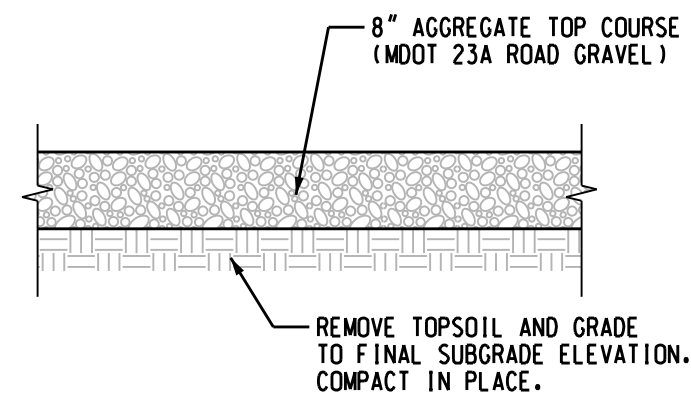
NOTE: AS AN ALTERNATE, CONTRACTOR IS ALLOWED TO SUBSTITUTE
MDOT 21AA CRUSHED CONCRETE FOR THE AGGREGATE BASE.



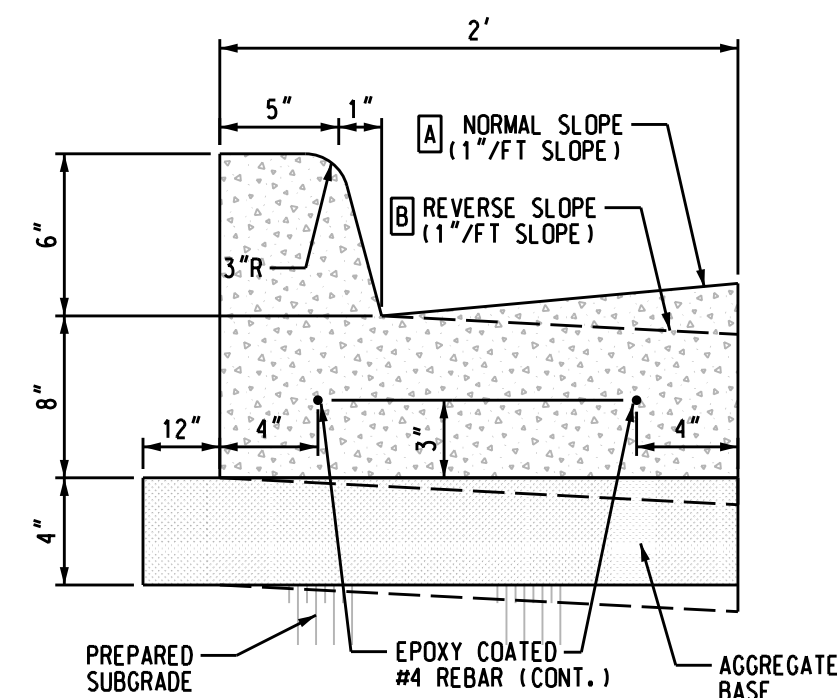
DESIGN:

