

**REVISIONS:**

Title: Township Submittal	Drawn: Brad M.	Checked: Jack B.	Date: 05/05/2021
Title: Road Department Submittal	Drawn: Brad M.	Checked: Jack B.	Date: 05/12/2021
Title: Drain Commissioner Submittal	Drawn: Brad M.	Checked: Jack B.	Date: 05/12/2021
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Title: Client Revisions	Drawn: Brad M.	Checked: Jack B.	Date: 08/02/2022

**UNION GREEN**  
 Existing Conditions / Demolition Plan  
 16024 Red Arrow Highway  
 PART OF THE SOUTHEAST 1/4 OF SECTION 25, T7S, R21W,  
 CHIKAMING TOWNSHIP, BERRIEN COUNTY, MICHIGAN

**STAMP:**

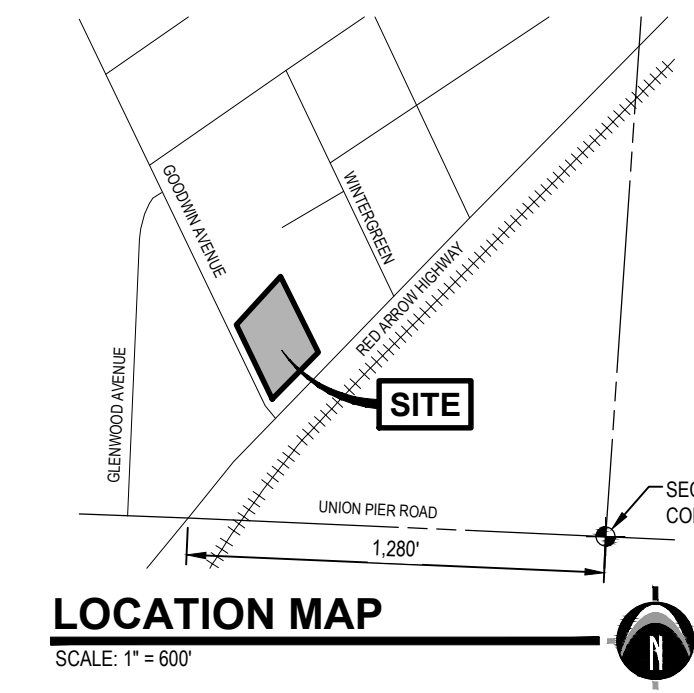
**PROJECT NO:**  
21200264

**SHEET NO:**  
**C-203**



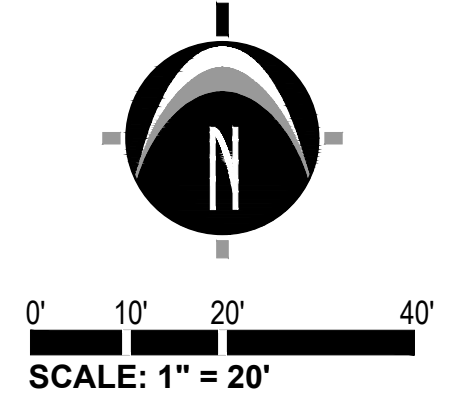
**LEGEND**

	Benchmark / Control Point		Iron-Found		Fence
	Catch Basin - Round		Post		Tree
	Electric Meter		Sign		Asphalt
	Gas Meter		Utility Pole		Concrete
	Hydrant		Overhead Utility		Existing Building



**LEGEND**

	EXISTING GRADE CONTOUR
	EXISTING BITUMINOUS REMOVAL
	EXISTING CONCRETE REMOVAL
	EXISTING UTILITY LINE REMOVAL
	EXISTING TREE REMOVAL



