

# GAS STATION / CONVENIENCE STORE

## PROPOSED ADDITION / BLDG. RENOVATION

### SITE PLAN APPROVAL PACKAGE

4465 W. VIENNA ROAD  
CLIO, MI 48420

PART OF THE NORTHWEST 1/4 OF SECTION 21  
TOWNSHIP 09 NORTH, RANGE 06 EAST  
VIENNA TOWNSHIP, COUNTY OF GENESEE, STATE OF MICHIGAN

#### PROPERTY DESCRIPTION:

LAND SITUATED IN THE NORTHWEST 1/4 OF SECTION 21, TOWN 9-NORTH, RANGE 6-EAST, VIENNA TOWNSHIP, COUNTY OF GENESEE, STATE OF MICHIGAN MORE PARTICULARLY DESCRIBED AS:

THE NORTH 275 FEET OF THE EAST 200 FEET OF THE WEST 755.40 FEET OF SAID NORTHWEST 1/4.

#### DRAWING INDEX:

●	02-10-2025	C000 — COVER SHEET
○	02-10-2025	C100 — TOPOGRAPHIC SURVEY PLAN
○	02-10-2025	C101 — SITE REMOVAL PLAN
○	02-10-2025	C200 — SITE LAYOUT PLAN
○	02-10-2025	C300 — SITE GRADING & STORM SEWER PLAN
○	02-10-2025	C301 — SOIL EROSION CONTROL PLAN
○	02-10-2025	C302 — PROPOSED DRAINAGE AREA MAP & STORM WATER CALCULATIONS
○	02-10-2025	C400 — SITE UTILITY PLAN
○	02-10-2025	C401 — SITE PHOTOMETRIC PLAN
○	02-10-2025	C500 — SITE LANDSCAPE PLAN
○	02-10-2025	C600 — SITE DETAILS
○	02-10-2025	A1 — CONCEPTUAL FLOOR PLAN
○	02-10-2025	A2 — CONCEPTUAL BUILDING ELEVATIONS
○	02-10-2025	— WATER MAIN STANDARD DETAILS (COUNTY)
○	02-10-2025	— SANITARY SEWER STANDARD DETAILS (COUNTY)
○	02-10-2025	— STANDARD CONSTRUCTION NOTES (COUNTY)

DATE:  MOST RECENT ISSUE / REVISION DATE  
FILLED CIRCLE INDICATES SUBMITTED DRAWING

#### BENCHMARKS:

BM #1 TOP OF PK NAIL IN SOUTH FACE OF POWER POLE LOCATED APPROXIMATELY 32' EAST OF THE CENTERLINE OF THE WEST DRIVE APPROACH AND APPROXIMATELY 135' SOUTH OF CENTERLINE VIENNA ROAD. ELEVATION = 702.31

#### GCDC-WWS CONTRACTOR ALERT STATEMENT:

THIS PROJECT HAS BEEN DESIGNED IMPLEMENTING THE LATEST GCDC-WWS DESIGN SPECIFICATIONS (8TH EDITION). CAREFULLY REVIEW THE NOTES, DETAILS, AND DESIGN PRIOR TO SUBMITTING A BID. FULL COMPLIANCE WITH THE STANDARDS WILL BE REQUIRED.

#### NPDES STATEMENT:

THE OWNER WILL NOT NEED TO OBTAIN AN NPDES STORM WATER DISCHARGE PERMIT FROM THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE). TOTAL DISTURBED AREA: 0.95 ACRES

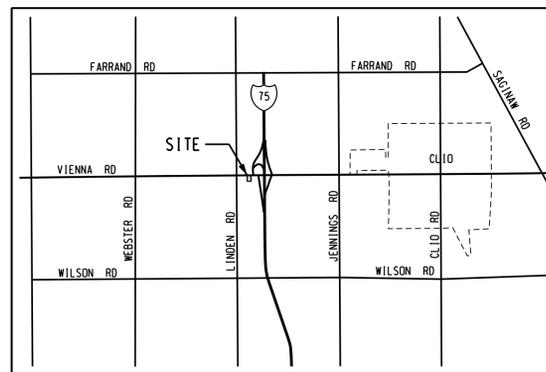
#### TOPOGRAPHIC SURVEY STATEMENT:

THE EXISTING FEATURES SHOWN ON THIS PLAN ARE FROM AN ACTUAL TOPOGRAPHIC SURVEY PERFORMED BY GRIGGS QUADERER, INC. IN DECEMBER OF 2024. 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: ABDALLAH ABDALLAH  
M66 INVESTMENTS LLC  
2366 LOST CREEK CT.  
FLUSHING, MI 48433  
PHONE: (810) 265-0463  
EMAIL: ABDALLAH5105@ICLOUD.COM

ARCHITECT: JOHN COSTA, AIA  
ARCHITECTURAL DESIGN & CONSULTATION  
417 OLDMILL DRIVE  
FLUSHING, MI 48433  
PHONE: (810) 659-5275  
EMAIL: JNL.COSTA@SBCGLOBAL.NET

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



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
JENNIFER WOLFE/ELL BLDG. ADMINISTRATOR VIENNA TOWNSHIP 3400 W. VIENNA ROAD CLIO, MI 48420 PH: (810) 564-7053	02-10-2025	UNDER REVIEW	SOIL EROSION CONTROL GCDC-WWS DION BURROUGHS G-4610 BEECHER RD. FLINT, MI 48532 PH: 810-732-7870	-	-
SANITARY GCDC-WWS LYNETTE MEINZ, PE G-4610 BEECHER RD. FLINT, MI 48532 PH: 810-732-7870	-	-	IPP GCDC-WWS TRAD DOMCK G-4610 BEECHER RD. FLINT, MI 48532 PH: 810-732-7870	-	-
STORM GCDC-WWS HEATHER KRONENBERG G-4608 BEECHER RD. FLINT, MI 48532 PH: 810-732-1590	-	-	ROAD GC ROAD COMMISSION GERRAD GODLEY, PE 211 W. OAKLEY ST. FLINT, MI 48503 PH: 810-767-4920	-	NOT REQUIRED



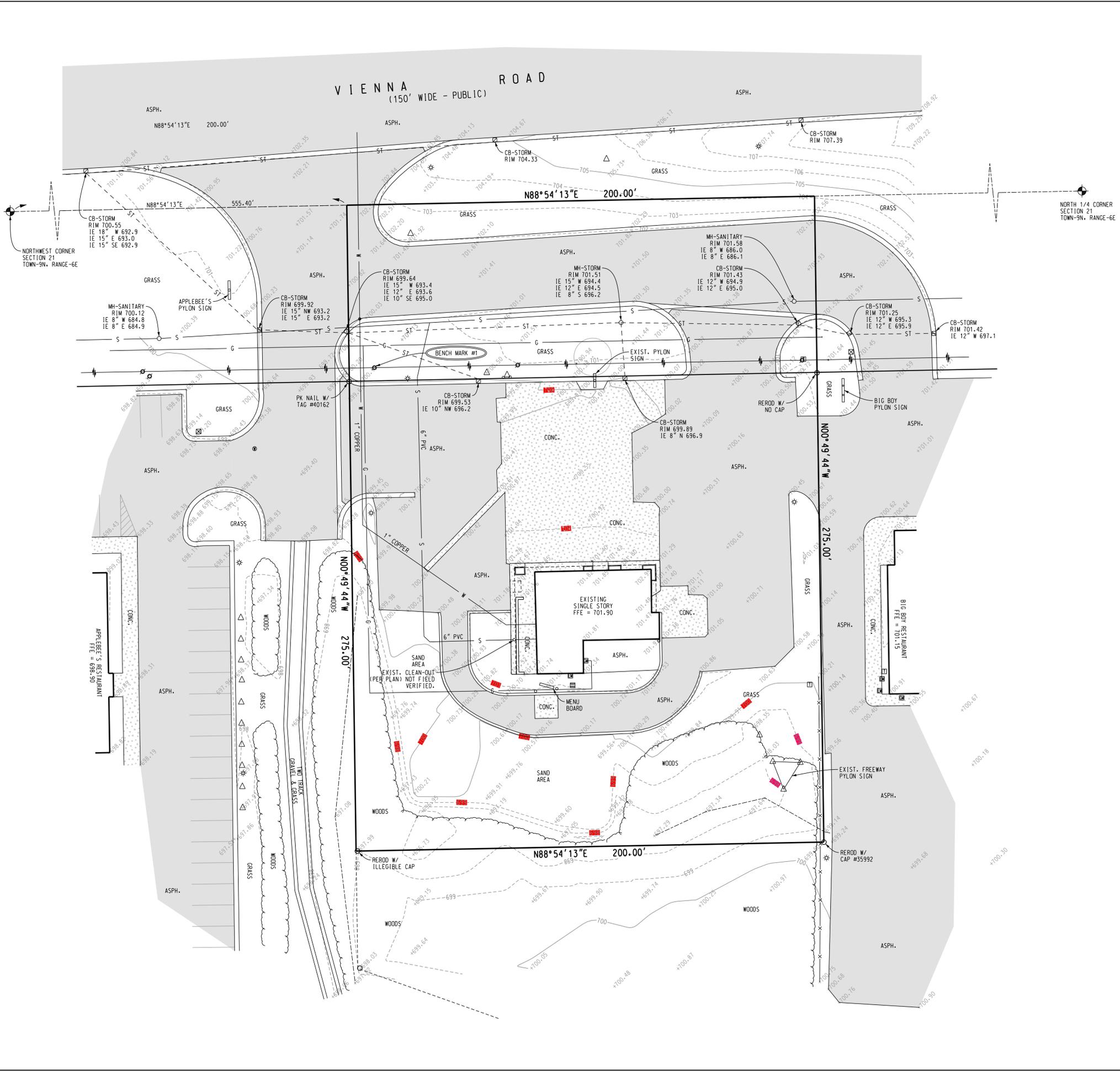
NO.	DATE	REVISION OR ISSUE
02-10-25	ISSUED TO VIENNA TWP.	
12-03-24	PRELIM. TOPOGRAPHY	

DRAWN	DESIGNED	CHECKED	FIELD
	BRZEZINSKI	GREW RD. / CB	

GAS STATION / CONVENIENCE STORE  
PROPOSED ADDITION / BLDG. RENOVATION  
4465 VIENNA ROAD  
VIENNA TOWNSHIP, COUNTY OF GENESEE, STATE OF MICHIGAN  
COVER SHEET

Griggs Quaderer, Inc.  
8308 OFFICE PARK DRIVE  
GRAND BLANC, MI 48439  
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WWW.GQINCORP.COM  
RUDY@GQINCORP.COM  
CHRIS@GQINCORP.COM  
CIVIL ENGINEERING - LAND SURVEYING  
SITE PLANNING  
40th ANNIVERSARY 2004 - 2024

PHASE: SPA  
JOB NO.: 241101  
C000

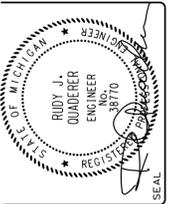


STANDARD LEGEND	
DESCRIPTION	EXISTING
BUILDING	—
STORM SEWER	— ST —
SANITARY SEWER	— S —
WATER	— W —
GAS LINE	— G —
ELECTRIC LINE	— E —
TELEPHONE LINE	— T —
MANHOLE	○
CATCH BASIN	⊠
FIRE HYDRANT	⊠
VALVE	•
UTILITY POLE W/GUY WIRE	⊠
UTILITY RISER	⊠
LIGHT POLE	⊠
SIGN	⊠
CURB & GUTTER	—
FENCE	— X —
GUARD RAIL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

**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.

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 THE NORTH 275 FEET OF THE EAST 200 FEET OF THE WEST 755.40 FEET OF SAID NORTHWEST 1/4.

**BENCHMARKS:**  
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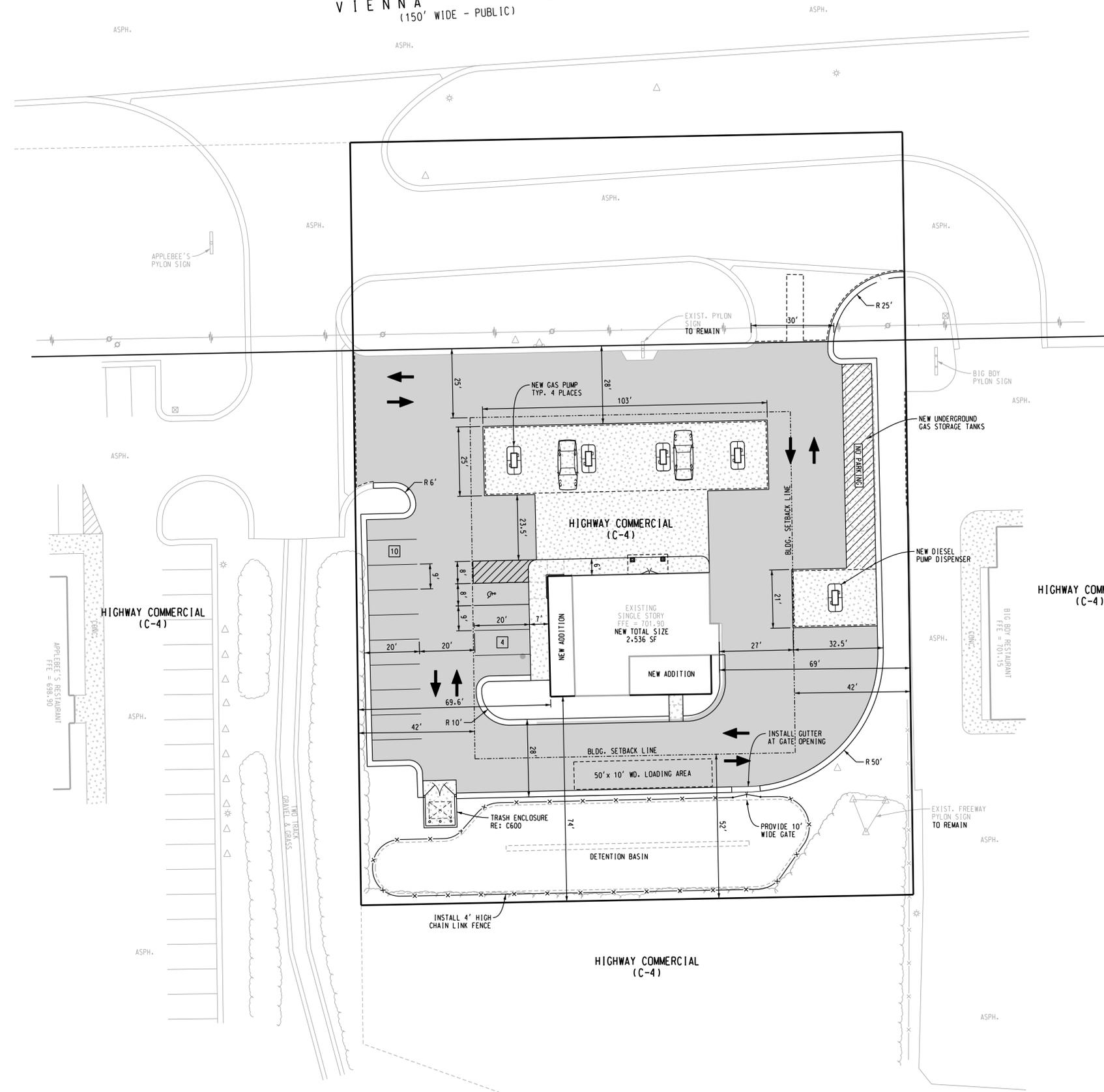
**GAS STATION / CONVENIENCE STORE  
 PROPOSED ADDITION / BLDG. RENOVATION**  
 4465 VIENNA ROAD  
 VIENNA TOWNSHIP, COUNTY OF GENESEE, STATE OF MICHIGAN  
 BOUNDARY & TOPOGRAPHIC SURVEY

**Griggs Quaderer, Inc.**  
 8308 OFFICE PARK DRIVE  
 GRAND BLANC, MI 48439  
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 RUDY@GQINCORP.COM  
 CHRIS@GQINCORP.COM  
 CIVIL ENGINEERING - LAND SURVEYING  
 SITE PLANNING



PHASE: SPA  
 JOB NO.: 241101  
 C100

VIENNA ROAD  
(150' WIDE - PUBLIC)



**GENERAL NOTES:**

- 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING TO ACCOMPLISH ALL WORK INDICATED ON PLANS AND TO PERFORM REQUIRED COMPACTION OPERATIONS. CONTRACTOR TO PROVIDE TESTING CONSULTANT TO VERIFY DENSITY REQUIREMENTS FOR SUBGRADE.
- 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.
- NO EQUIPMENT OR MATERIAL STORAGE IS PERMITTED WITHIN THE ROAD RIGHT-OF-WAY.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL NOTIFY MISS DIG (811) THREE (3) WORKING DAYS PRIOR TO STARTING ANY EXCAVATION WITH POWER EQUIPMENT.
- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL CONSTRUCTION LAYOUT AND GRADE ELEVATIONS FOR THEIR WORK IN ACCORDANCE WITH DATA SHOWN ON DOCUMENTS.
- 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.
- 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.
- NO DIMENSIONS SHALL BE SCALED OFF THE DOCUMENTS. REFER UNCLEAR ITEMS TO THE ENGINEER FOR INTERPRETATION.
- REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS, SLAB AND UNDERBED THICKNESS.