SERVICE DRIVE	8"	8"	YES
SIDEWALK	4"	4"	YES

CONCRETE PAVEMENT SECTION
NO SCALE

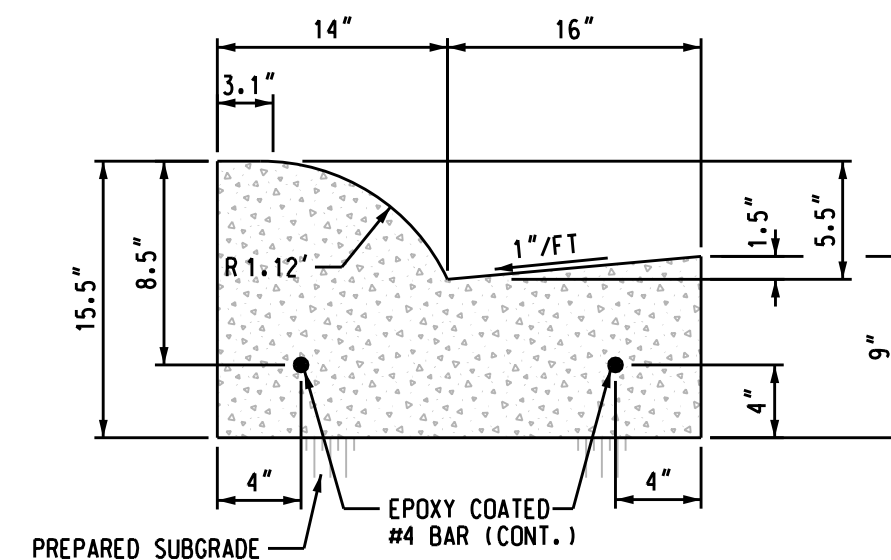


GRAVEL ACCESS DRIVE
NO SCALE



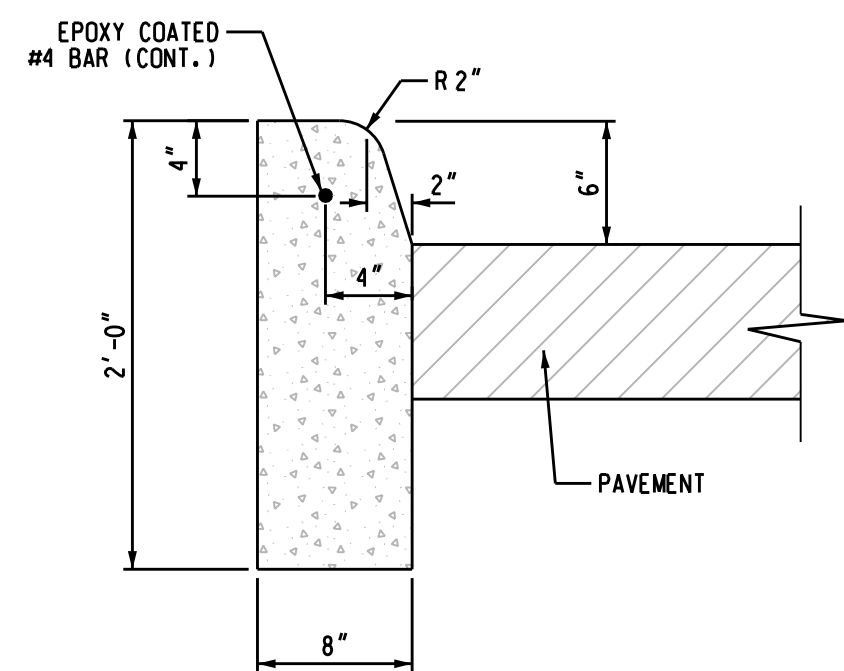
PROVIDE CONTROL JOINTS AT 10 FEET MAXIMUM
SPACING AND DOWELED EXPANSION JOINTS AT 100
FEET MAXIMUM INTERVALS AND AT RADIUS POINTS