**REMOVAL / DEMOLITION NOTES**

- 1) THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES AT LEAST THREE WEEKS PRIOR TO THE BEGINNING OF CONSTRUCTION OPERATIONS. THERE ARE EXISTING UNDERGROUND UTILITIES WHICH CROSS THE PROPOSED REPLACEMENT WORK AREAS. ALTHOUGH THEIR EXACT LOCATION CANNOT BE DETERMINED, IT IS KNOWN THESE UTILITIES ARE LOCATED WHERE DIGGING IS REQUIRED. THE CONTRACTOR SHALL CONDUCT THE REQUIRED EXCAVATION IN THESE AREAS WITH EXTREME CAUTION.
- 2) ALL EXISTING UTILITY INFORMATION SHOWN IS TAKEN FROM EXISTING RECORDS, AND FIELD VERIFIED WHERE ACCESSIBLE. ONLY INFORMATION OBTAINED FROM EXISTING RECORDS MAY NOT BE COMPLETE OR ACCURATE. THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. THE CONTRACTOR SHALL FIELD VERIFY FOR ACCURACY, LOCATION AND CONDITION.
- 3) BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE CITY AND BY THE OWNER, REPRESENTATIVES OF THE CITY, THE OWNER AND THE CONTRACTOR SHALL MAKE AN INSPECTION OF THE EXISTING SEWERS WITHIN THE WORK LIMITS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING UTILITIES AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS AND EXISTING VIDEO TAPES. RECORDS OF THE INSPECTIONS SHALL BE KEPT IN WRITING BY THE CONTRACTOR.
- 4) THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION WORK.
- 5) ALL EXISTING UTILITIES, SEWERS AND WATER LINES ARE TO REMAIN UNDISTURBED UNLESS OTHERWISE NOTED ON THE PLANS. THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH ALL APPLICABLE UTILITY COMPANIES, MUNICIPALITIES AND AGENCIES BEFORE COMMENCING ANY WORK.
- 6) THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES REGARDING REMOVAL OF EXISTING POLES, OVERHEAD WIRES, UNDERGROUND UTILITIES, GUY WIRES, GAS LINES, ETC. ALL ADJUSTMENT OR RECONSTRUCTION WORK EXCEPT FOR THOSE STRUCTURES OTHERWISE NOTED ON THE PLANS, SHALL BE PERFORMED BY THE CONTRACTOR. EXISTING APPURTENANCES SUCH AS UTILITY POLES AND VALVES BOX SHALL NOT BE DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION.
- 7) THE CONTRACTOR SHALL MAINTAIN EXISTING UTILITY SERVICE TO ALL ADJOINING PROPERTIES.
- 8) ALL DEBRIS SHALL BE REMOVED FROM THE SITE, AND NO STOCKPILING ON SITE SHALL BE ALLOWED UNLESS APPROVED BY THE OWNER OR THEIR REPRESENTATIVES.
- 9) THE CONTRACTOR SHALL LIMIT SAWCUT AND PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE REQUIRED OR AS SHOWN. ALL PAVEMENTS TO BE REMOVED SHALL BE SAWCUT AND REMOVED TO FULL DEPTH AT ALL PAVEMENT LIMITS OR EXISTING JOINTS. IF ANY DAMAGE IS INCURRED TO ANY OF THE SURROUNDING PAVEMENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPAIR AT NO ADDITIONAL COST TO ANYONE ELSE, INCLUDING THE CITY OR OWNER.
- 10) ASPHALT AREAS SHOWN TO BE SAWCUT AND REMOVED FULL DEPTH ARE ACTUAL FACE OF PROPOSED CURBS. IT WILL BE NECESSARY TO MAKE OFF-SET SAWCUTS TO PROVIDE CLEARANCE FOR PROPOSED CURBS. THE CONTRACTOR SHALL DETERMINE THE AMOUNT OF OFF-SET NECESSARY TO CONSTRUCT THE PROPOSED CURBS. ADDITIONAL CUTS MAY BE DESIRED TO FACILITATE THE REMOVAL OF THE EXISTING PAVEMENT, BUT THERE WILL BE NO EXTRA PAYMENT FOR ADDITIONAL CUTS. PAVEMENT SHALL BE REMOVED WITHOUT DAMAGING OR UNDERMINING THE REMAINING PAVEMENT. IF ADJACENT PAVEMENT IS DAMAGED, THE CONTRACTOR SHALL MAKE ADDITIONAL FULL DEPTH SAWCUTS AND REMOVE THE DAMAGE AREAS AS NECESSARY.
- 11) ALL PAVEMENT REMOVAL AREAS SHALL BE FULL PAVEMENT CROSS-SECTION REMOVAL DOWN TO NATIVE SOIL LAYER IN ACCORDANCE WITH THE GEOTECHNICAL REPORT DATED MONTH/DAY/YEAR.
- 12) ALL TREES WITHIN THE GRADING LIMITS SHALL BE REMOVED UNLESS OTHERWISE NOTED.