**LAND USE INFORMATION:**

CURRENT ZONING:	HIGHWAY COMMERCIAL (C-4)
PROPOSED ZONING:	HIGHWAY COMMERCIAL (C-4)
CURRENT USE:	FORMER GAS STATION (CLOSED)
PROPOSED USE:	GAS STATION / CONVENIENCE STORE
TOTAL SITE AREA:	55,000 SF, 1.26 AC.
TOTAL BUILDING AREA:	2,536 SF
LOT COVERAGE BY BLDG:	5.0%
YARD SETBACKS:	BUILDING
	FRONT YARD 25LF
	SIDE YARD 42LF
	REAR YARD 52LF

PARKING DATA:			
USE	REQUIREMENTS	PARKING REQUIRED	PARKING PROVIDED
GAS STATION (SELF SERVE)	1 SPACE + 1 SPACE PER EMPLOY.	4 SPACES	12 SPACES
	1 + 3 =		
RETAIL STORE (MINIMARKET)	1 SPACE PER 150 SF OF UFA	8 SPACES	
	1,132 SF / 150 =		
BARRIER FREE (TOTAL)	1 - 25 SPACES	1 SPACE	1 SPACE
TOTAL		12 SPACES	14 SPACES

**MARKING / SIGNAGE LEGEND:**

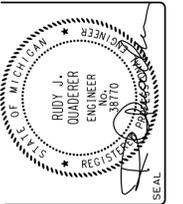
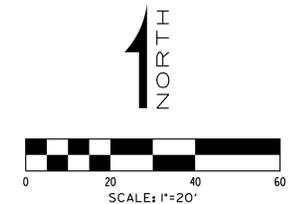
- ① STOP SIGN (R1-1)
- ② ACCESSIBLE SIGN W/ VAN ACCESSIBLE (R7-8 & R7-8A)
- ③ NO PARKING - FIRE LANE
- NO PARKING / NO DRIVING AREAS
- 4" WIDE WHITE PAINT STRIPING
- 2" ON CENTER @ 45" REFER TO PAVEMENT MARKING NOTE #2 FOR BARRIER FREE PARKING

**PAVEMENT MARKING & SIGNAGE NOTES:**

- PARKING STALL WIDTH DIMENSIONS ARE TO CENTERLINE OF STRIPING.
- 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.
- CONTRACTOR SHALL NOT APPLY TRAFFIC MARKING PAINT ON NEW ASPHALT UNTIL PAVEMENT HAS CURED A MINIMUM OF SEVEN (7) DAYS.
- 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.
- ALL TRAFFIC CONTROL SIGNS SHALL CONFORM WITH ALL REQUIREMENTS AS STIPULATED IN THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ⑤ NUMBER OF PARKING SPACES (FOR INFORMATION ONLY)

**PAVEMENT LEGEND:**

- ASPHALT PAVEMENT SECTION (ON-SITE) RE:
- CONCRETE PAVEMENT SECTION RE:



DRAWN	DESIGNED	CHECKED	FIELD CREW RD / CB
		BRZEZINSKI	
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		12-03-24	
			REVISION OR ISSUE

**GAS STATION / CONVENIENCE STORE  
PROPOSED ADDITION / BLDG. RENOVATION**

4465 VIENNA ROAD  
VIENNA TOWNSHIP, COUNTY OF GENESEE, STATE OF MICHIGAN

**Griggs Quaderer, Inc.**  
8308 OFFICE PARK DRIVE  
GRAND BLANC, MI 48439  
PH: (517) 695-0154

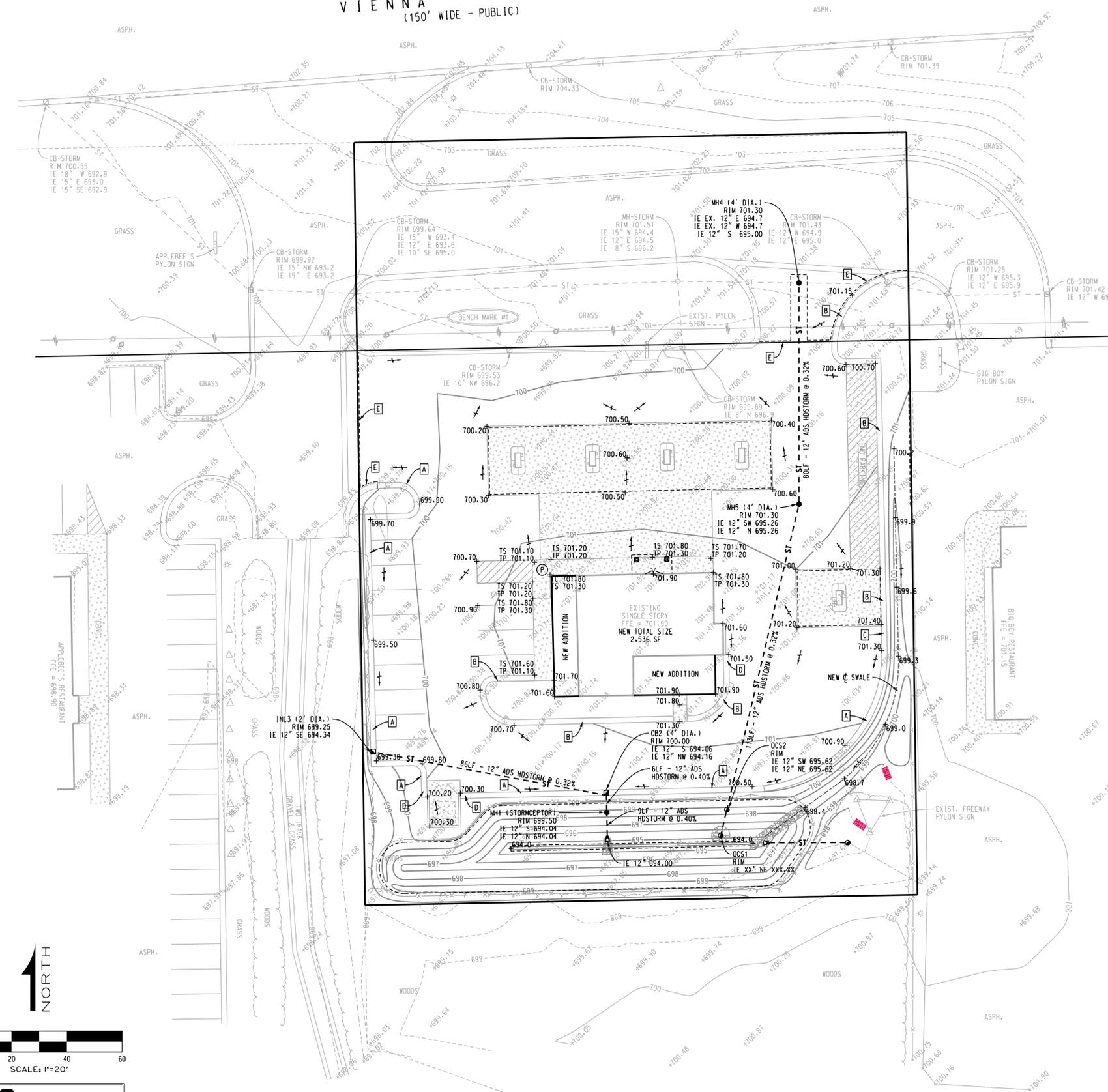
WWW.GQINCORP.COM  
RUDY@GQINCORP.COM  
CHRIS@GQINCORP.COM



PHASE: SPA  
JOB NO.: 241101  
C200



VIENNA ROAD  
(150' WIDE - PUBLIC)

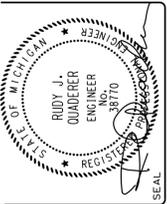


GRADING NOTES:

- ALL PROPOSED SPOT ELEVATIONS IN PAVED AREAS ARE TO TOP OF PAVEMENT UNLESS NOTED OTHERWISE.  
TS - TOP OF SIDEWALK  
TP - TOP OF PAVEMENT
- CONTOURS SHOWN ARE FOR REFERENCE ONLY. BASE CONSTRUCTION EFFORTS ON PROPOSED SPOT ELEVATIONS ONLY.
- "BARRIER FREE" PARKING AND SIDEWALK RAMPS SHALL CONFORM IN ALL RESPECTS TO THE MICHIGAN ADA (AMERICANS WITH DISABILITIES ACT) REQUIREMENTS.
- 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.
- 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.
- SITE CONTRACTOR IS RESPONSIBLE TO PROVIDE A STABLE SUBGRADE AT DESIGN ELEVATIONS. ALL PAVED AREAS INCLUDING BUILDING PAD SHALL BE PRODFOLLED & COMPACTED TO MEET 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ANSI/ASTM D1557.
- CONTRACTOR SHALL STORE SUFFICIENT TOPSOIL MATERIAL ON-SITE FOR RE-USE IN ALL DISTURBED GREEN AREAS AND NEW LANDSCAPE AREAS.
- PROVIDE POSITIVE DRAINAGE AT ALL TIMES TO ENSURE NO STANDING WATER. MAINTAIN A MINIMUM SLOPE OF 1.00% IN ALL NEW BITUMINOUS AREAS.

CURB, GRADING & SIDEWALK RAMP NOTATIONS:

- A** STANDARD CURB AND GUTTER
- B** STANDARD CURB AND GUTTER WITH REVERSE SLOPE
- C** 10 FOOT TRANSITION BETWEEN TYPE **A** AND TYPE **B**
- D** 5 FOOT CURB END TRANSITION.
- E** MATCH EXISTING PAVEMENT OR CURB ELEVATION.
- P** TYPE P RAMP, PER MOOT DETAIL R-28-J



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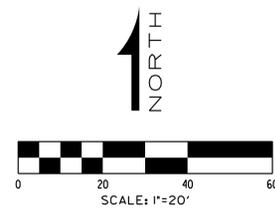
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	BRZEZINSKI	CREW	RD / CB

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VIENNA TOWNSHIP, COUNTY OF GENESEE, STATE OF MICHIGAN  
SITE GRADING & STORM SEWER PLAN

**Griggs Quaderer, Inc.**  
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PH: (616) 695-0154  
CIVIL ENGINEERING - LAND SURVEYING  
SITE PLANNING



PHASE: SPA  
JOB NO.: 241101  
C300



VIENNA ROAD  
(150' WIDE - PUBLIC)

ASPH.

PARKER CREEK  
900 FEET

SOIL EROSION CONTROL MEASURES:

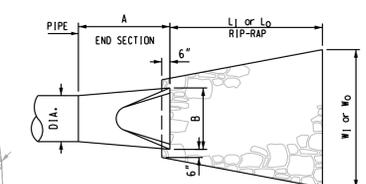
2	SELECTIVE GRADING & SHAPING	WATER CAN BE DIVERTED TO MINIMIZE EROSION FLATTER SLOPES EASE EROSION PROBLEMS
6	SEEDING WITH MULCH (AND/OR MATING)	FACILITATES ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR DRAINAGEWAYS WITH LOW VELOCITY EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL SHOULD INCLUDE PREPARED TOPSOIL BED
13	STP-RAP, RIP-RAP, CATIONS	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
49	CHECK DAMS	REDUCES FLOW VELOCITY CATCHES SEDIMENT CAN BE CONSTRUCTED OF LOGS, STRAIN, HAY, ROCK, LIMBER, WOODS, 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 GENESEE 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 AND ACT 451 PERMIT INCLUDING PAYMENT OF FEES AND PROVIDING THE NECESSARY BONDS FROM THE GENESEE 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:

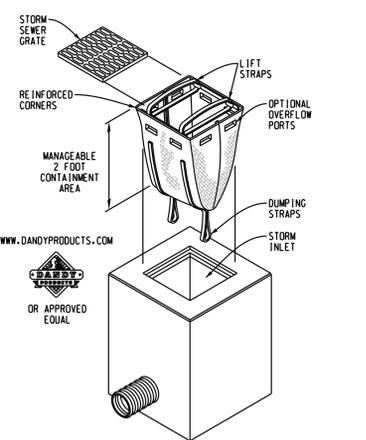
- A CONTRACTOR/INSPECTOR SHALL INSPECT THE SOIL EROSION AND SEDIMENT CONTROL DEVICES ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF A PRECIPITATION EVENT WHICH RESULTS IN A STORM WATER DISCHARGE FROM THE SITE. A LOG OF INSPECTION REPORTS SHALL BE MAINTAINED AND ACCESSIBLE IN ACCORDANCE WITH NPDES REQUIREMENTS. 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.



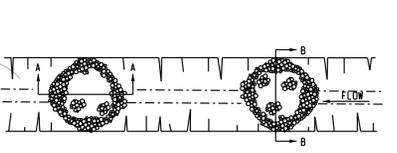
- 1 = INLET (12" THICK MIN.)
- 2 = OUTLET (18" THICK MIN.)
3. RIP-RAP SHALL BE PLACED ON FILTER FABRIC.
4. RIP-RAP SHALL BE CRUSHED LIMESTONE 6" TO 12" IN SIZE.

PIPE DIA. (INCHES)	A	B	L <sub>1</sub>	W <sub>1</sub>	L <sub>2</sub>	W <sub>2</sub>	S.Y. (INLET)	S.Y. (OUTLET)
12	6'	2.3'	4'	4.2'	6'	4.7'	1.9	2.9

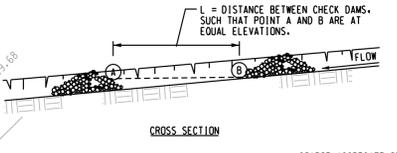
13 RIP-RAP APRON



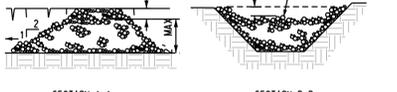
36 SEDIMENT CONTROL ASSEMBLY



49 CHECK DAMS

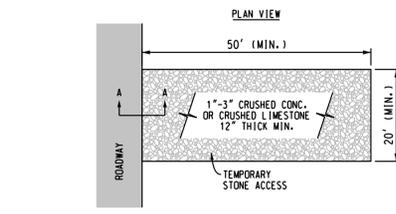


SECTION A-A SECTION B-B

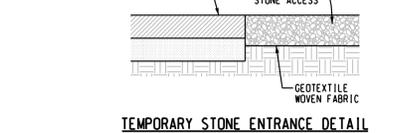


NOTE: CHECK DAMS GREATER THAN TWO FEET IN DEPTH MAY SERIOUSLY IMPACT THE FLOW CHARACTERISTICS OF THE DITCH.

54 SILTATION CONTROL FENCE

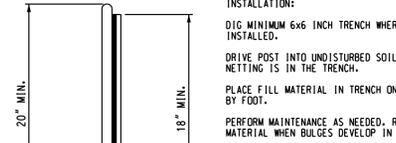


CROSS SECTION A-A



TEMPORARY STONE ENTRANCE DETAIL

NO SCALE



54 SILTATION CONTROL FENCE

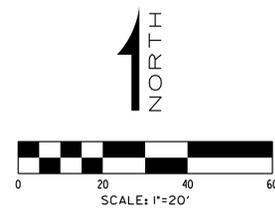
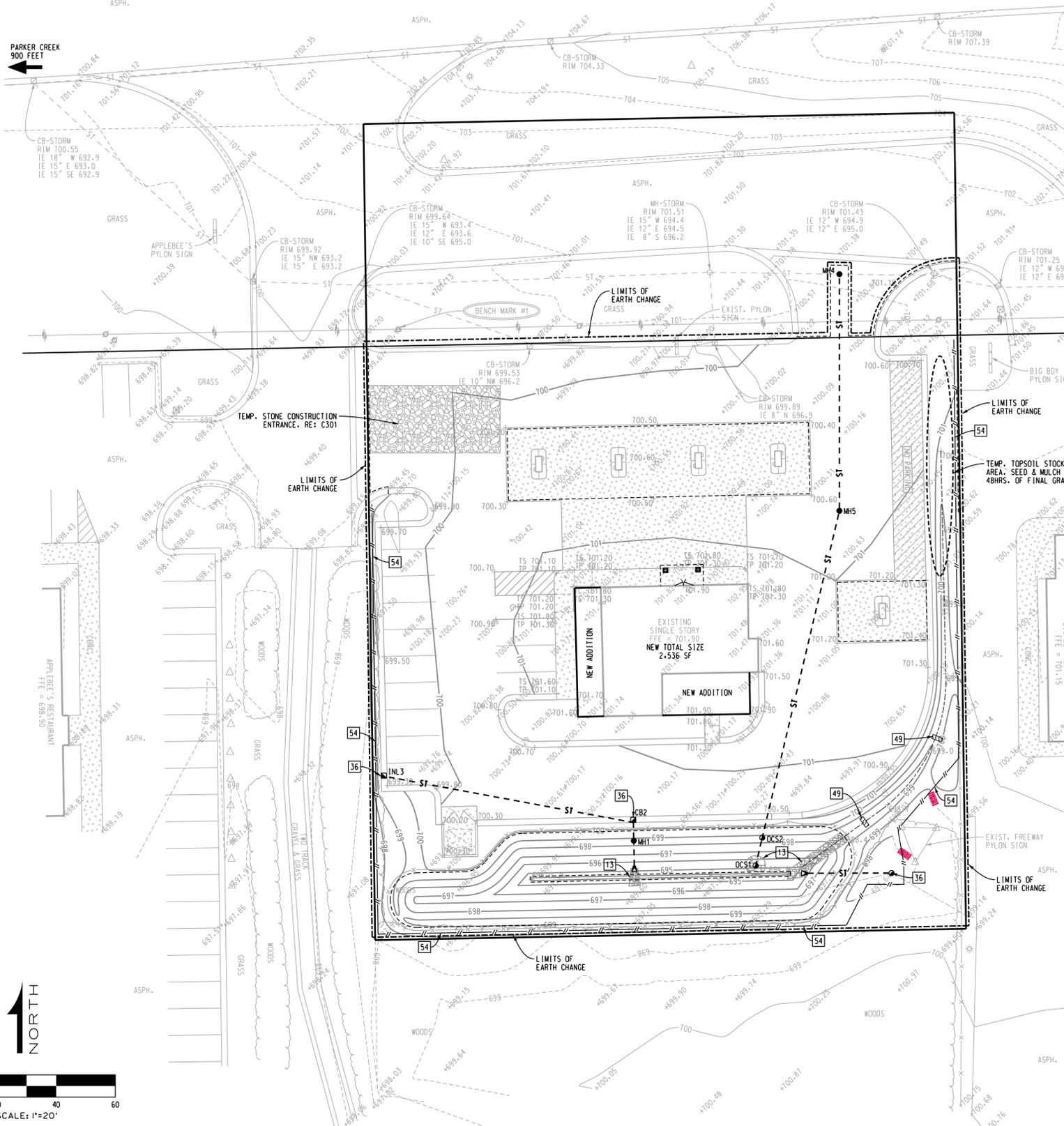
NO SCALE

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.