CURB & GUTTER DETAIL
NO SCALE ONSITE ONLY



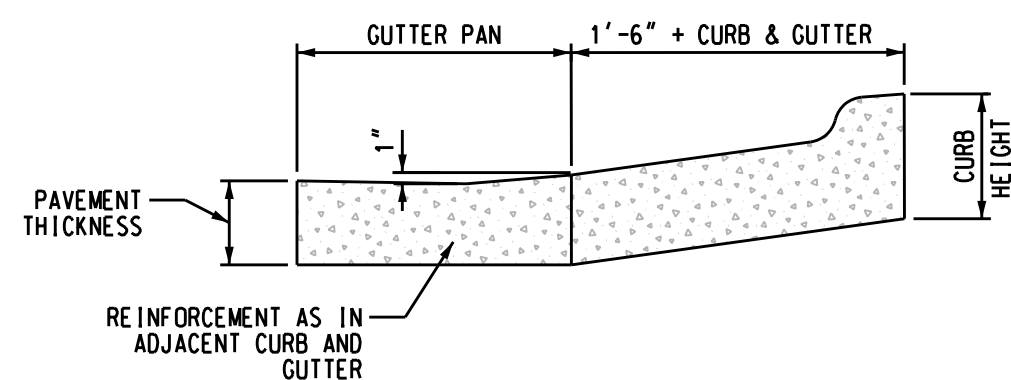
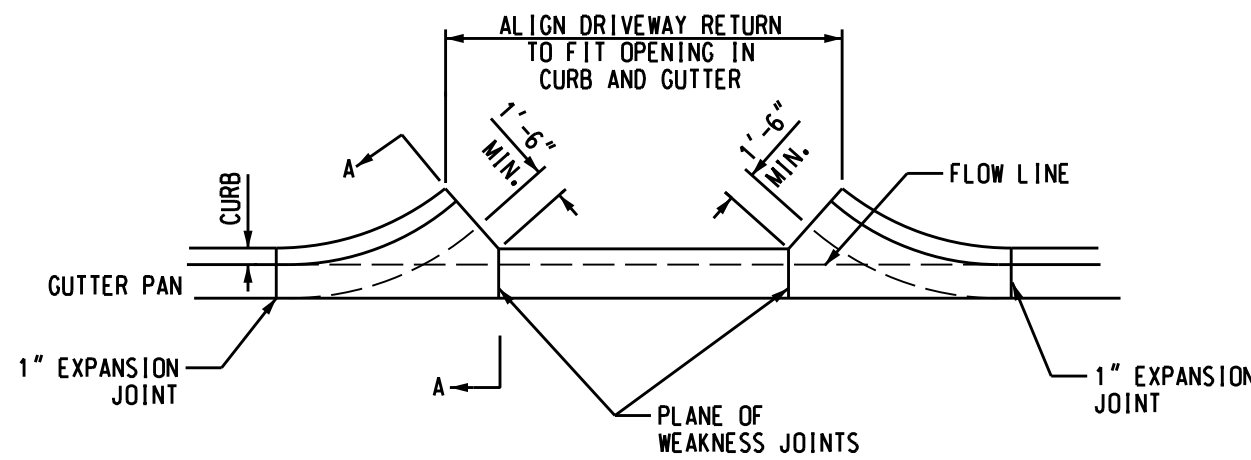
PROVIDE CONTROL JOINTS AT 10 FEET MAXIMUM
SPACING AND DOWELED EXPANSION JOINTS AT 100
FEET MAXIMUM INTERVALS AND AT RADIUS POINTS