**TITLE INFORMATION**

The Title Description and Schedule B items hereon are from First American Title, Commitment No. 920120, dated February 3, 2021.

**TITLE DESCRIPTION**

Land in the Township of Chikaming, Berrien County, MI, described as follows:  
 Part of the Southeast Quarter of Section 25, Town 7 South, Range 21 West, described as follows: Commencing at the South Quarter post of said Section 25; thence East, on the South Section line, 1347.60 feet; thence North, at right angles, 575.00 feet; thence North 34 degrees 15 minutes 00 seconds East 157.10 feet to a point on the Northeastly line of Goodwin Road; thence South 28 degrees 13 minutes 19 seconds East, along the Northeastly line of Goodwin Road, 124.52 feet to the place of beginning of this description; thence South 28 degrees 13 minutes 19 seconds East, along said Northeastly line, 243.35 feet to Red Arrow Highway; thence North 42 degrees 15 minutes 56 seconds East, along said highway, 199.09 feet; thence North 29 degrees 15 minutes 10 seconds West 249.40 feet; thence South 40 degrees 10 minutes 54 seconds West 197.00 feet to the place of beginning.

**SCHEDULE B - SECTION II NOTES**

- 7 Release of Right of Way in favor of the people of the State of Michigan and the Covenants, Conditions, and Restrictions contained in instrument recorded in Liber 33 of Misc., page 196. The easement described in this document is shown on this survey.

**SURVEYOR'S NOTES**

- 1) ALTA TABLE "A" ITEM NO. 3 - Flood Zone Classification: An examination of the National Flood Insurance Program's Flood Insurance Rate Map for Community Number 260258, Panel Number 0303C, with an Effective Date of 04/17/2006, shows this parcel to be located in Zone X. No field surveying was performed to determine this zone.
- 2) ALTA TABLE "A" ITEM NO. 4 - Gross Land Area: 45833 Square Feet / 1.05 Acres
- 3) ALTA TABLE "A" ITEM NO. 9 - Parking Information  
 0 standard parking spaces  
 0 handicap parking spaces  
 0 total parking spaces
- 4) ALTA TABLE "A" ITEM NO. 16 - Evidence of recent earth moving work, building construction or building additions observed in the process of conducting the fieldwork. None observed at time of survey.
- 5) Basis of Bearing: N90°00'00"E along the South line of Section 25, Town 7 South, Range 21 West
- 6) Note to the client, insurer, and lender - With regard to Table A, Item 11, source information from plans and markings will be combined with observed evidence of utilities pursuant to Section 5.E.iv. to develop a view of the underground utilities. However, lacking excavation, the exact location of underground features cannot be accurately, completely, and reliably depicted. In addition, in some jurisdictions, 811 or other similar utility locate requests from surveyors may be ignored or result in an incomplete response. Where additional or more detailed information is required, the client is advised that excavation and/or a private utility locate request may be necessary.
- 7) NOTE TO CONTRACTORS: 3 (THREE) WORKING DAYS BEFORE YOU DIG, CALL MISS DIG AT TOLL FREE 1-800-482-7171 FOR UTILITY LOCATIONS ON THE GROUND.

**REMOVAL / DEMOLITION NOTES**

- 1 REMOVE EXISTING CONCRETE
- 2 REMOVE EXISTING BUILDING / STRUCTURE
- 3 REMOVE EXISTING WALL
- 4 REMOVE EXISTING OVERHEAD UTILITY LINE
- 5 REMOVE EXISTING WELL
- 6 REMOVE EXISTING CONCRETE WALL
- 7 REMOVE EXISTING ELECTRIC & GAS METERS
- 8 REMOVE EXISTING FENCE
- 9 REMOVE EXISTING POST
- 10 SAWCUT / REMOVE EXISTING BITUMINOUS

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

UTILITY LOCATIONS ARE DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.

NOTE: EXISTING UTILITIES AND SERVICE LINES IDENTIFIED AS "PILAN" WERE OBTAINED FROM AVAILABLE AS-BUILT RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH AND STATUS OF ALL UTILITIES AND SERVICE LINES PRIOR TO NEW CONNECTIONS.