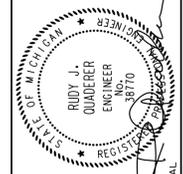
LOCATION:  
LOCATE SILTATION CONTROL FENCE TO INTERCEPT ALL SILT/WATER RUN-OFF FROM THE SITE.  
SUFFICIENT EXTENSION OF EACH FENCE SECTION SHOULD BE INSTALLED (PREFERABLY UPHILL) TO ENSURE RUN-OFF WILL NOT GO AROUND THE ENDS.  
A SERIES OF SILT FENCES MAY BE REQUIRED IF THERE IS A POSSIBILITY THAT THE 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.

54 SILTATION CONTROL FENCE

NO SCALE



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



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**GAS STATION / CONVENIENCE STORE**  
**PROPOSED ADDITION / BLDG. RENOVATION**  
4465 VIENNA ROAD  
VIENNA TOWNSHIP, COUNTY OF GENESEE, STATE OF MICHIGAN

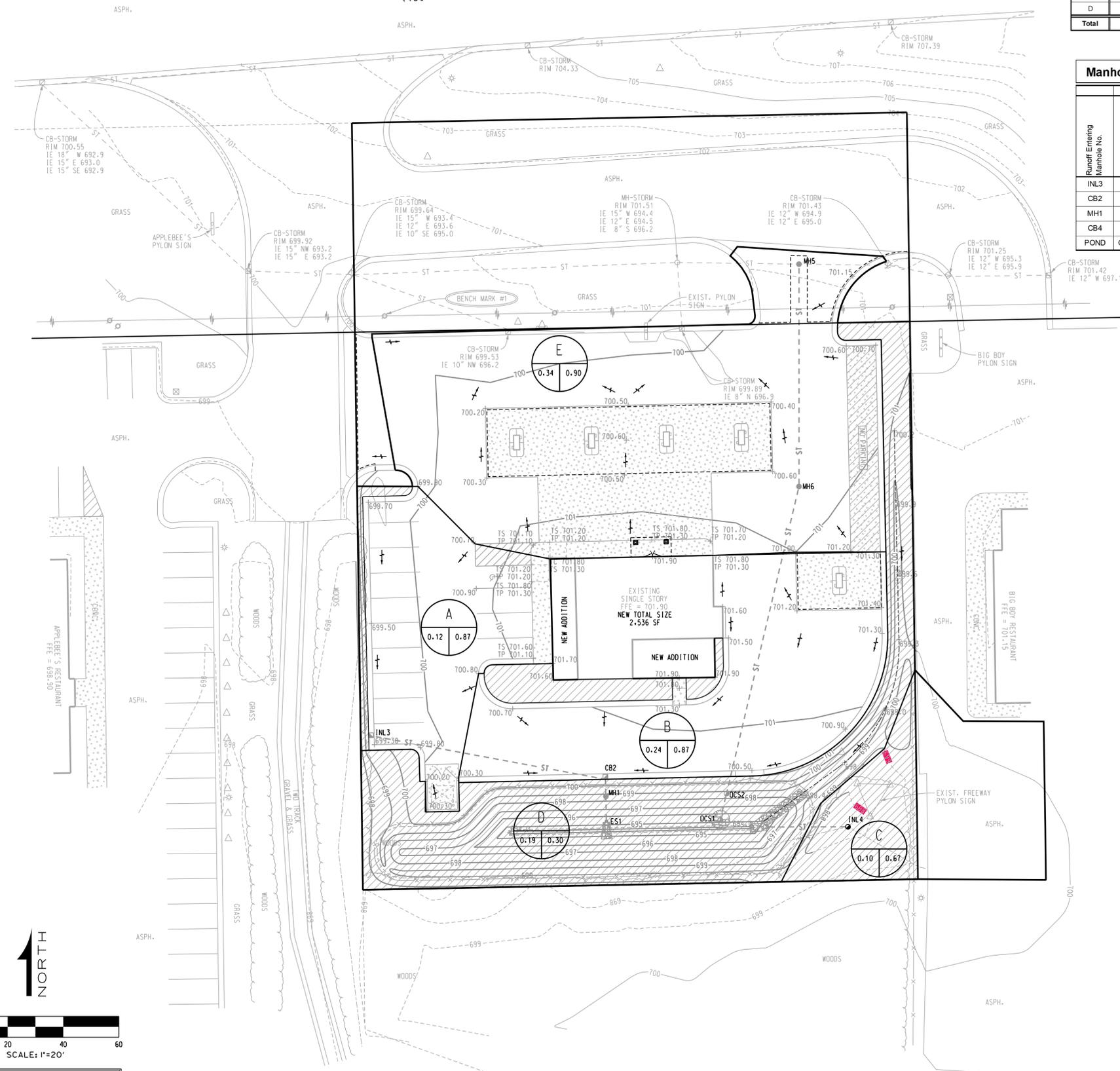
**Griggs Quaderer, Inc.**  
8308 OFFICE PARK DRIVE  
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WWW.GQINCORP.COM  
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CHRIS@GQINCORP.COM

**CIVIL ENGINEERING · LAND SURVEYING**  
**SITE PLANNING**

PHASE: SPA  
JOB NO.: 241101  
C301

40th ANNIVERSARY 2004 - 2024

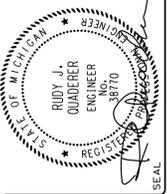
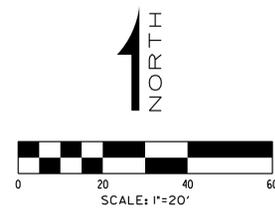
VIENNA ROAD  
(150' WIDE - PUBLIC)



Runoff Coefficient Calculations													
Drainage Area	Pervious			Impervious			Roof Top			Runoff			Drainage Area
	Area (ft <sup>2</sup> )	Area (Acre)	C	Area (ft <sup>2</sup> )	Area (Acre)	C	Area (ft <sup>2</sup> )	Area (Acre)	C	Area (ft <sup>2</sup> )	Area (Acre)	C	
A	288.0	0.01	0.30	4841.0	0.11	0.90	0.0	0.00	0.95	5129.0	0.12	0.87	A
B	778.0	0.02	0.30	7028.0	0.16	0.90	2536.0	0.06	0.95	10342.0	0.24	0.87	B
C	1768.0	0.04	0.30	2774.0	0.06	0.90	0.0	0.00	0.95	4542.0	0.10	0.67	C
D	8170.0	0.19	0.30	0.0	0.00	0.90	0.0	0.00	0.95	8170.0	0.19	0.30	D
<b>Total</b>	<b>11004.0</b>	<b>0.25</b>	<b>0.30</b>	<b>14643.0</b>	<b>0.34</b>	<b>0.90</b>	<b>2536.0</b>	<b>0.06</b>	<b>0.95</b>	<b>28183.0</b>	<b>0.65</b>	<b>0.67</b>	<b>Total</b>

Manholes		Storm Design														
Runoff Entering Manhole No.	To Downstream Manhole No.	Area Designated For Added Area	Area (ft <sup>2</sup> )	Area (Acre)	Imperviousness	Equivalent Area	Accumulative Totals of Equivalent Areas	Time of Concentration (min)	10yr. Rainfall Intensity (in. / hr.)	Quantity of Rainfall (cfs)	Diameter (inch) of Pipe Out of Manhole	Slope (%) of Individual Gradient	Length (ft) of Line Between M.H.'s	Velocity (ft/s) Flowing Full	Time (min) of Flow to Next M.H.	Discharge Capacity (cfs)
INL3	CB2	A	0.12	0.87	0.10	0.10	20.00	3.80	3.38	12 in.	0.32%	87	2.79	0.52	2.19	
CB2	MH1	B	0.24	0.87	0.21	0.31	20.52	3.76	1.16	12 in.	0.32%	6	2.79	0.04	2.19	
MH1	ES1	-	-	-	-	0.31	20.56	3.75	1.16	12 in.	0.32%	9	2.79	0.05	2.19	
CB4	ES2	C	0.10	0.67	0.07	0.07	20.00	3.80	0.27	12 in.	0.32%	30	2.79	0.18	2.19	
POND	OUTLET	D	0.19	0.30	0.06	0.44	20.61	3.75	1.65	12 in.	0.32%	193	2.79	1.15	2.19	

Detention Capacity			
Average End Method			
Contour	Area (ft <sup>2</sup> )	Volume (ft <sup>3</sup> )	Total Volume (ft <sup>3</sup> )
694	74.0		0
Average	229.5	230	
695	385.0		230
Average	704.0	704	
696	1023.0		934
Average	1354.5	1355	
697	1686.0		2288
Average	2142.0	2142	
698	2598.0		4430
Average	3182.5	3183	
699	3767.0		7613
Average	4178.5	4179	
700	4590.0		11791
<b>Total Detention Capacity</b>			<b>11791</b>
Requirement A (Volume)			1380
Requirement A (Elevation)			696.63
Requirement B (Volume)			2956
Requirement B (Elevation)			697.49
Requirement C (Volume)			4544
Requirement C (Elevation)			698.05



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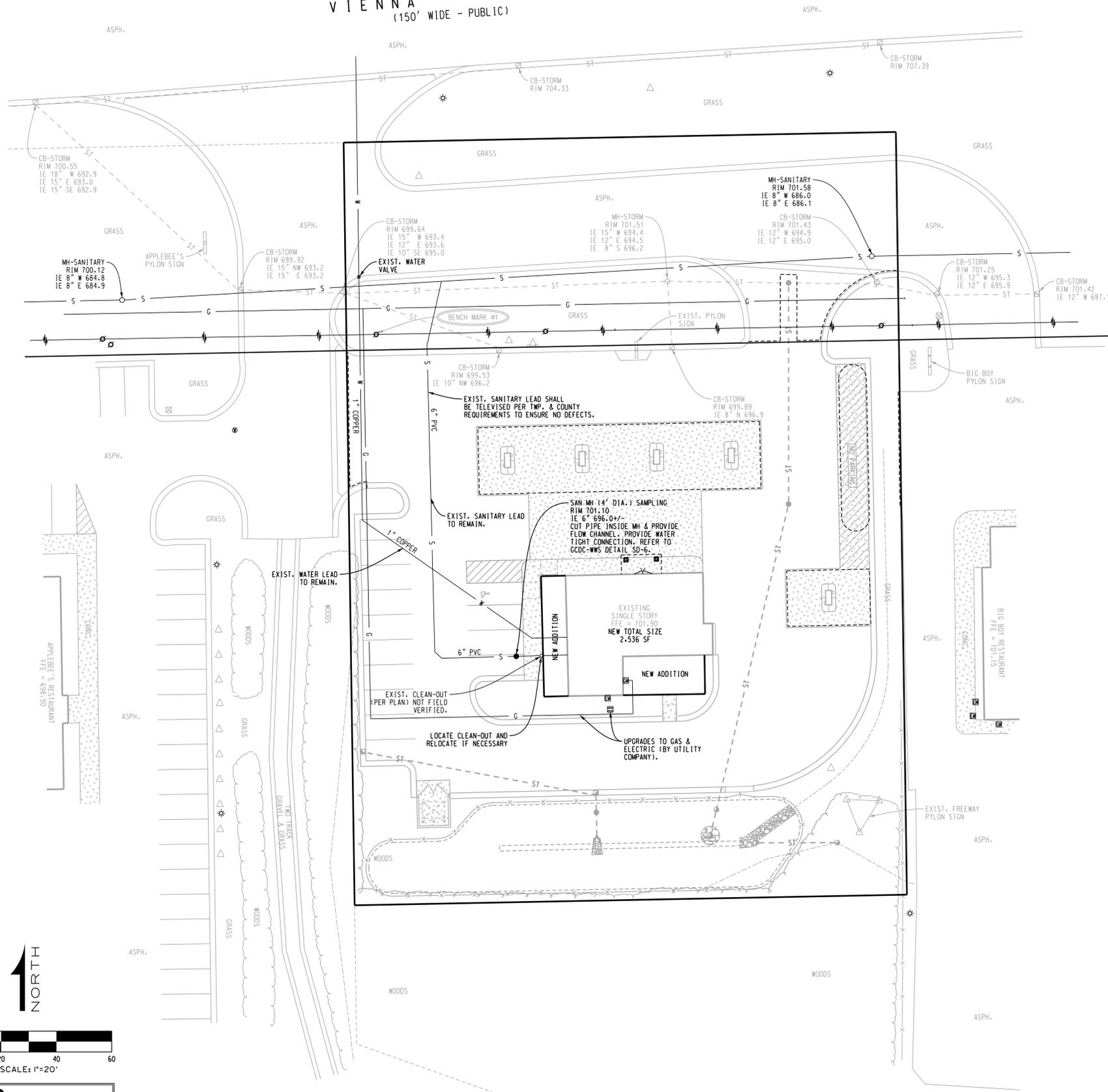
**GAS STATION / CONVENIENCE STORE  
PROPOSED ADDITION / BLDG. RENOVATION**  
4465 VIENNA ROAD  
VIENNA TOWNSHIP, COUNTY OF GENESEE, STATE OF MICHIGAN  
DRAINAGE AREA MAP & STORM SEWER CALCULATIONS

**Griggs Quaderer, Inc.**  
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CIVIL ENGINEERING - LAND SURVEYING  
SITE PLANNING



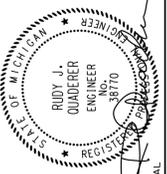
PHASE:	SPA
JOB NO.:	241101
	<b>C302</b>

VIENNA ROAD  
(150' WIDE - PUBLIC)



10 STANDARD NOTES (7th EDITION):

- 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 CCDC-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 CCDC-WWS. N/A
- WATERMAIN LOOPING: ALL PUBLIC WATERMANS SHALL BE LOOPED WHENEVER POSSIBLE. THE PIPE SIZING SHALL BE APPROVED BY CCDC-WWS. N/A
- 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. IN PROGRESS
- 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 PROGRESS
- 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 CCDC-WWS. N/A
- 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 CCDC-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 CCDC-WWS. N/A
- 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 CCDC-WWS APPROVAL, AN S-PERMIT ISSUED, AND APPROVAL FROM THE EGLE PRIOR TO BEGINNING OF CONSTRUCTION. N/A
- 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. N/A
- 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 CCDC-WWS. IN PROGRESS
- 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 CCDC-WWS. CONSTRUCTION SHALL NOT BEGIN UNTIL THESE STATE PERMITS ARE ISSUED. N/A

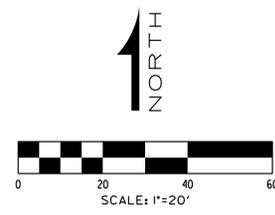


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PHASE: SPA  
 JOB NO.: 241101  
**C400**

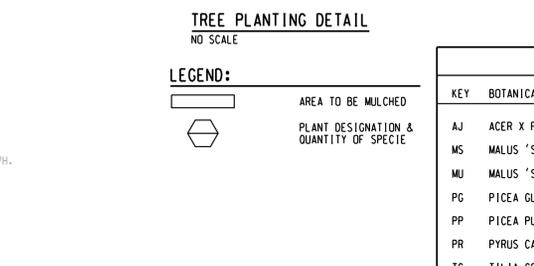
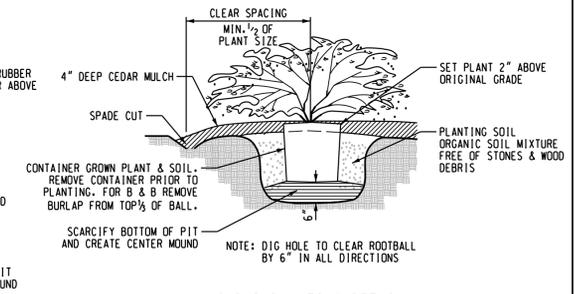
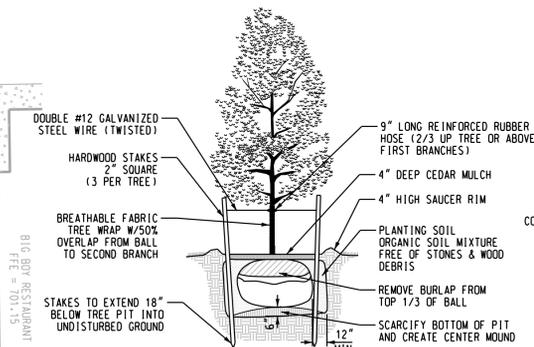
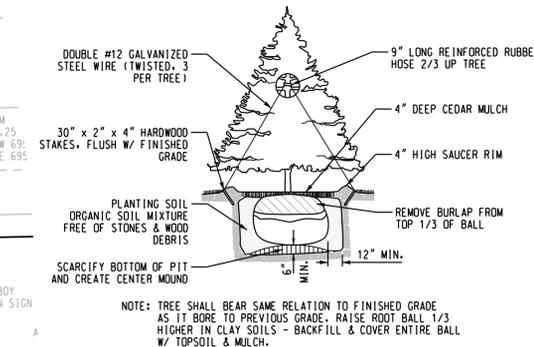