CURB & GUTTER DETAIL
NO SCALE B-2 MODIFIED
FENTON RD R/I



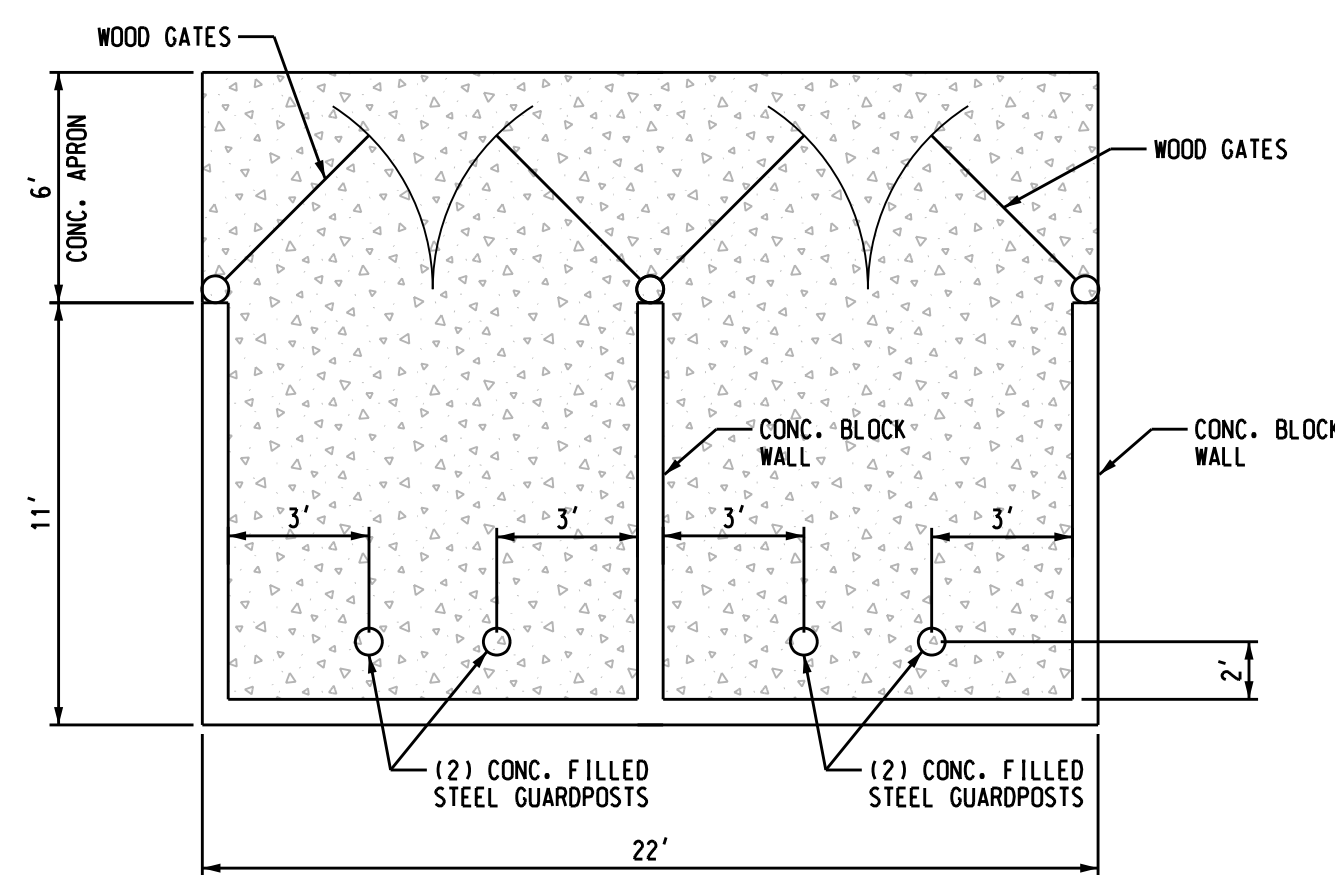
PROVIDE CONTROL JOINTS AT 10 FEET MAXIMUM
SPACING AND DOWELED EXPANSION JOINTS AT 100
FEET MAXIMUM INTERVALS AND AT RADIUS POINTS