**BENCHMARKS**

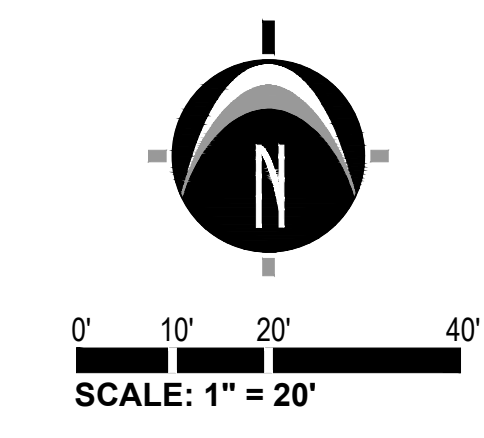
**BENCHMARK A ELEV. = 627.71 (NAVD88)**  
 Railroad spike in Northeast side of a power pole, ±28' Southwest of the centerline of Goodwin Road, said power pole being the second power pole on the South side of Goodwin Road, North of Red Arrow Highway.

**BENCHMARK B ELEV. = 627.93 (NAVD88)**  
 Railroad spike in the Northwest side of a power pole, ±38' Northeast of the centerline of Red Arrow Highway, said power pole being the first power pole on the South side of Red Arrow Highway, North of Goodwin Road.

**PREPARED FOR:**  
 Union Pier Development LLC  
 Att: Brad Rottshofer  
 2050 Celadon Drive NE, Suite B  
 Grand Rapids, MI 49525  
 (616) 235-0711

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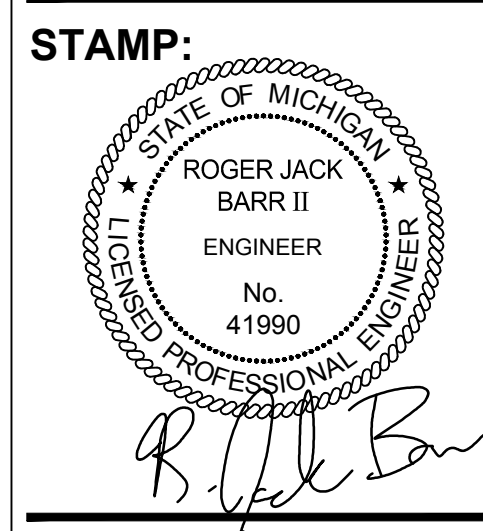
**LEGEND**

	EXISTING BITUMINOUS
	EXISTING CONCRETE
	PROPOSED BITUMINOUS
	PROPOSED CONCRETE
	PROPOSED BOLLARD LIGHT
	PROPOSED POLE LIGHT
	PROPOSED WOOD FENCE
	PROPOSED ALUMINUM FENCE
	PROPOSED AC UNIT