VIENNA ROAD  
(150' WIDE - PUBLIC)

PLANTING REQUIREMENTS		
LOCATION	MINIMUM REQUIREMENT	PROVIDED
ROAD R/W GREENBELT	10' GREENBELT: 11 DECIDUOUS TREES, 20 SHRUBS	9 DECIDUOUS TREES, 2 CONIFEROUS TREES, 34 SHRUBS
PARKING LOT AREA	5% OF TOTAL PARKING AREA TOTAL PARKING AREA = 19,700 SF 5% OF PARKING AREA = 985 SF	2,226 SF OF PARKING AREA (REFER TO SHEET C501)
BUFFER ZONE	NONE REQUIRED	RETAINING/SCREEN WALL W/ DENSE ROW OF ARBORVITAE SHRUBS (TO BE MAINTAINED AS A HEDGEROW 5' HIGH)
BUFFER ZONE	NON REQUIRED	RETAINING/SCREEN WALL W/ DENSE ROW OF ARBORVITAE SHRUBS (TO BE MAINTAINED AS A HEDGEROW 5' HIGH)

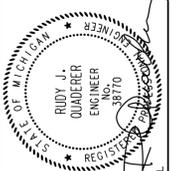
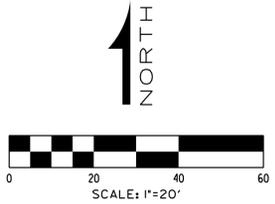
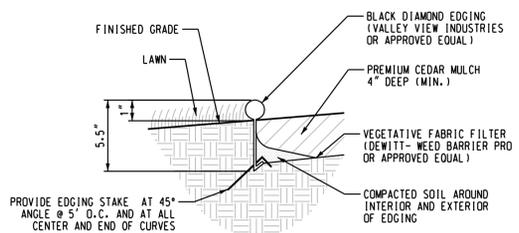
LANDSCAPING NOTES:

- INSTALLATION OF PLANT MATERIAL SHALL BE IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF NURSERYMEN LANDSCAPE STANDARDS LATEST EDITION.
- PRIOR TO BEGIN OF LANDSCAPE WORK, CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON-SITE UTILITIES. CONTRACTOR SHALL CONTACT MISS DIG (811) FOR LOCATIONS OF ALL PRIVATE UTILITIES. ANY DAMAGE OR INTERRUPTIONS OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL RELATED WORK ACTIVITIES WITH OTHER TRADES AND REPORT ANY UNACCEPTABLE WORK CONDITIONS TO OWNER PRIOR TO COMMENCING WORK.
- NUMERICAL VALUE OF PLANT MATERIAL SHOWN SHALL TAKE PRECEDENCE OVER GRAPHIC REPRESENTATION. VERIFY AND REPORT ANY DISCREPANCIES WITH LANDSCAPE ARCHITECT.
- SUBSTITUTIONS OR DEVIATIONS FROM THE LANDSCAPE PLAN MUST BE APPROVED BY THE MUNICIPALITY AND/OR GOVERNING AGENCY PRIOR TO COMMENCING.
- NEW LANDSCAPE BEDS WITHIN PREVIOUS BUILDING AND PAVEMENT AREAS SHALL BE EXCAVATED OF ALL BUILDING MATERIALS AND POOR SOILS TO A MINIMUM DEPTH OF 24" AND BACKFILLED WITH GOOD MEDIUM TEXTURED ORGANIC PLANTING SOIL FREE OF ROCKS LARGER THAN 1".
- PROTECT EXISTING TREES TO REMAIN WITH TEMPORARY FENCING PLACED AT THE DRIP LINE. NO GROUND DISTURBANCE OR STORAGE OF MATERIAL SHALL OCCUR WITHIN THE DRIP LINE LIMITS.
- COORDINATE PLACEMENT OF PLANTS WITH UNDERGROUND UTILITY LOCATIONS. MAKE ADJUSTMENTS AS REQUIRED TO AVOID PLANTING OVER THE UTILITIES. DO NOT PLANT SHADE OR EVERGREEN TREES BELOW OVERHEAD WIRES. IF CONFLICT OCCURS, CONTACT LANDSCAPE ARCHITECT TO ADJUST LOCATION OF TREES.
- BACKFILL ISLANDS FROM SUBGRADE TO THE TOP OF CURB WITH ON-SITE TOPSOIL UNLESS OTHERWISE NOTED ON PLAN. FINISHED GRADE IN CENTER OF ISLAND SHALL BE 4" TO 6" HIGHER THAN TOP OF CURB TO PROVIDE POSITIVE DRAINAGE TO PERIMETER OF CURB ISLAND.
- PLACE 4" THICK BY 4' DIAMETER SHREDDED CEDAR OR CYPRESS BARK MULCH RING AT THE BASE OF ALL NEW TREES IN LAWN AREA. CUT LAWN AREA IN A SMOOTH UNIFORM CIRCULAR LINE.
- ALL GREEN AREAS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE GRADED AND TOPPED WITH MINIMUM 4" DEEP TOPSOIL AND SEEDED & MULCHED. REFER TO PLAN FOR SEED MIXTURE AND APPLICATION RATE.
- ALL EXISTING TREES AND SHRUBS NOTED TO REMAIN SHALL BE PROPERLY PRUNED, TRIMMED, THINNED AND SHAPED BY A QUALIFIED NURSERYMAN OR ARBORIST. ALL DEAD LIMBS AND BRANCHES SHALL BE REMOVED FROM SITE.
- UNLESS NOTED OTHERWISE, LANDSCAPE BEDS ADJACENT TO LAWN AREAS SHALL RECEIVE LANDSCAPE EDGING AS DETAILED ON PLAN.
- ALL LANDSCAPING SHALL BE COMPLETED WITHIN 6 MONTHS OF COMPLETION OF BUILDING.
- ALL STAKING MATERIALS AND WRAPPING SHALL BE REMOVED OFF SITE WITHIN ONE YEAR AFTER INSTALLATION.
- LANDSCAPING ITEMS SHALL NOT INTERFERE WITH THE CLEAR VISION AREAS. TREES WITHIN PARKING LOT ISLANDS SHALL HAVE A CLEAR VIEW OF 4'-6" MINIMUM TO THE FIRST BRANCH AT MATURITY.
- ALL PLANT MATERIALS INCLUDING LAWN AREAS SHALL BE WATERED, FERTILIZED, TRIMMED, MOWED AND GENERALLY MAINTAINED BY THE CONTRACTOR IN A HEALTHY GROWING CONDITION FOR A PERIOD OF 30 DAYS AFTER FINAL COMPLETION AND AFTER LAWN IS CUT FOR FIRST TIME. CONTRACTOR SHALL SUBMIT A ONE (1) YEAR WARRANTY FROM COMPLETION DATE AND BE RESPONSIBLE TO REPLACE ANY DISEASED OR DEAD PLANT MATERIAL WITHIN THAT PERIOD OF TIME WITHOUT ANY COST TO THE OWNER.



TREE SCHEDULE				
KEY	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
AJ	ACER X FREEMANII 'JEFFERSRED'	AUTUMN BLAZE MAPLE	2.5" CAL	1
MS	MALUS 'SNOWDRIFT'	SNOWDRIFT CRABAPPLE	2" CAL	3
MJ	MALUS 'SPRING SNOW'	SPRING SNOW CRABAPPLE	2" CAL	2
PG	PICEA GLAUCA	WHITE SPRUCE	6'-8" HT	1
PP	PICEA PUNGENS	COLORADO SPRUCE	6'-8" HT	1
PR	PYRUS CALLARYANA 'REDSPIRE'	REDSPIRE PEAR	2.5" CAL	1
TC	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LINDEN	2.5" CAL	1

SHRUB SCHEDULE				
KEY	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
AC	AMELANCHIER LAEVIS 'CUMULUS'	CUMULUS SERVICEBERRY	4' HT	1
BA	BERBERIS ATROPURPUREA 'CRIRUZAM'	CRIMSON RUBY BARBERRY	18" HT	4
EA	EUONYMUS ALATAS 'COMPACTUS'	COMPACT BURNING BUSH	24" HT	10
ID	ILEX VERTICILLATA 'JIM DANDY'	JIM DANDY MICHIGAN HOLLY	24" HT	3
LV	LIGUSTRUM VICARYI	GOLDEN VICARY PRIVET	18" HT	15
SF	SPIREA JAPONICA 'GOLDMOUND'	GOLD MOUND SPIREA	NO. 3 CONT	6
VC	VIBURNUM X BURKWOODII	BURKWOOD VIBURNUM	NO. 5 CONT	2



NO.	DATE	SUBJECT
02-10-25	12-03-24	ISSUED TO VIENNA TWP. PRELIM. TOPOGRAPHY

DRAWN	DESIGNED	CHECKED	FIELD
		BRZEZINSKI	GREW RD / CB

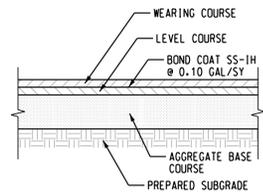
**GAS STATION / CONVENIENCE STORE**  
**PROPOSED ADDITION / BLDG. RENOVATION**  
4465 VIENNA ROAD  
VIENNA TOWNSHIP, COUNTY OF GENESEE, STATE OF MICHIGAN  
SITE LANDSCAPE PLAN

**Griggs Quaderer, Inc.**  
8308 OFFICE PARK DRIVE  
GRAND BLANC, MI 48439  
PH: (610) 695-0154  
WWW.GQINCORP.COM  
RUDY@GQINCORP.COM  
CHRIS@GQINCORP.COM

**CIVIL ENGINEERING - LAND SURVEYING**  
SITE PLANNING



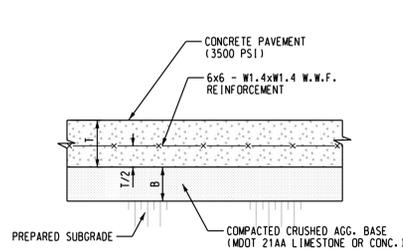
PHASE: SPA  
JOB NO.: 241101  
C500



**TYPICAL PAVEMENT SECTION**  
NO SCALE

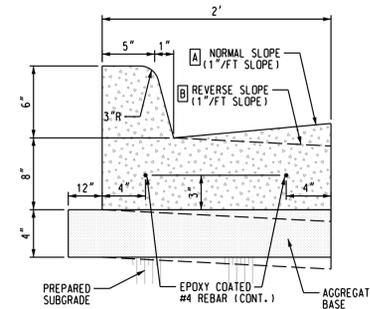
WEARING COURSE - 1.5" MDOT 13A  
LEVEL COURSE - 3" MDOT 3C  
AGGREGATE BASE - 8" MDOT 21AA CRUSHED LIMESTONE

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



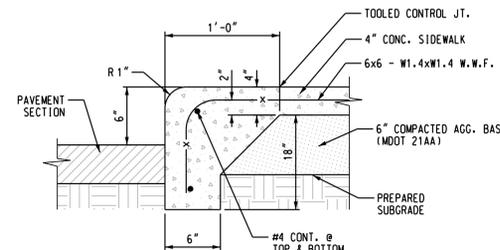
DESIGN:  
PAVEMENT AREA 8" 8" YES  
TRASH ENCLOSURE 8" 8" YES  
SIDEWALK 4" 4" YES

**CONCRETE PAVEMENT SECTION**  
NO SCALE

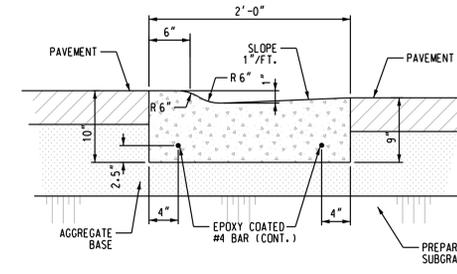


PROVIDE CONTROL JOINTS AT 10 FEET MAXIMUM SPACING AND DOWELED EXPANSION JOINTS AT 100 FEET MAXIMUM INTERVALS AND AT RADIUS POINTS

**CURB & GUTTER DETAIL**  
NO SCALE ON-SITE ONLY

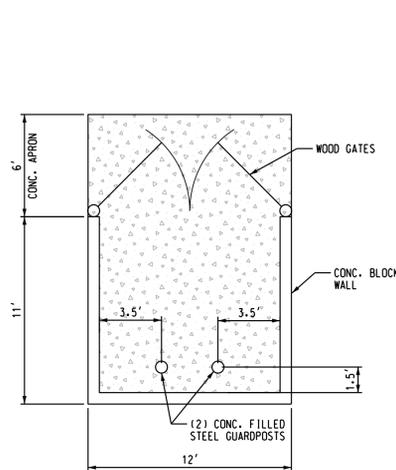


**INTEGRAL CURB & SIDEWALK DETAIL**  
NO SCALE

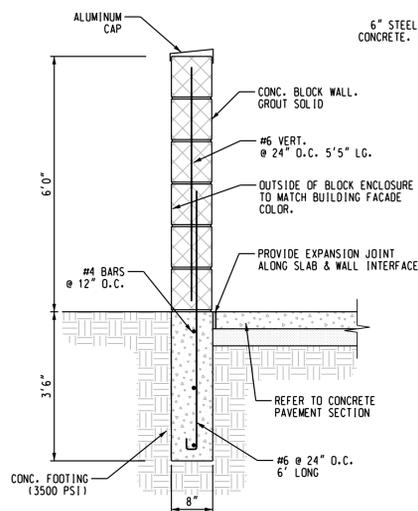


PROVIDE CONTROL JOINTS AT 10 FEET MAXIMUM SPACING AND DOWELED EXPANSION JOINTS AT 100 FEET MAXIMUM INTERVALS AND AT RADIUS POINTS

**GUTTER PAN DETAIL**  
NO SCALE ON-SITE ONLY

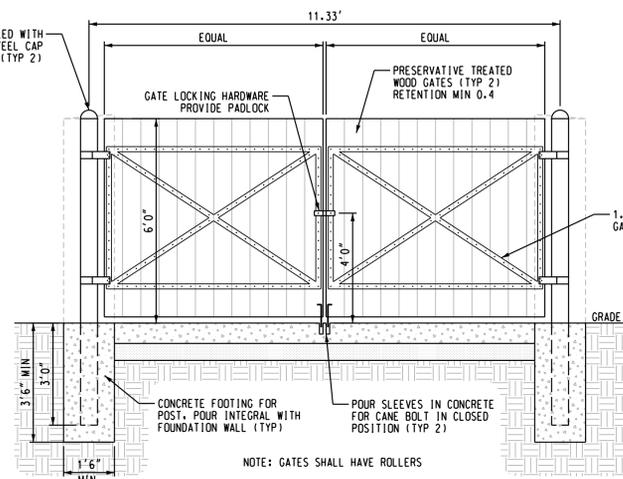


PLAN VIEW



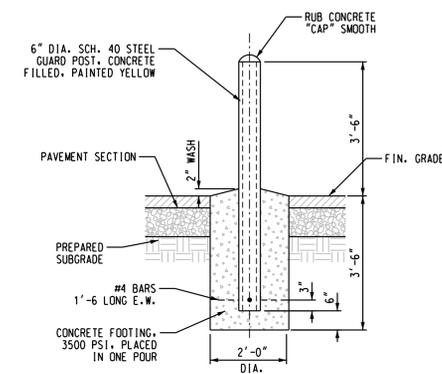
WALL CROSS SECTION

**TRASH ENCLOSURE DETAIL**  
NO SCALE

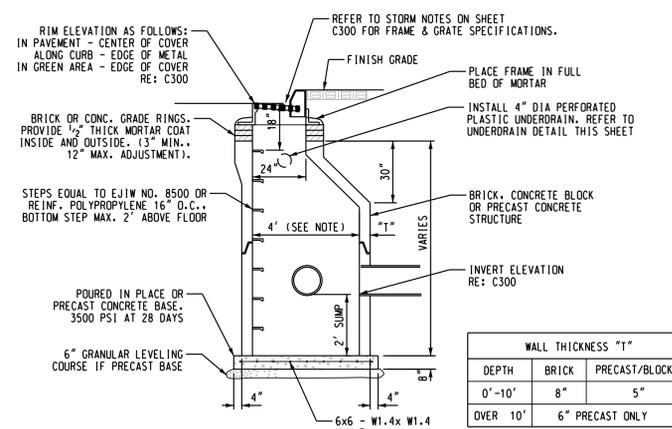


NOTE: GATES SHALL HAVE ROLLERS

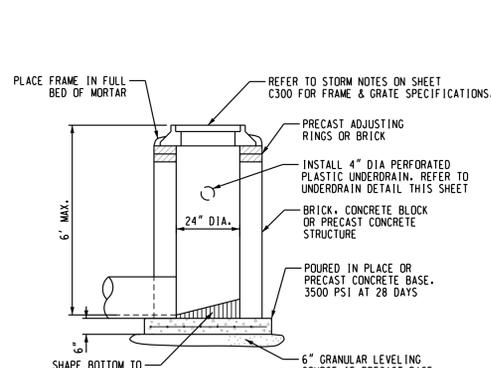
FRONT ELEVATION



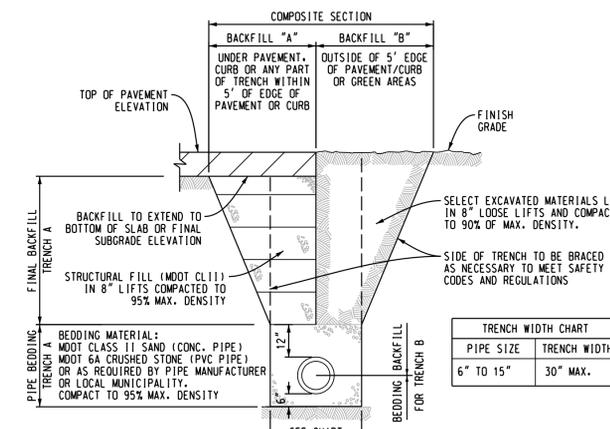
**GUARD POST DETAIL**  
NO SCALE



**CATCH BASIN DETAIL**  
NO SCALE

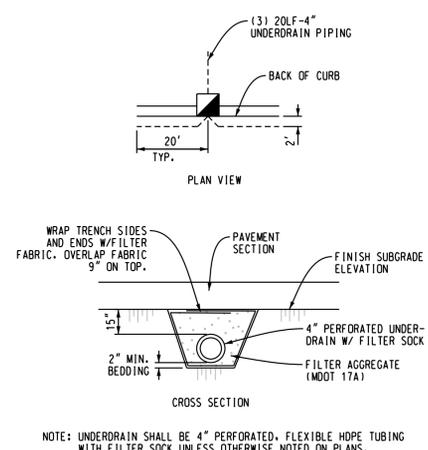


**STORM INLET DETAIL**  
NO SCALE



**PIPE BEDDING AND BACKFILL**  
NO SCALE

TRENCH WIDTH CHART	
PIPE SIZE	TRENCH WIDTH
6" TO 15"	30" MAX.