VERTICAL CURB DETAIL
NO SCALE ON-SITE ONLY

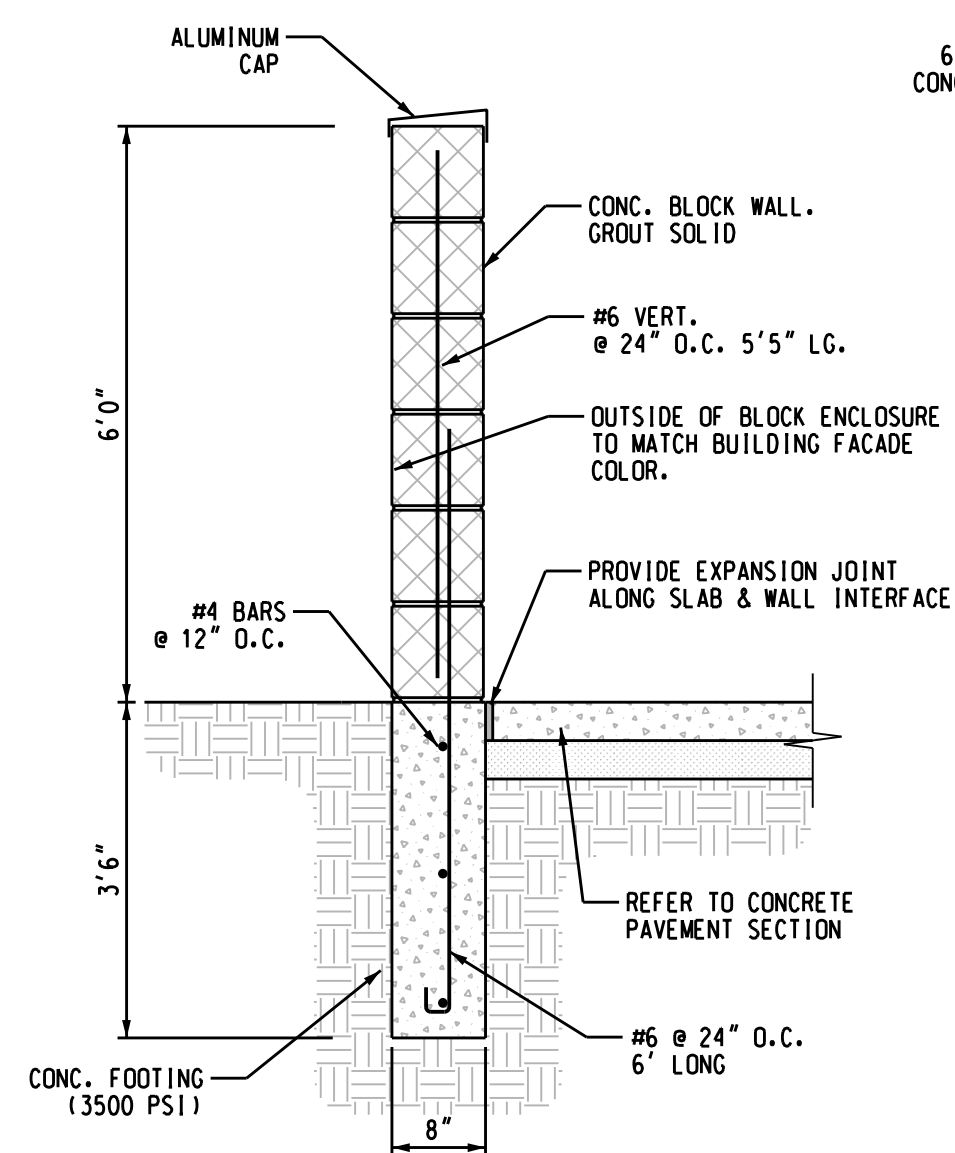


SECTION A-A

CONCRETE DRIVEWAY OPENING - DETAIL 'M'