**UNDERDRAIN (UD)**  
NO SCALE



NO.	DATE	REVISION OR ISSUE
02-10-25	ISSUED TO VIENNA TWP.	
12-03-24	PRELIM. TOPOGRAPHY	

DRAWN	DESIGNED	CHECKED	FIELD
	BRZCZINSKI		GREW RD / CB

**GAS STATION / CONVENIENCE STORE**  
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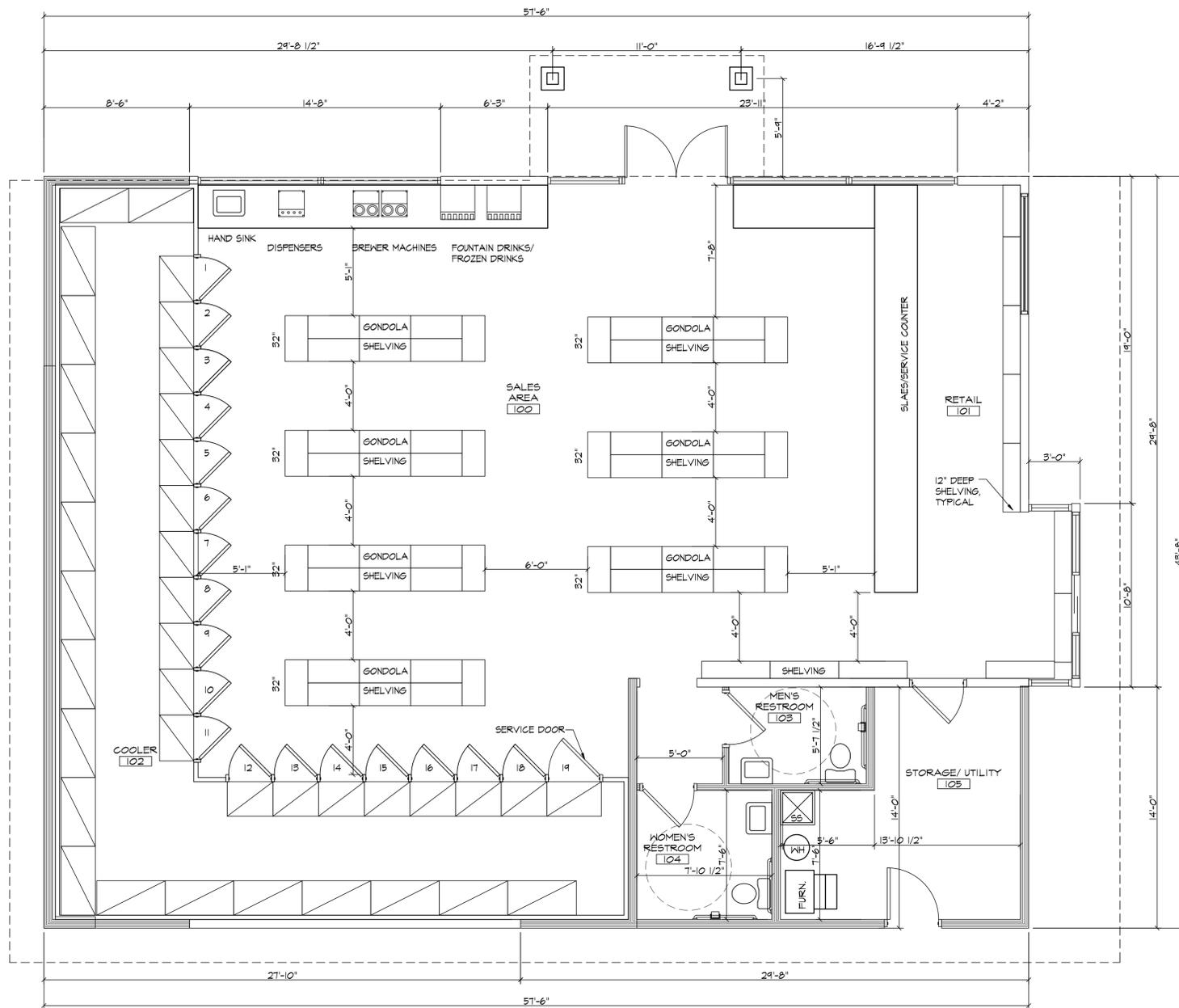
**Griggs Quaderer, Inc.**  
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**CIVIL ENGINEERING - LAND SURVEYING**  
**SITE PLANNING**

20th ANNIVERSARY 2004 - 2024

PHASE: SPA  
JOB NO.: 241101  
**C600**

SITE DETAILS




**CONCEPTUAL FLOOR PLAN**  
 1/4" = 1'-0" 2536 SQ. FT.  
  
 SCALE: 1/4" = 1'-0"

REVISIONS


JOB NO: 024-010

DATE: 2-15-2024

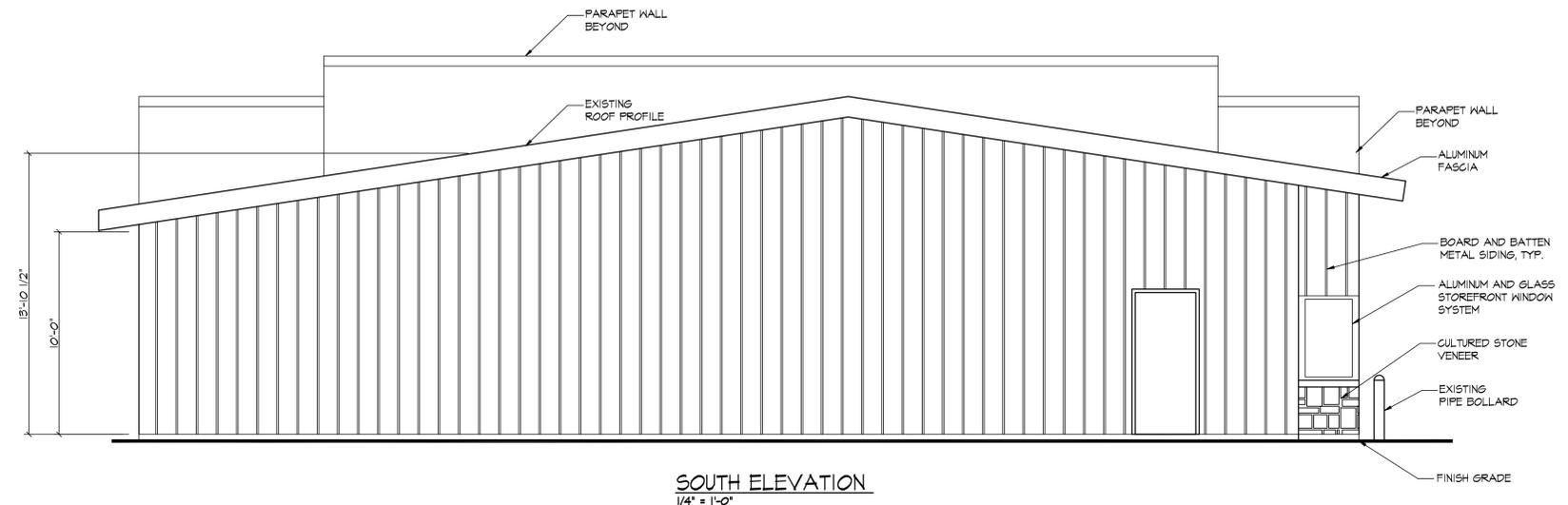
DRAWN BY: JKC

SCALE: AS NOTED

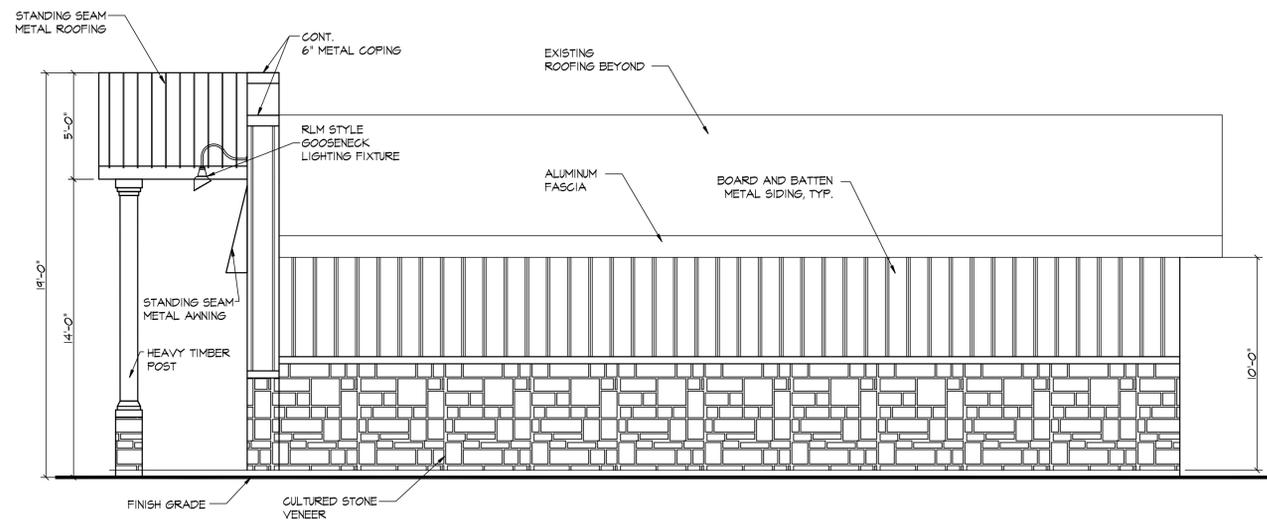
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REVISIONS

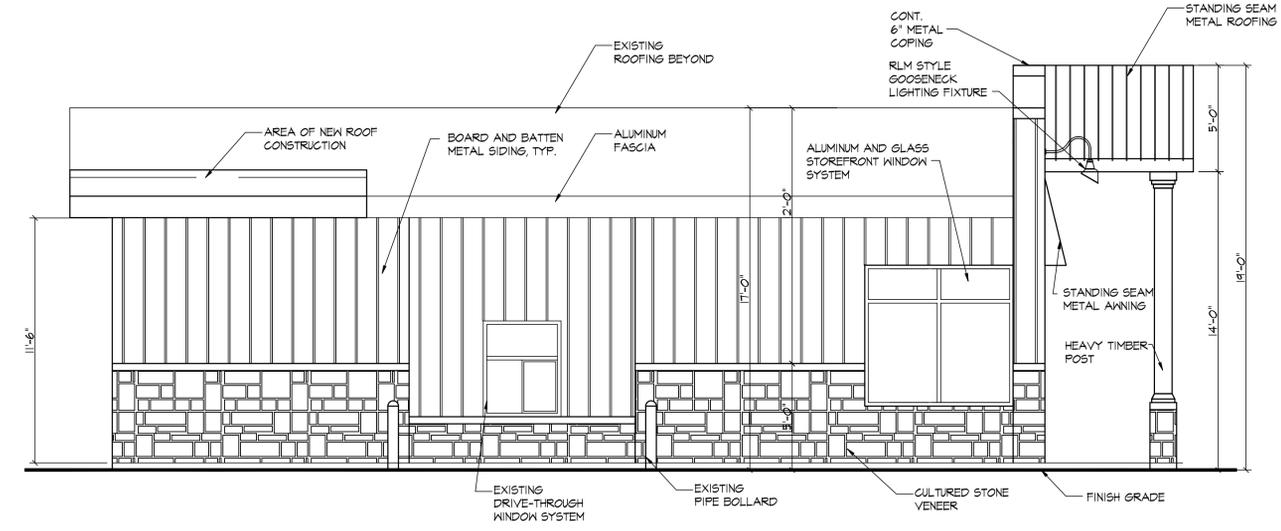
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 DATE: 2-15-2024  
 DRAWN BY: JKC  
 SCALE: AS NOTED  
 SHEET NO:



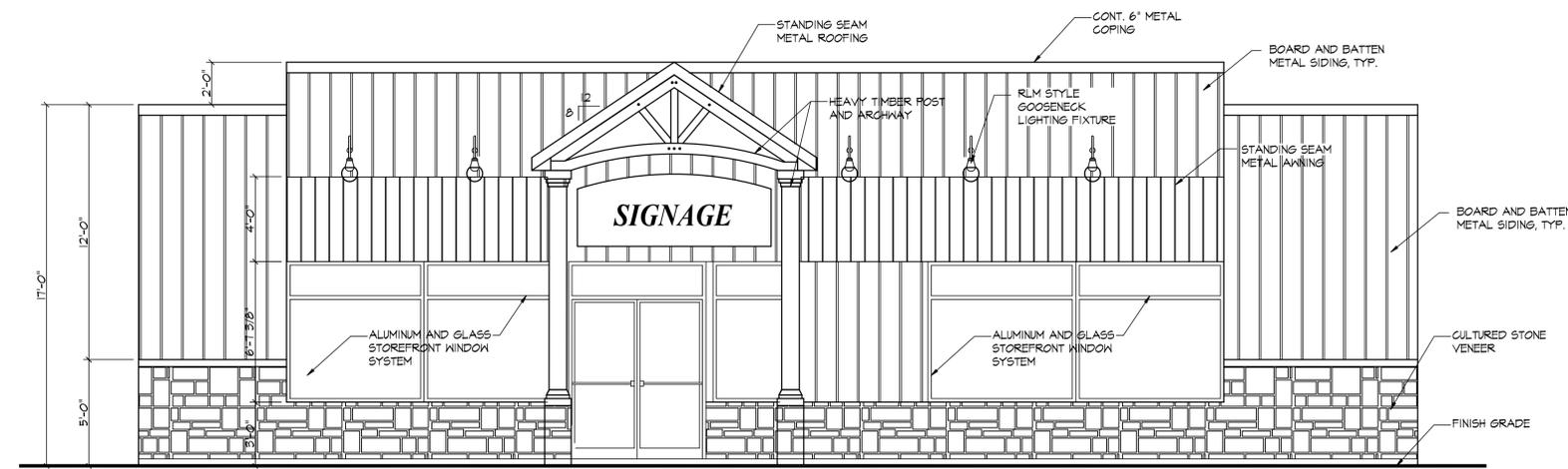
**SOUTH ELEVATION**  
 1/4" = 1'-0"



**WEST ELEVATION**  
 1/4" = 1'-0"

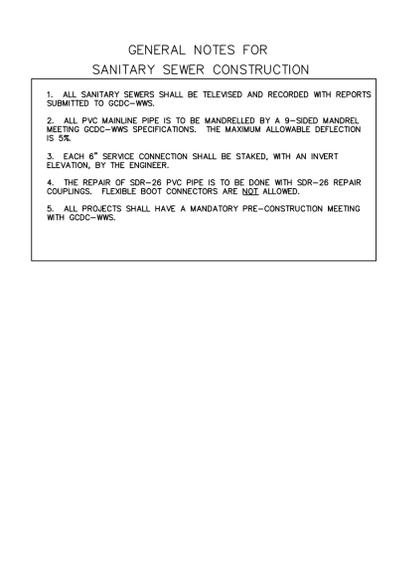
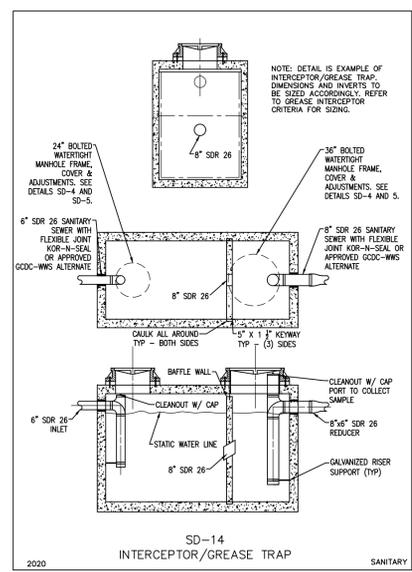
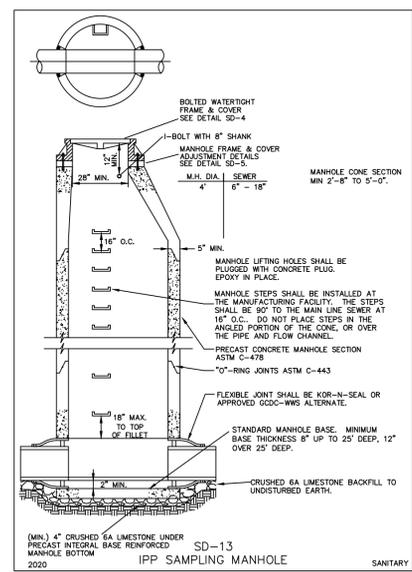
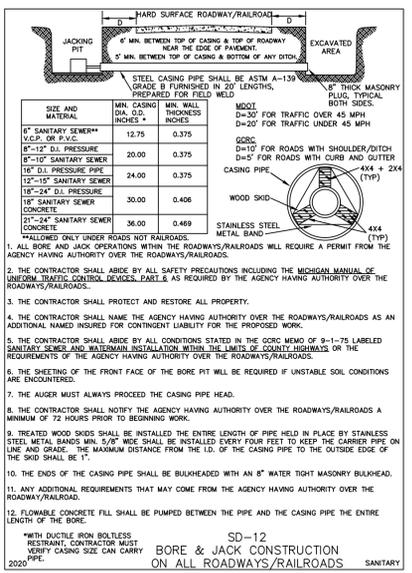
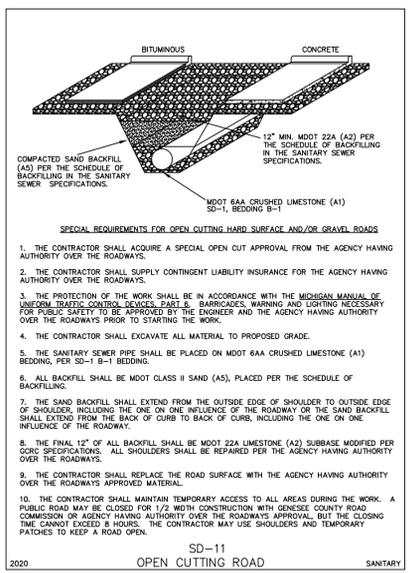
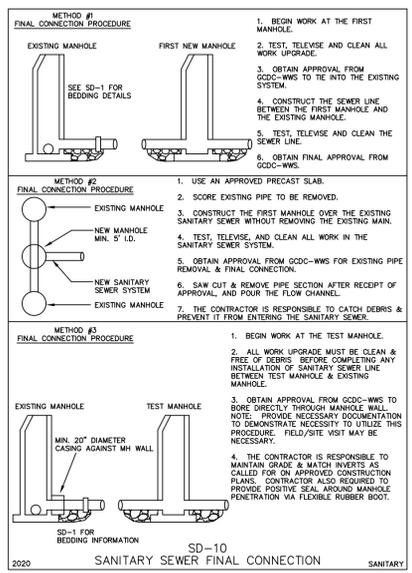
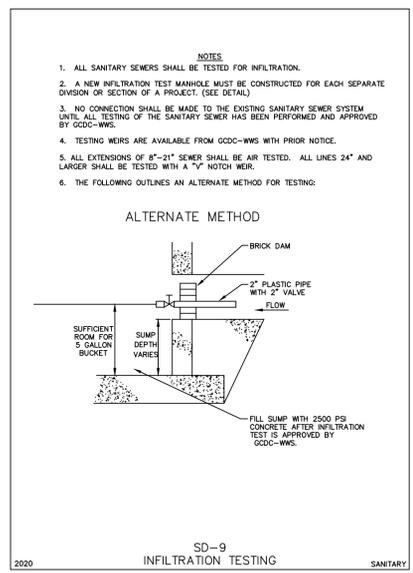
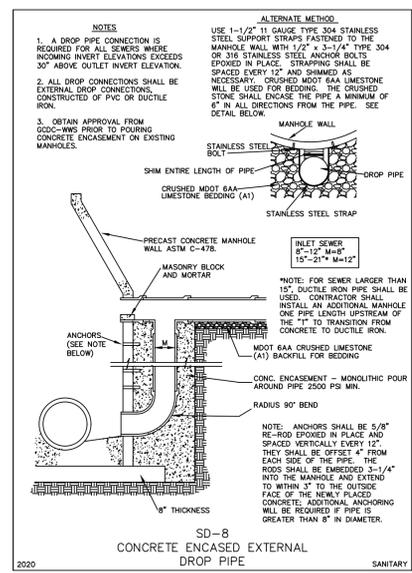
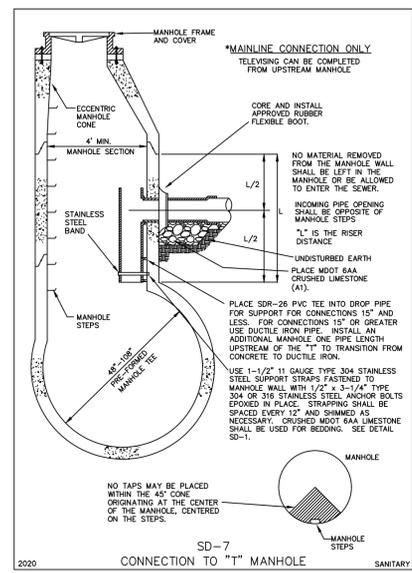
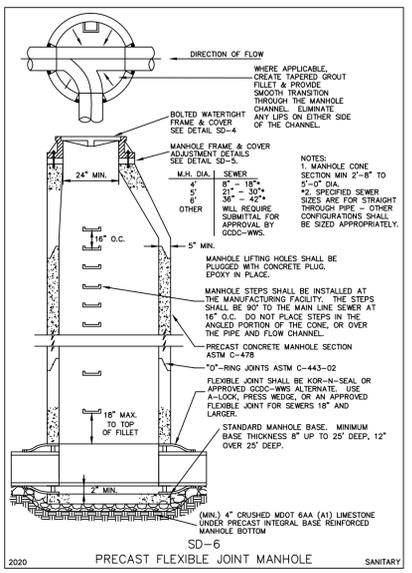
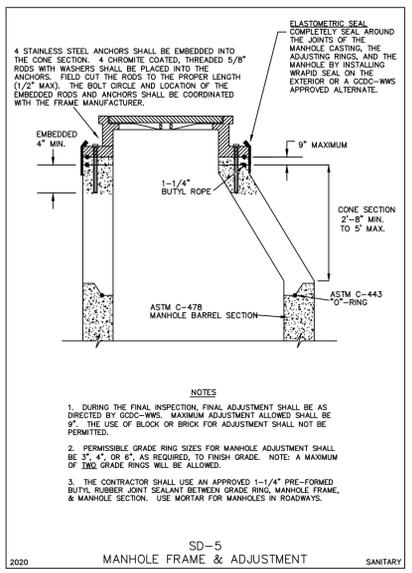
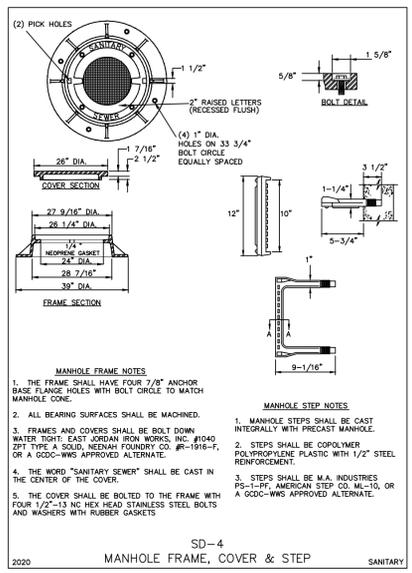
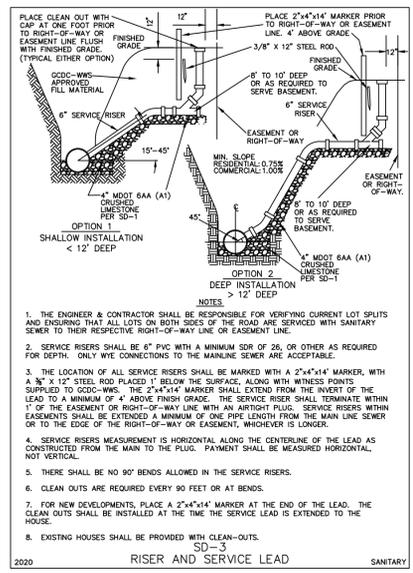
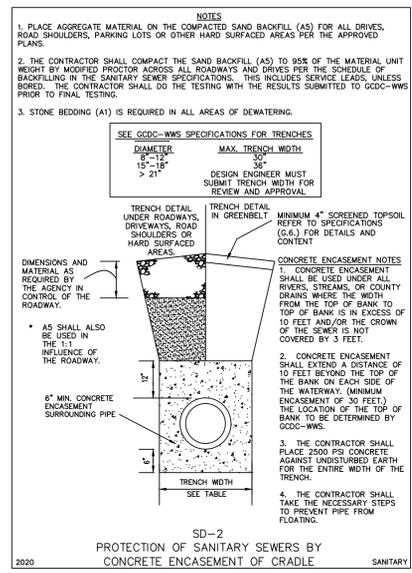
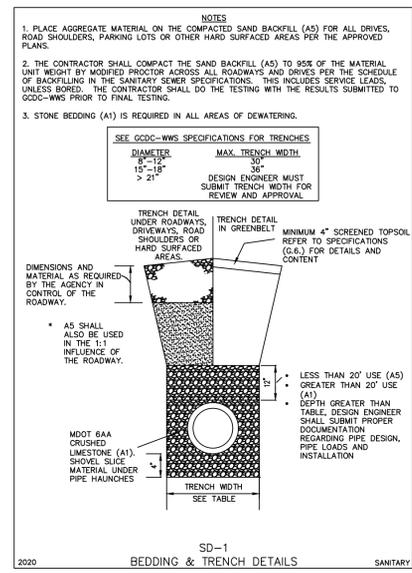


**EAST ELEVATION**  
 1/4" = 1'-0"



**NORTH ELEVATION**  
 1/4" = 1'-0"





## GENERAL CONSTRUCTION NOTES

### 1. STANDARD SPECIFICATIONS & DETAILS

ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE LATEST GENEESE COUNTY STANDARD SPECIFICATIONS AND STANDARD DETAILS FOR SANITARY SEWER, PRESSURE PIPE, AND PUMP STATION CONSTRUCTION. ANY DEVIATIONS FROM THE GDCD-WWS APPROVED PLANS WILL NOT BE PERMITTED. IF IT BECOMES NECESSARY TO REVISE THE PLAN, THEY SHALL BE RESUBMITTED TO GDCD-WWS FOR APPROVAL.

### 2. PRE-CONSTRUCTION MEETING

A PRE-CONSTRUCTION MEETING SHALL BE HELD AT THE GDCD-WWS OFFICE PRIOR TO BEGINNING THE WORK. NO PRE-CONSTRUCTION MEETING SHALL BE HELD PRIOR TO OBTAINING THE STATE CONSTRUCTION PERMITS. THE MEETING'S TIME, PLACE, AND ATTENDEES SHALL BE ARRANGED BY THE ENGINEER FOR THE PROJECT. GDCD-WWS, GDCD-SWM, THE MUNICIPALITY, THE AGENCY HAVING AUTHORITY OVER THE ROADWAYS, PROJECT OWNER, CONTRACTOR, AND ANY AFFECTED UTILITIES SHALL BE INVITED, AS A MINIMUM, TO THE PRE-CONSTRUCTION MEETING.

### 3. MISS DIG 811 UTILITY ALERT

THREE (3) WORKING DAYS PRIOR TO BEGINNING THE WORK, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT MISS DIG 811 UTILITY PROTECTION SERVICE (1-800-482-7771 OR 811) TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. ALL UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE PROPERLY REPAIRED IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS.

### 4. FIELD LOCATION OF UTILITIES

PRIOR TO BEGINNING THE WORK, THE CONTRACTOR SHALL BE REQUIRED TO EXPOSE ALL EXISTING UTILITIES THAT CROSS THE PROPOSED CONSTRUCTION, SO THE ENGINEER MAY DETERMINE IF A VERTICAL CONFLICT EXISTS BETWEEN AN EXISTING UTILITY AND THE PROPOSED WORK. ALL LABOR REQUIRED TO UNCOVER THE EXISTING UTILITY SHALL BE CONSIDERED INCLUDED IN THE LINEAL FEET OF PRESSURE PIPE OR SANITARY SEWER PIPE INSTALLED. THE CONTRACTOR SHALL VERIFY THE DEPTH AND HORIZONTAL LOCATIONS OF ALL UTILITIES IN SUFFICIENT TIME SUCH THAT ANY CONFLICTS CAN BE RESOLVED BEFORE WORK IS STARTED IN THAT PORTION OF THE PROJECT. THE CONTRACTOR SHALL ARRANGE FOR THE VARIOUS UTILITY OWNERS TO LOCATE, REMOVE, AND REPLACE, OR RELOCATE THEIR FACILITIES. ALL COSTS FOR THIS SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PROJECT.

### 5. SUBSURFACE SOIL CONDITIONS

PRIOR TO BIDDING, THE CONTRACTOR AND SUBCONTRACTORS SHALL MAKE A PERSONAL INVESTIGATION OF THE SITE AND EXISTING SURFACE AND SUBSURFACE CONDITIONS. THE CONTRACTOR SHALL ACQUAINT ITSELF WITH CONDITIONS OF THE WORK AREA. THE CONTRACTOR IS ADVISED TO DETERMINE THE SUBSURFACE SOIL AND GROUND WATER CONDITIONS. DEWATERING, IF DETERMINED NECESSARY BY THE CONTRACTOR AND IF NOT SPECIFICALLY REQUIRED BY THE CONTRACT DOCUMENTS, WILL BE INCIDENTAL TO THE COST OF INSTALLATION.

### 6. PERMITS AND FEES

THE CONTRACTOR/DEVELOPER SHALL OBTAIN ALL PERMITS, INCLUDING THE PAYMENT OF ANY FEES OR BONDS, REQUIRED BY ANY FEDERAL, STATE, COUNTY, LOCAL, OR PRIVATE ORGANIZATIONS PRIOR TO COMMENCING WORK.

### 7. GDCD-WWS INSPECTION FEES

THE DEVELOPER SHALL PAY FOR ALL SANITARY SEWER AND PRESSURE PIPE INSPECTION FEES AND WATER USAGE FEES PRIOR TO THE PRE-CONSTRUCTION MEETING.

### 8. SOIL EROSION CONTROL, PART 91 OF P.A. 451 OF 1994

THE CONTRACTOR/DEVELOPER SHALL COMPLY WITH ALL PROVISIONS OF PART 91, ACT 451 OF P.A. 1994 FOR SOIL EROSION AND SEDIMENTATION CONTROL AND WILL BE RESPONSIBLE FOR ALL MAINTENANCE UNTIL THE FINAL ACCEPTANCE OF THE PERMANENT CONTROL MEASURES BY GDCD-WWS. THE CONTRACTOR/DEVELOPER IS REQUIRED BY GDCD-WWS TO PREPARE AND SUBMIT A SOIL EROSION AND SEDIMENTATION CONTROL PLAN IN ORDER TO OBTAIN THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT AND TO PAY ANY APPLICATION FEES AND BOND FEES NECESSARY TO OBTAIN THE PERMIT.

### 9. STATE CONSTRUCTIONS PERMITS

THE CONSTRUCTION OF PUBLIC SANITARY SEWERS OR PRESSURE PIPES SHALL NOT BEGIN UNTIL THE REQUIRED STATE CONSTRUCTION PERMITS HAVE BEEN OBTAINED. NOTE: SOIL EROSION AND CONSTRUCTION PLAN APPROVAL ARE SEPARATE APPROVALS AT GDCD-WWS.

### 10. ROADWAY PERMITS

A PERMIT FROM THE AGENCY HAVING AUTHORITY OVER THE ROADWAYS IS REQUIRED FOR ALL CONSTRUCTION WITHIN ANY ROAD RIGHT-OF-WAY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL NECESSARY PERMITS, POST ALL NECESSARY BONDS, PAY ALL FEES, AND OBTAIN ANY REQUIRED INSURANCES IN CONNECTION THERE WITH.