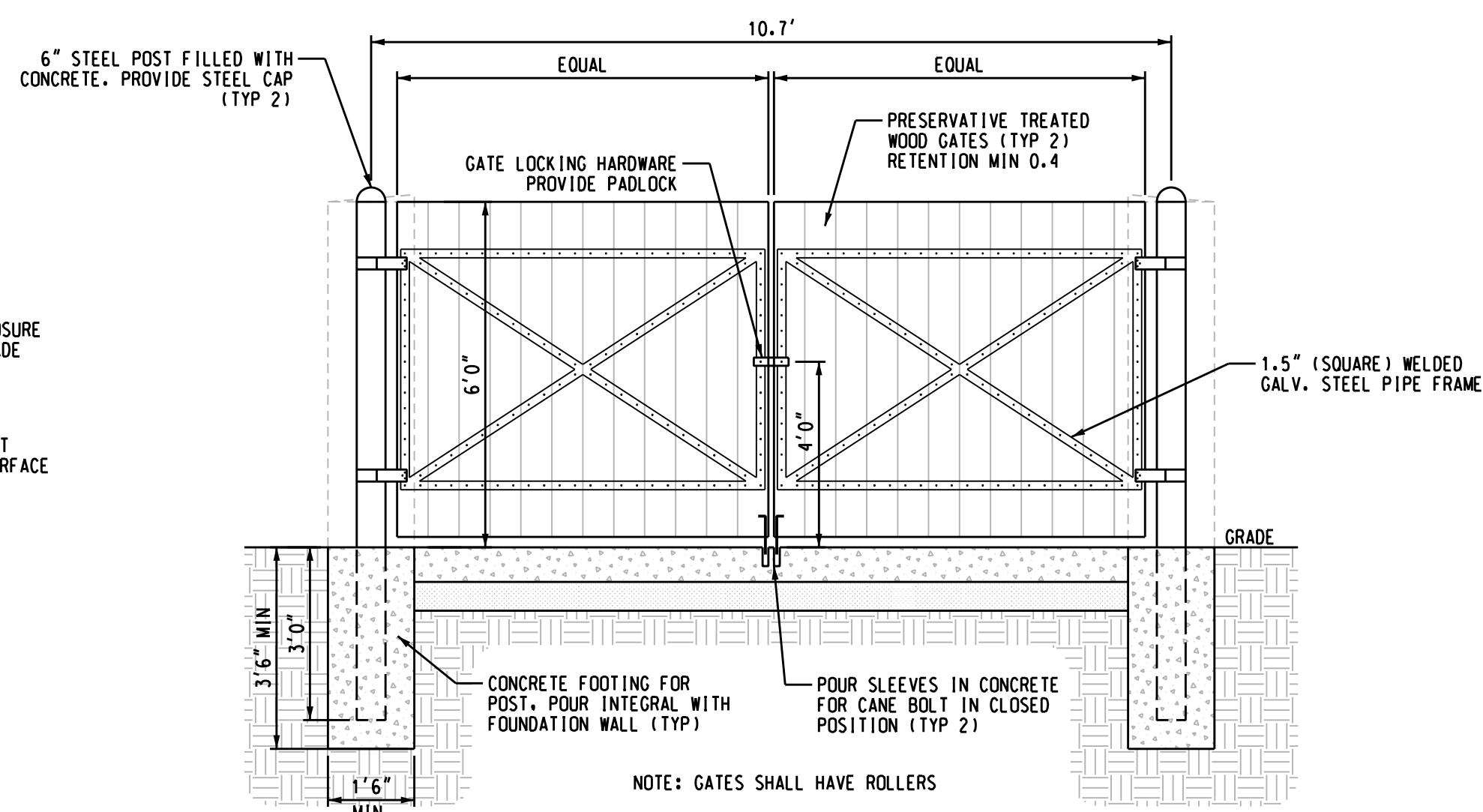


PLAN VIEW



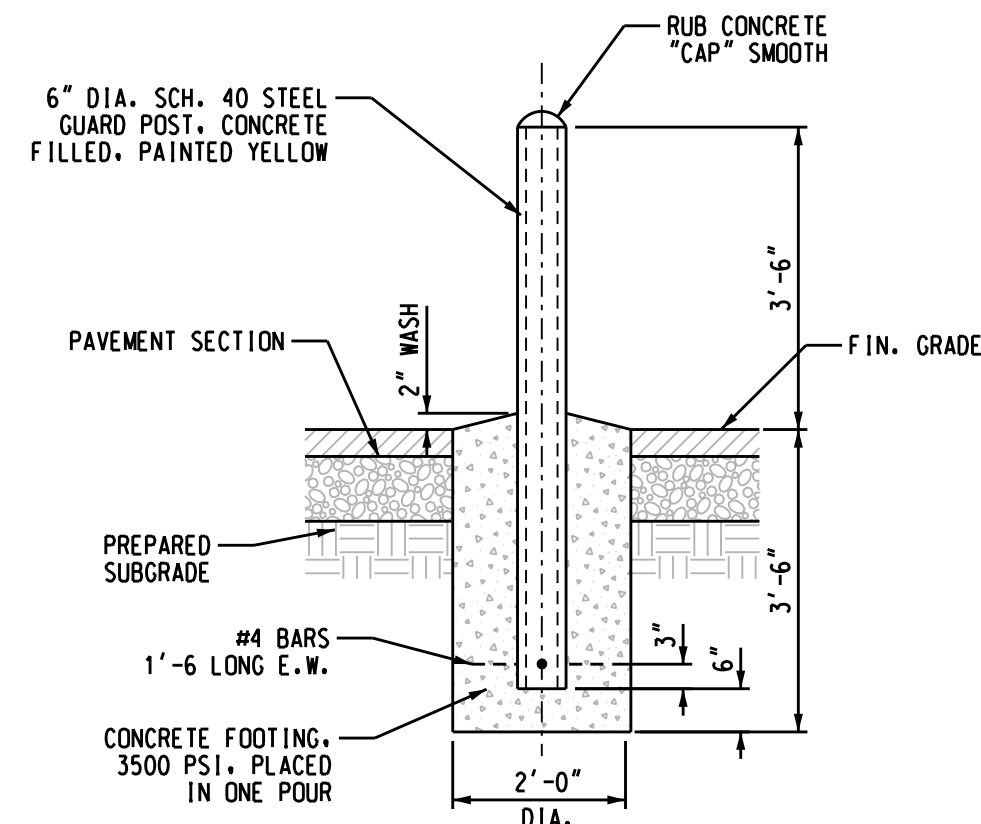
WALL CROSS SECTION

TRASH ENCLOSURE DETAIL
NO SCALE



NOTE: GATES SHALL HAVE ROLLERS

FRONT HALF ELEVATION



GUARD POST DETAIL
NO SCALE