### 11. WORK OBSERVATION

ALL WORK SHALL BE PERFORMED UNDER THE OBSERVATION OF A CONSTRUCTION OBSERVER FROM GDCD-WWS OR LOCAL MUNICIPALITY HAVING JURISDICTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OBSERVING AGENCIES THREE (3) WORKING DAYS OR 72 HOURS PRIOR TO STARTING CONSTRUCTION TO ARRANGE FOR ON-SITE OBSERVATION AND TESTING. CUT SHEETS FOR ALL PIPE INSTALLATION AND REDITCHING SHALL BE PROVIDED TO THE GDCD-WWS CONSTRUCTION OPERATOR'S SUPERVISOR A MINIMUM OF 24 HOURS PRIOR TO STARTING THE WORK WITH RESPECT TO THAT UTILITY. GDCD-WWS OR THE LOCAL MUNICIPALITY HAVING JURISDICTION SHALL BE NOTIFIED FOR A FINAL INSPECTION.

### 12. CONTRACTOR'S MINIMUM WAGE & USE OF IN-COUNTY LABOR

THE CONTRACTOR SHALL EMPLOY COMPETENT AND SKILLED WORKERS THROUGHOUT THE COURSE OF THE PROJECT. THE CONTRACTOR SHALL STRIVE TO USE GENEESE COUNTY RESIDENTS WHEN FEASIBLE. THE CONTRACTOR SHALL BE REQUIRED TO PAY THE PREVAILING WAGE RATES AS ESTABLISHED BY THE BUILDING AND CONSTRUCTION TRADES DEPARTMENT OF THE AMERICAN FEDERATION OF LABOR WHICH APPLIES TO THE COUNTY OF GENEESE. THESE RATES CAN BE OBTAINED BY CONTACTING THE MICHIGAN DEPARTMENT OF CONSUMER AND INDUSTRIAL SERVICES.

### 13. MIOSHA SAFETY REQUIREMENTS

ALL WORK, WORK PRACTICE, AND MATERIALS SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL SAFETY GUIDELINES, OCCUPATION, HEALTH AND ENVIRONMENTAL REGULATIONS, AND ALSO NFPA AND ANSI CODES AS APPLICABLE. ALL WORK INSIDE A CONFINED SPACE, SUCH AS MANHOLES OR OTHER UNDERGROUND STRUCTURES, SHALL BE COORDINATED WITH THE UTILITY OWNER, AND ALL WORKER SAFETY REQUIREMENTS STRICTLY ENFORCED. THE CONTRACTOR SHALL HAVE ITS SAFETY PLAN ON FILE WITH GDCD-WWS AND ONE COPY ON SITE AT ALL TIMES.

### 14. ROADWAY REQUIREMENTS FOR UTILITY CONSTRUCTION

THE CONTRACTOR SHALL COMPLY WITH ALL OF THE REQUIREMENTS OF THE GCRC OR LOCAL MUNICIPALITY REGARDING THE CONSTRUCTION OF PRESSURE PIPE AND SEWER MAINS, MAINTAINING TRAFFIC, BARRICADING, BORING, BACKFILLING AND RESTORATION WITHIN THE ROAD RIGHT-OF-WAY.

### 15. OPEN CUTTING OF COUNTY/LOCAL ROADS

WHEN OPEN CUTTING OF GRAVEL OR HARD SURFACED ROADS ARE INCORPORATED INTO THE PROJECT, THE CONTRACTOR SHALL OBTAIN THE APPROVAL AND COMPLY WITH ALL OF THE REQUIREMENTS OF THE AGENCY HAVING AUTHORITY OVER THE ROADWAYS, AND BY THE SPECIFICATIONS OF GDCD-WWS.

### 16. GRAVEL ROAD CONTAMINATION BY THE WORK

IF IT IS DETERMINED BY THE AGENCY HAVING AUTHORITY OVER THE ROADWAYS THAT GRAVEL ROADS HAVE BECOME CONTAMINATED DURING THE WORK, THE ROAD MUST BE REPAIRED PER THE AGENCY HAVING AUTHORITY OVER THE ROADWAYS. WHERE THE EXISTING ROAD GRAVEL IS REMOVED BECAUSE OF THE WORK, ALL WORK AND MATERIALS SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY HAVING AUTHORITY OVER THE ROADWAYS.

### 17. RESTORATION OF GRAVEL SHOULDERS

IF IT IS DETERMINED BY THE AGENCY HAVING AUTHORITY OVER THE ROADWAYS THAT GRAVEL SHOULDERS HAVE BEEN CONTAMINATED BY THE WORK, THE CONTRACTOR SHALL RE-GRAVEL PER THE AGENCY HAVING AUTHORITY OVER THE ROADWAYS. ALL WORK AND MATERIALS SHALL MEET THE REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY HAVING AUTHORITY OVER THE ROADWAYS.

### 18. COMPACTED GRANULAR BACKFILL FOR ROADWAYS, DRIVES, ETC.

ALL TRENCH EXCAVATION WITHIN A ONE-ON-ONE INFLUENCE OF A ROADWAY, DRIVEWAY, DRIVEWAY, PARKING LOTS OR AS OTHERWISE NOTED ON THE PLANS, SHALL BE BACKFILLED WITH COMPACTED SAND MDOT CLASS II (A5) PER THE SCHEDULE OF BACKFILLING, FOUND IN THE SPECIFICATIONS. IN ADDITION, SEE THE SPECIFICATIONS FOR THE REQUIREMENTS FOR THE COMPACTION PLAN. THIS STANDARD ALSO INCLUDES SERVICE LEADS UNLESS BORED.

### 19. SURFACE RESTORATION

ALL DISTURBED AREAS SHALL BE COMPLETELY RESTORED IN STRICT COMPLIANCE WITH THE SOIL EROSION AND SEDIMENTATION SPECIFICATIONS AND TO THE SATISFACTION OF GDCD-WWS, GDCD-SWM, GCRC, MDOT, THE LOCAL MUNICIPALITY, AND THE PROPERTY OWNER. ALL COSTS FOR THE CLEANUP, RESTORATION WORK, AND OTHER INTERMEDIATE OPERATIONS INCLUDING BUT NOT LIMITED TO, CONSTRUCTION SIGNAGE, STRIPES, SWEEPING, AND MAINTAINING EXISTING UTILITIES, SHALL BE CONSIDERED INCLUSIVE AND AT NO ADDITIONAL COST TO GDCD-WWS. AREAS DISTURBED DURING THE WORK SHALL RECEIVE A 4" APPLICATION OF SCREENED TOPSOIL, FERTILIZED AND SEED. ALL EXCESS MATERIALS, DEBRIS, AND SIMILAR ITEMS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF IN ACCORDANCE WITH THE LAW. ALL GROUND SURFACES SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER PRIOR TO FINAL APPROVAL.

### 20. TRAFFIC CONTROL

THE CONTRACTOR SHALL EXECUTE THE WORK IN A MANNER SUCH THAT TRAFFIC IS MAINTAINED AND ACCESS IS PROVIDED TO ALL RESIDENCES, BUSINESSES, AND COMMERCIAL ESTABLISHMENTS. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS AND THE LATEST EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 6, AND THE REQUIREMENTS OF THE AGENCY HAVING AUTHORITY OVER THE ROADWAYS, OR AS DIRECTED BY THE ENGINEER.

### 21. SIGNING AND BARRICADING

SIGNING AND BARRICADING SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE DETAILS ON THE PLANS, THE LATEST EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 6, AND THE REQUIREMENTS OF THE AGENCY HAVING AUTHORITY OVER THE ROADWAYS. SIGNS AND BARRICADES LEFT IN PLACE AFTER DARK SHALL BE LIGHTED.

### 22. PROTECTION OF HAZARDOUS AREAS

EXCAVATION AND HAZARDOUS AREAS SHALL BE PROTECTED BY BARRICADES, SNOW FENCE, OR OTHER APPROPRIATE MEANS. BARRICADES LEFT IN PLACE AFTER DARK SHALL BE LIGHTED.

### 23. STORM WATER DRAINAGE DURING THE WORK

THE CONTRACTOR/DEVELOPER SHALL OBTAIN THE SERVICES OF A CERTIFIED STORM WATER OPERATOR AND COMPLY WITH THE PROVISIONS OF THE NPDES AND SESC PERMITS. THE CONTRACTOR SHALL MAINTAIN DITCH DRAINAGE DURING CONSTRUCTION AND SHALL NOT OBSTRUCT SUMP PUMP LEADS DISCHARGING INTO THE DITCH. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT ALL STORM SEWER FACILITIES, SUCH AS CATCH BASINS AND CULVERTS, DURING THE WORK. CULVERTS AND CATCH BASINS CONTAMINATED DURING THE WORK SHALL BE CLEANED.

### 24. UTILITY INFORMATION

UTILITY INFORMATION IS PROVIDED IN ACCORDANCE WITH THE LOCATIONS PROVIDED BY UTILITY OWNERS. THE ENGINEER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION OR THE LOCATION AT WHICH THESE SERVICES EXIST. DIFFERING FIELD CONDITIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND GDCD-WWS.

### 25. EXISTING UTILITIES

THE CONTRACTOR SHALL MAINTAIN ALL EXISTING SANITARY SEWER, PRESSURE PIPE, OR STORM SEWER CONNECTIONS IN SERVICE THROUGHOUT THE WORK. THE CONTRACTOR SHALL PROVIDE OR ARRANGE FOR THE TEMPORARY SUPPORT OF GAS MAIN, TELEPHONE, FIBER OPTIC CABLE, PRESSURE PIPE, SANITARY SEWER, STORM SEWER, AND UTILITY POLES WHERE NEEDED. ALL STORM SEWERS DAMAGED OR REMOVED, OR RELOCATED BY THE CONTRACTOR, SHALL BE REPLACED WITH THE SAME SIZE AND QUALITY PIPE BY THE CONTRACTOR AT CONTRACTOR'S SOLE EXPENSE. ALL UTILITIES UNDERMINED BY THE EXCAVATION SHALL HAVE COMPACTED SAND BACKFILL PLACED UNDER THEM, UNLESS MDOT 6A CRUSHED LIMESTONE (A1) OR MDOT 22A GRAVEL (A2) IS SHOWN ON THE CONSTRUCTION PLANS. ALL WORK, INCLUDING THE REBORING OF SANITARY SEWER SERVICE LEADS AND WATERMAIN LEADS TO ACCOMMODATE CONSTRUCTION TO CLEAR EXISTING SERVICES, SHALL BE INCLUSIVE TO THE PROJECT.

### 26. SHOP DRAWINGS

PRIOR TO THE START OF THE WORK, THE CONTRACTOR SHALL FURNISH TO GDCD-WWS SHOP DRAWINGS AND/OR CATALOG CUTS FOR ALL MATERIALS AND EQUIPMENT ITEMS PER THE STANDARD SPECIFICATIONS.

### 27. MATERIAL CERTIFICATIONS

PRIOR TO THE START OF THE WORK, THE CONTRACTOR SHALL FURNISH TO GDCD-WWS MATERIALS CERTIFICATES FOR ALL MATERIALS USED DURING THE WORK.

### 28. NON-STOPPAGE CLAUSE

THE CONTRACTOR SHALL BE REQUIRED TO COMPLETE ALL WORK IN AN EXPEDITIOUS MANNER AND SHALL NOT STOP THE WORK FOR EXTENDED PERIODS ONCE THE WORK HAS BEGUN WITHOUT WRITTEN APPROVAL OF GDCD-WWS.

### 29. DISPOSAL OF EXCESS EXCAVATED MATERIAL

ALL EXCESS EXCAVATED MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR, WITH ALL PERMITS, PERMISSIONS, AND LOCATIONS PROVIDED BY THE CONTRACTOR. ADJACENT PROPERTY OWNERS SHALL BE GIVEN PREFERENCE FOR DISPOSAL SITES. WRITTEN PERMISSION FOR DISPOSAL ON ADJACENT PROPERTY OWNERS SHALL BE PROVIDED TO GDCD-WWS.

### 30. CONSTRUCTION STAKING

THE CONTRACTOR SHALL, AT ITS OWN EXPENSE, PROVIDE A PROFESSIONAL LAND SURVEYOR, LICENSED IN THE STATE OF MICHIGAN, TO PROVIDE ALIGNMENT AND GRADE STAKES, AND CUT SHEETS. THE SURVEYOR SHALL PROVIDE GRADE STAKES AND CUT SHEETS AT ALL STRUCTURES AND AT A MAXIMUM OF 50' INTERVALS BETWEEN STRUCTURES.

### 31. FINAL ELEVATIONS OF SURFACE UTILITIES

ALL FINAL ELEVATIONS OF MANHOLE CASTINGS, HYDRANTS, VALVES, AND VALVE BOXES SHALL BE APPROVED BY THE GDCD-WWS REPRESENTATIVE IN THE FIELD. ANY ADJUSTMENTS THAT ARE MADE SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE.

### 32. PROJECT RECORD DOCUMENTS

UPON COMPLETION OF THE WORK AND PRIOR TO FINAL APPROVAL FROM GDCD-WWS, THE OWNER/DEVELOPER SHALL FURNISH GDCD-WWS WITH ONE COMPLETE SET OF PROJECT RECORD DOCUMENTS. THESE PROJECT RECORD DOCUMENTS ARE COMPRISED OF DRAWINGS ON MYLAR AND AN ELECTRONIC DATA SET.

THE MYLAR PROJECT RECORD DOCUMENTS SHALL BE SUBMITTED TO GDCD-WWS ON 4 MIL MYLAR FOR THE REVIEW AND APPROVAL OF GDCD-WWS. THE MYLAR PROJECT RECORD DOCUMENTS SHALL INCLUDE BUT NOT BE LIMITED TO: INVERT OF PIPES, LOCATION OF MANHOLES, PIPE LENGTHS, SLOPES OF PIPE, LOCATION OF SERVICE LEADS, LOCATION OF MAINLINE VALVES, LOCATION OF BENDS, TEES CROSSES, AND LOCATION OF CURB BOXES. THIS INFORMATION SHALL BE GATHERED BY THE OWNER/DEVELOPER AT ITS SOLE EXPENSE. THESE PROJECT RECORD DOCUMENTS SHALL ALSO INCLUDE ANY ADDITIONAL INFORMATION COLLECTED BY THE GDCD-WWS OR MUNICIPAL CONSTRUCTION OBSERVER.

IN ADDITION TO THE AS-BUILT MYLARS, THE OWNER/DEVELOPER SHALL PROVIDE TO GDCD-WWS AN ELECTRONIC DATA SET IN A MICROSOFT EXCEL SPREADSHEET DETAILING THE FOLLOWING ITEMS IN THEIR AS-BUILT LOCATIONS DEPICTED IN MICHIGAN STATE PLANE SOUTH COORDINATES (NAD83) AND ELEVATIONS (USGS/NGVD): ALL MANHOLES (WATER AND SANITARY), ALL HYDRANTS, ALL VALVES, AND ALL SERVICE RISERS (WATER AND SANITARY) AT THEIR TERMINUS, ALL METER PITS, AND ALL PUMP STATIONS.

### 33. 2-YEAR MAINTENANCE AND GUARANTEE BOND

UPON COMPLETION OF THE WORK AND PRIOR TO FINAL APPROVAL, THE CONTRACTOR SHALL FURNISH THE GDCD-WWS WITH A 2-YEAR MAINTENANCE AND GUARANTEE BOND.

### 34. SOIL EROSION AND SEDIMENTATION CONTROL RELEASE

PRIOR TO FINAL ACCEPTANCE BY GDCD-WWS, THE CONTRACTOR SHALL REQUEST A FINAL INSPECTION OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND RECEIVE WRITTEN APPROVAL FROM GDCD-WWS. THE SOIL EROSION AND SEDIMENTATION CONTROL BOND WILL BE RELEASED UPON GDCD-WWS FINAL APPROVAL.

### 35. ORDER OF PRECEDENCE

IN RESOLVING INCONSISTENCIES BETWEEN TWO OR MORE SECTIONS OF THE CONTRACT DOCUMENTS, PRECEDENCE SHALL BE GIVEN IN THE FOLLOWING ORDER FROM (A) THROUGH (G):

- A. AGREEMENT AND ANY CONTRACT MODIFICATIONS (WITH GDCD-WWS)
- B. BID
- C. SUPPLEMENTARY CONDITIONS
- D. INSTRUCTION TO BIDDERS
- E. GENERAL CONDITIONS OF THE CONTRACT
- F. SPECIFICATIONS
- G. DRAWINGS

## SANITARY CONSTRUCTION NOTES

1. ALL MATERIAL AND WORK SHALL COMPLY WITH THE LATEST GDCD-WWS SPECIFICATIONS AND STANDARD DETAILS.

2. NO CONNECTION TO AN EXISTING SANITARY SEWER SHALL BE MADE WITHOUT THE PRIOR APPROVAL OF GDCD-WWS. GDCD-WWS SHALL HAVE FINAL INSPECTION AUTHORITY AND APPROVAL FOR UNDERGROUND SANITARY SEWER FACILITIES.

3. THE MATERIAL FOR THE SANITARY SEWER SHALL BE SPECIFIED ON THE CONSTRUCTION DRAWINGS. THE FOLLOWING MATERIALS ARE ACCEPTABLE TO GDCD-WWS:

- A. 8" TO 15", PVC WITH A MINIMUM SDR OF 26 CONFORMING TO ASTM D-3034-00 GASKETED SEWER PIPE.
- B. LARGER THAN 15", REINFORCED CONCRETE PIPE CONFORMING TO ASTM C-76-03. JOINTS SHALL BE MODIFIED TONGUE & GROOVE TYPE WITH SOLID RUBBER GASKETS CONFORMING TO ASTM C-443-02. MINIMUM SIZE SHALL BE CLASS III, WALL B AS RECOMMENDED BY THE ENGINEER.

4. ALL SANITARY SEWER SERVICE RISERS SHALL BE 6" INTERNAL DIAMETER SDR-26 PVC OR LOWER CONFORMING TO ASTM D-3034-00. JOINTS SHALL BE RUBBER GASKET JOINTS OR SOLVENT WELD BELL JOINTS. RISERS SHALL BE LEFT AT 8'-10" DEEP AT THE RIGHT-OF-WAY OR EASEMENT LINE, OR AS DEEP TO SERVICE BASEMENTS. SERVICE RISERS WITHIN EASEMENTS SHALL BE EXTENDED A MINIMUM OF ONE PIPE LENGTH FROM THE MAINLINE SEWER OR TO THE EDGE OF THE EASEMENT, WHICH EVER IS LONGER. WEEP TILE, PERIMETER DRAINS, DOWN SPOUTS, OR ANY OTHER SOURCE OF WATER, SHALL NOT BE CONNECTED TO THE SANITARY SEWER.

5. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C-478-03 WITH RUBBER JOINTS CONFORMING TO ASTM C-443-02. ALL FINAL ELEVATIONS OF MANHOLE CASTINGS SHALL BE DETERMINED BY GDCD-WWS. MANHOLE FRAMES AND COVERS SHALL BE BOLT-DOWN, WATER TIGHT EAST JORDAN 1040 ZPT, NEEDHAM FOUNDRY COMPANY R-1916F, OR GDCD-WWS APPROVED ALTERNATE. STEPS SHALL BE M.A. INDUSTRIES PS-1-PF, AMERICAN STEP CO. ML-10, OR A GDCD-WWS APPROVED ALTERNATE.

6. ALL SANITARY SEWERS SHALL BE INSTALLED PURSUANT TO THE SANITARY SEWER STANDARD DETAILS. DEEPER SEWERS, EXCESSIVE TRENCH WIDTH, AND WHERE NOTED, THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS SPECIFIED.

7. WHERE MANHOLE ADJUSTMENT IS REQUIRED, THE MAXIMUM AMOUNT OF ADJUSTMENT BETWEEN THE CASTING AND THE CONE SHALL BE 9". A MAXIMUM OF TWO ADJUSTMENT RINGS ARE ALLOWED. ONLY 3", 4", OR 6" CONCRETE ADJUSTMENT RINGS SHALL BE USED. THE MANHOLE SHALL BE WRAPPED PER SD-5 OF THE SANITARY SEWER DETAILS.

8. ALL SANITARY SEWERS 8" THROUGH 21" DIAMETER, INCLUDING SERVICE LEADS CONSTRUCTED AS PART OF WORK, SHALL UNDERGO A LOW PRESSURE AIR TEST AND AN INFILTRATION TEST, IN CONFORMANCE WITH ASTM C-924-02 OR C-969-02, PRIOR TO FINAL ACCEPTANCE. SANITARY SEWER SYSTEMS LARGER THAN 21" SHALL UNDERGO AN INFILTRATION TEST. THE MAXIMUM ALLOWABLE INFILTRATION FOR PVC SYSTEMS SHALL BE 0 GALLONS PER INCH DIAMETER, PER MILE, PER 24 HOURS, AND CONCRETE SYSTEMS SHALL BE 100 GALLONS PER INCH DIAMETER, PER MILE.

9. ALL PUBLIC SANITARY SEWERS 8" OR LARGER SHALL BE INTERNALLY TELEVISED (PAN/TILT) BY THE CONTRACTOR. THE TELEVISED REPORT, INCLUDING THE DVD, SHALL BE GIVEN TO GDCD-WWS PRIOR TO A REQUEST FOR FINAL INSPECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING (JET/VAC) THE LINE AND ASSURING ALL DIRT AND DEBRIS HAS BEEN REMOVED PRIOR TO TELEVISION. PRIOR TO TELEVISIONING THE LINE, WATER SHALL BE PLACED IN THE MAIN FROM THE UPSTREAM MANHOLE UNTIL IT COMES OUT OF THE DOWNSTREAM MANHOLE. THE TELEVISED REPORT SHALL LIST THE DISTANCE A HOUSE LEAD IS LOCATED FROM A MANHOLE, ALL SHEAR BREAKS IN THE MAIN OR SERVICE LEADS, ALL LONGITUDINAL CRACKS, BROKEN PIPE, DIPS, OR HIGH POINTS IN THE LINE, ETC. THE CONTRACTOR SHALL REPAIR DAMAGED PIPE BY EXCAVATING THE PIPE AND REPLACING THE LENGTH OF PIPE IN AN APPROVED METHOD. LEAKING JOINTS SHALL BE REPAIRED BY THE CONTRACTOR BY GROUTING. A LEAKING JOINT IS DEFINED AS HAVING SUFFICIENT INFILTRATION TO WET THE INTERIOR OF THE JOINT. GDCD-WWS SHALL BE NOTIFIED WHEN THE LINE IS TO BE TELEVISED AND SHALL BE PRESENT TO INSPECT REPAIRS.

10. SANITARY MANHOLES SHALL BE PLACED CLOSEST TO PROPERTY CORNERS WHEN FEASIBLE.

11. PRIOR TO PERFORMING ANY TESTING, THE CONTRACTOR SHALL BE REQUIRED TO DO THE FOLLOWING:

- A. CONDUCT PRELIMINARY TESTS ON THE SYSTEM.
- B. PROVIDE THE RESULTS FROM THE PRELIMINARY TESTS ON THE SYSTEM.
- C. PROVIDE RESULTS OF DENSITY CHECKS ON COMPACTED SAND BACKFILL FROM A CERTIFIED TESTING AGENCY.
- D. FURNISH A COMPLETED TWO-YEAR MAINTENANCE & GUARANTEE BOND.
- E. COMPLETE FINAL ADJUSTMENTS ON ANY SANITARY SEWER STRUCTURES.

12. PRIOR TO FINAL APPROVAL, THE FOLLOWING ITEMS MUST BE COMPLETED BY THE CONTRACTOR:

- A. THE FINAL TESTING SHALL CONSIST OF VISUAL INSPECTION OF MANHOLES, TELEVISION OF SANITARY MAIN, LOW PRESSURE AIR TEST, AND/OR INFILTRATION TEST DEPENDENT ON THE SIZE OF THE SANITARY MAIN (SEE #8 ABOVE), AND PASSING AN APPROPRIATE SIZED MANDREL 30 DAYS AFTER THE MAIN HAS BEEN INSTALLED.
- B. PROVIDE MATERIAL CERTIFICATES.
- C. PROVIDE RECORDED COPIES OF ALL EASEMENTS FOR THE MASTER DEED REFLECTING FINAL PROJECT RECORD DOCUMENT LOCATIONS.

## PRESSURE PIPE CONSTRUCTION NOTES

1. ALL MATERIAL AND WORK SHALL COMPLY WITH THE LATEST GDCD-WWS SPECIFICATIONS AND STANDARD DETAILS.

2. ALL PUBLIC PRESSURE PIPE SHALL BE DUCTILE IRON. THE PIPE SHALL BE BELL AND SPIGOT OR RESTRAINED JOINT FITTINGS FITTED WITH A RUBBER GASKET. FITTINGS MAY BE GRAY IRON OR DUCTILE IRON MEETING CLASS 350 PSI RATING. FOR 3" OR SMALLER SANITARY SEWER FORCEMAIN, SDR-21 PVC MAY BE UTILIZED.

3. ALL PIPES, VALVES, AND FITTINGS SHALL BE POLYWRAPPED, EXCEPT IN MANHOLES. CIRCUMFERENTIAL WRAPS OF MANUFACTURER RECOMMENDED TAPE SHALL BE PLACED AT NO GREATER THAN 4' INTERVALS ALONG THE BARRON OF THE PIPE, WITH THE EXCESS FOLDED OVER THE TOP TO TAKE OUT EXCESS SLACK, HELPING TO MINIMIZE THE SPACE BETWEEN THE POLYETHYLENE AND THE PIPE. COMPLETE THE INSTALLATION BY OVERLAPPING THE POLYETHYLENE TUBE WRAP AT EACH END AND SEAL ENDS PER THE MOST CURRENT VERSION OF AWWA C105/A21.5 STANDARD. WRAPPING PVC PIPE IS NOT REQUIRED.

4. WHERE SANITARY SERVICE LEADS OR OTHER UTILITIES ARE ENCOUNTERED, THE CONTRACTOR SHALL MAKE ADJUSTMENTS TO PROVIDE CONTINUOUS SERVICE TO PROPERTIES ALONG THE ROUTE OF CONSTRUCTION. ALL WORK, INCLUDING THE REBORING OF SANITARY SEWER SERVICE RISERS TO ACCOMMODATE CONSTRUCTION, OR ADJUSTING PRESSURE PIPE INSTALLATION TO CLEAR EXISTING SERVICES, SHALL BE INCLUSIVE TO CONSTRUCTION.

5. ALL PRESSURE PIPES SHALL HAVE A MINIMUM COVER OVER THE TOP OF THE PIPE OF 5' FROM FINISHED GRADE, 5' CLEARANCE UNDER DRAINS, 5' CLEARANCE BELOW EXISTING DITCHES, AND/OR A MINIMUM 5' BELOW THE EXISTING ROAD. THE STANDARD LAYING CONDITIONS FOR PRESSURE PIPE SHALL BE A 30" TRENCH WIDTH, OR PIPE DIAMETER PLUS 12". THE PIPE SHALL BE LAID ON MDOT CLASS II SAND (A5) A MINIMUM OF 4" WITH RECESSES TO ACCOMMODATE PIPE BELLS OR AS SHOWN ON THE PLANS.

6. ALL TRENCH EXCAVATION, UNDER OR WITHIN THE ONE-ON-ONE INFLUENCE OF THE EXISTING OR PROPOSED PAVING, SHALL BE BACK FILLED WITH COMPACTED MDOT CLASS II SAND (A5).

7. THE CONTRACTOR SHALL RESTRAIN ALL THRUST IN THE SYSTEM BY THE USE OF GDCD-WWS APPROVED RESTRAINED JOINTS AND THRUST BLOCKS. DURING THE INSTALLATION OF WATERMAIN, ALL HYDRANTS, TEES, VERTICAL OR HORIZONTAL BENDS AND FUTURE VALVE CONNECTIONS SHALL BE RESTRAINED. THE RESTRAINT SYSTEM AND LOCATION IN THE FIELD SHALL BE DESIGNATED ON THE PLANS.

8. THE CONTRACTOR SHALL ENCASE THE PRESSURE PIPE IN CONCRETE WHERE THE VERTICAL SEPARATION BETWEEN THE SANITARY SEWER OR STORM SEWER AND THE WATERMAIN IS LESS THAN 18" INCHES.

9. DATE VALVES SHALL BE RESILIENT SEATED CONFORMING TO THE MOST CURRENT VERSION OF AWWA C509 OR C515 STANDARDS. VALVES SHALL HAVE A VERTICAL, NON-RISING STEM, AND OPEN CLOCKWISE, OR AS SPECIFIED BY LOCAL MUNICIPALITY HAVING JURISDICTION.

10. FIRE HYDRANTS SHALL CONFORM TO THE MOST CURRENT VERSION OF AWWA C502 STANDARD. ALL HYDRANTS SHALL BE TRAFFIC MODELS WITH BREAKAWAY FLANGES, AND SHALL HAVE THE DRAIN HOLES FACTORY PLUGGED. ALL THE FIRE HYDRANT ASSEMBLIES FROM THE TEE THROUGH THE HYDRANT, SHALL BE RESTRAINED BY A GDCD-WWS APPROVED METHOD. FIRE HYDRANTS SHALL BE PLACED AT PROPERTY CORNERS AND WITHIN THE RIGHT-OF-WAY WHEN POSSIBLE AND SHALL BE PAINTED YELLOW WITH THE CAP COLOR CODED IN ACCORDANCE WITH THE STANDARD DETAILS. FINAL ELEVATIONS AND ADJUSTMENTS TO GRADE, USING EXTENSION PIECES IF REQUIRED, SHALL BE ACCOMPLISHED BY THE CONTRACTOR AT THE CONTRACTOR'S SOLE EXPENSE. FIRE HYDRANTS SHALL HAVE A 5 1/4" VALVE OPENING. FIRE HYDRANTS SHALL BE EAST JORDAN 589 250, AMERICAN FLOW CONTROL WATEROUS PACER W667-250, OR A GDCD-WWS APPROVED ALTERNATE.

11. PRESSURE TAPS TO EXISTING WATERMAIN, AND CONNECTIONS TO EXISTING VALVES, SHALL BE MADE ONLY UNDER GDCD-WWS OR THE LOCAL MUNICIPALITY HAVING JURISDICTION. ALL VALVE OPENING AND CLOSING SHALL BE BY THE OPERATIONAL AUTHORITY. (ONLY A GDCD-WWS APPROVED TAPPING SLEEVE IS ALLOWED FOR ALL PRESSURE TAPS.) A CONCRETE MANHOLE SHALL BE REQUIRED AROUND ALL PRESSURE TAPS. SEE PRESSURE PIPE DETAILS.

12. THE CONTRACTOR SHALL HAVE THE OPTION OF PRESSURE TESTING THE WATERMAIN AGAINST THE EXISTING VALVE AT THE POINT OF BEGINNING OF THE PROJECT OR PLACING A CAP WITHIN 10' OF THE EXISTING VALVE AND STUB. IF TESTING AGAINST THE EXISTING VALVE AND IT LEAKS, THE CONTRACTOR SHALL MAKE REPAIRS AND REPEAT THE PRESSURE TEST AGAINST THE EXISTING VALVE. AT THE CONTRACTOR'S SOLE EXPENSE. IF A CAP HAS BEEN PLACED, THEN THE CONTRACTOR SHALL PERFORM THE SYSTEM TEST, AND IF THE TESTS ARE SATISFACTORY TO GDCD-WWS, THEN THE FINAL CONNECTION SHALL BE MADE.

13. WATERMAIN SHALL BE TESTED IN ACCORDANCE WITH MOST CURRENT VERSION OF AWWA C600 STANDARD, AND CHLORINATED IN ACCORDANCE WITH THE LATEST GENEESE COUNTY STANDARD SPECIFICATIONS. WATERMAIN SHALL BE TESTED TO 150 PSI AS MEASURED AT THE HIGH POINT IN THE WATER LINE. WATERMAIN CHLORINATION SHALL BE OBSERVED AND MONITORED BY GDCD-WWS OR THE LOCAL MUNICIPALITY HAVING JURISDICTION. CHLORINATION AND TESTING SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE. A LETTER OF APPROVAL FROM THE AGENCY HAVING AUTHORITY SHALL BE ISSUED PRIOR TO THE WATER BEING USED FOR HUMAN CONSUMPTION.

14. WHEN SPECIFIED BY THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL SUPPLY ALL WATER SERVICE LEADS. THESE LEADS SHALL BE "K" COPPER AND SHALL BE A MINIMUM OF 3/4" IN DIAMETER. THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE WATERMAIN STANDARD DETAIL. ALL CORPORATIONS SHALL BE BRONZE. ALL APPURTENANCES THAT COME IN CONTACT WITH PORTABLE WATER SHALL BE LEAD FREE ACCORDING TO NSF/ANSI STANDARD 372.

15. THE CONTRACTOR SHALL INSTALL, AS A MINIMUM, 2" CORPORATIONS ON THE PRESSURE PIPE FOR PRESSURE TESTING, CHLORINE ADDITION, AND FOR BLOW-OFF PURPOSES. THE CORPORATIONS SHALL HAVE COPPER PIPE EXTENDING TO THE GROUND SURFACE. THE CONTRACTOR SHALL REMOVE THE CORPORATIONS AND COPPER LINES UPON A SATISFACTORY TEST AND INSTALL BRONZE PLUGS PRIOR TO FINAL ACCEPTANCE.

16. PRIOR TO REQUESTING ANY FINAL PRESSURE TESTING AND GATHERING THE REQUIRED BACTERIA SAMPLES (FOR WATERMAIN ONLY), THE CONTRACTOR SHALL PERFORM THE FOLLOWING ITEMS:

- A. CONDUCT A PRELIMINARY PRESSURE TEST ON THE SYSTEM.
- B. PROVIDE THE RESULTS FROM THE PRELIMINARY TESTS ON THE SYSTEM.
- C. PROVIDE PROPER CAP COLOR ON THE FIRE HYDRANTS (FOR WATERMAIN ONLY).

17. PRIOR TO FINAL APPROVAL, THE FOLLOWING ITEMS SHALL BE COMPLETED BY THE CONTRACTOR:

- A. FURNISH A COMPLETED TWO-YEAR MAINTENANCE & GUARANTEE BOND.
- B. PROVIDE MATERIAL CERTIFICATES.
- C. COMPLETE FINAL ADJUSTMENTS OF FIRE HYDRANTS (FOR WATERMAIN ONLY), VALVES, AND MANHOLES.
- D. PROVIDE RESULTS OF DENSITY CHECKS ON COMPACTED SAND BACKFILL FROM A CERTIFIED TESTING AGENCY.
- E. PROVIDE RECORDED COPIES OF ALL EASEMENTS FOR THE MASTER DEED REFLECTING FINAL PROJECT RECORD DOCUMENT LOCATIONS.

NO.	DATE	DESCRIPTION
1	2020	EIGHTH EDITION

DIVISION OF  
WATER & WASTE SERVICES

# STANDARD CONSTRUCTION NOTES

# STANDARD DETAILS

For the Construction of Sanitary Sewers & Watermain in Genesee County