**GENERAL NOTES**

- ZONING OF PROPERTY: 11-07-0125-0026-03-3
- 1) C-U (UNION PIER MIXED USE) ZONING REQUIREMENTS
- A) MINIMUM LOT AREA = 2,500 SQ.FT.
  - B) MINIMUM LOT WIDTH = 25 FT.
  - C) MAXIMUM BUILDING HEIGHT = 40 FT OR 3 STORIES
  - D) MAXIMUM LOT COVERAGE = 100%
- SETBACKS
- A) FRONT YARD = MIN. NONE, MAX. 15 FT.
  - B) SIDE YARD = 5 FT.
  - C) REAR YARD = SUFFICIENT FOR SITE ELEMENTS.
- 2) SUMMARY OF LAND USE:
- A) TOTAL ACREAGE = 1.05 ACRES (45,839 SQ.FT.)
  - B) AREA OF PROPOSED BUILDINGS = 15,600 SQ.FT.
  - C) LOT COVERAGE = 34.0%
  - D) PAVEMENT AREA = APPROX. 12,996 SQ.FT.
  - E) NUMBER OF RESIDENTIAL UNITS = 18  
 TOWN HOUSES = 13  
 CARRIAGE HOUSES = 4  
 LIVE WORK = 1
  - F) PROPOSED DENSITY = 18 UNITS / 1.05 ACRES = 17.1 UNITS / ACRE
  - G) OPEN SPACE PROVIDED = 13,946 SQ.FT. (30.4%)
- 3) PARKING REQUIREMENTS:
- A) MINIMUM REQUIRED SPACE PER TOWNSHIP = 9'x18.5' (24' AISLE)
  - B) TYPICAL PARKING SPACE PROVIDED = 9'x18.5' (24' AISLE)
  - C) NUMBER OF SPACES REQUIRED = 39 (BASED ON TOWNSHIP REQUIREMENTS OF 2 DWELLING UNIT = 1,300 SF RETAIL AREA IN LIVE-WORK = 36 \* 3)
  - D) NUMBER OF SPACES PROVIDED = 43 TOTAL (31 GARAGE, 11 + 1 DELIVERY VEHICLE SPACE, EXTERIOR)
- 4) THIS PROJECT IS NOT LOCATED IN THE 100 YEAR FLOOD PLAIN, BASED ON THE NATIONAL FLOOD INSURANCE PROGRAM RATE MAPS
- 5) BEST MANAGEMENT PRACTICES WILL BE UTILIZED DURING AND AFTER CONSTRUCTION OF THE PROJECT. MEASURES WILL INCLUDE THE USE OF SEEDING AND MULCHING, SEDIMENT INLET FILTERS, COMPACTION AND PRIVING. THE OWNER OF THE SUBJECT PARCEL SHALL HAVE THE RESPONSIBILITY TO MAINTAIN THE PERMANENT SOIL EROSION PROTECTION MEASURES.
- 6) UTILITIES SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.
- 7) CONTRACTOR TO FIELD VERIFY ALL INVERTS.
- 8) THE PERMANENT PARCEL NUMBER FOR THE SITE IS 11-07-0125-0026-03-3
- 9) THE ADDRESS OF THE PROPERTY IS 16024 RED ARROW HIGHWAY.
- 10) THERE IS CURRENTLY A VACANT HOUSE ON THE PARCEL. THE EXISTING HOUSE WILL BE DEMOLISHED AS PART OF THIS PROJECT.
- 11) ALL PROPOSED SIGNAGE WILL REMAIN WITHIN THE BOUNDARIES OF THE PROPERTY.
- 12) SITE SOILS ARE THE FORD LOAMY SAND PER USDA WEB SOIL SURVEY DATA.
- 13) THE PROJECT WILL NOT REQUIRE DEEP EXCAVATION OR DEWATERING SO NO IMPACT TO GROUNDWATER IS ANTICIPATED.
- 14) ALL PROPOSED FRANCHISE UTILITIES (GAS, ELECTRIC, TELEPHONE & CABLE) WILL BE LOCATED UNDER GROUND. FINAL LOCATIONS TO BE DETERMINED BY THE UTILITY PROVIDERS.
- 15) THE CONDOMINIUM ASSOCIATION WILL BE RESPONSIBLE FOR ALL POOL & COMMON AREA MAINTENANCE.
- 16) THE BUILDING CONTRACTOR WILL BE RESPONSIBLE FOR DAILY SITE CLEANUP AND HOUSEKEEPING IN ACCORDANCE WITH TOWNSHIP ORDINANCE SECTION 7.10 (b) (ii).
- 17) ALL COMMON PATHWAYS AND SIDEWALKS WILL BE MAINTAINED BY THE CONDOMINIUM ASSOCIATION.
- 18) THE CONDOMINIUM ASSOCIATION WILL CONTRACT WITH A WASTE PICKUP AND REMOVAL COMPANY AND WILL BE RESPONSIBLE TO MAINTAIN & FOR HOUSEKEEPING OF THE TRASH ENCLOSURE AREAS.
- 19) ALL DRIVEWAYS, ACCESS AISLES AND PARKING SPACES WILL BE MAINTAINED BY THE CONDOMINIUM ASSOCIATION.
- 20) ALL FENCES WILL BE MAINTAINED BY THE CONDOMINIUM ASSOCIATION.

**UNION GREEN**  
 Site Layout Plan  
 16024 Red Arrow Highway  
 PART OF THE SOUTHEAST 1/4 OF SECTION 25, T7S, R21W,  
 CHIKAMING TOWNSHIP, BERRIEN COUNTY, MICHIGAN



**PROJECT NO:**  
 21200264

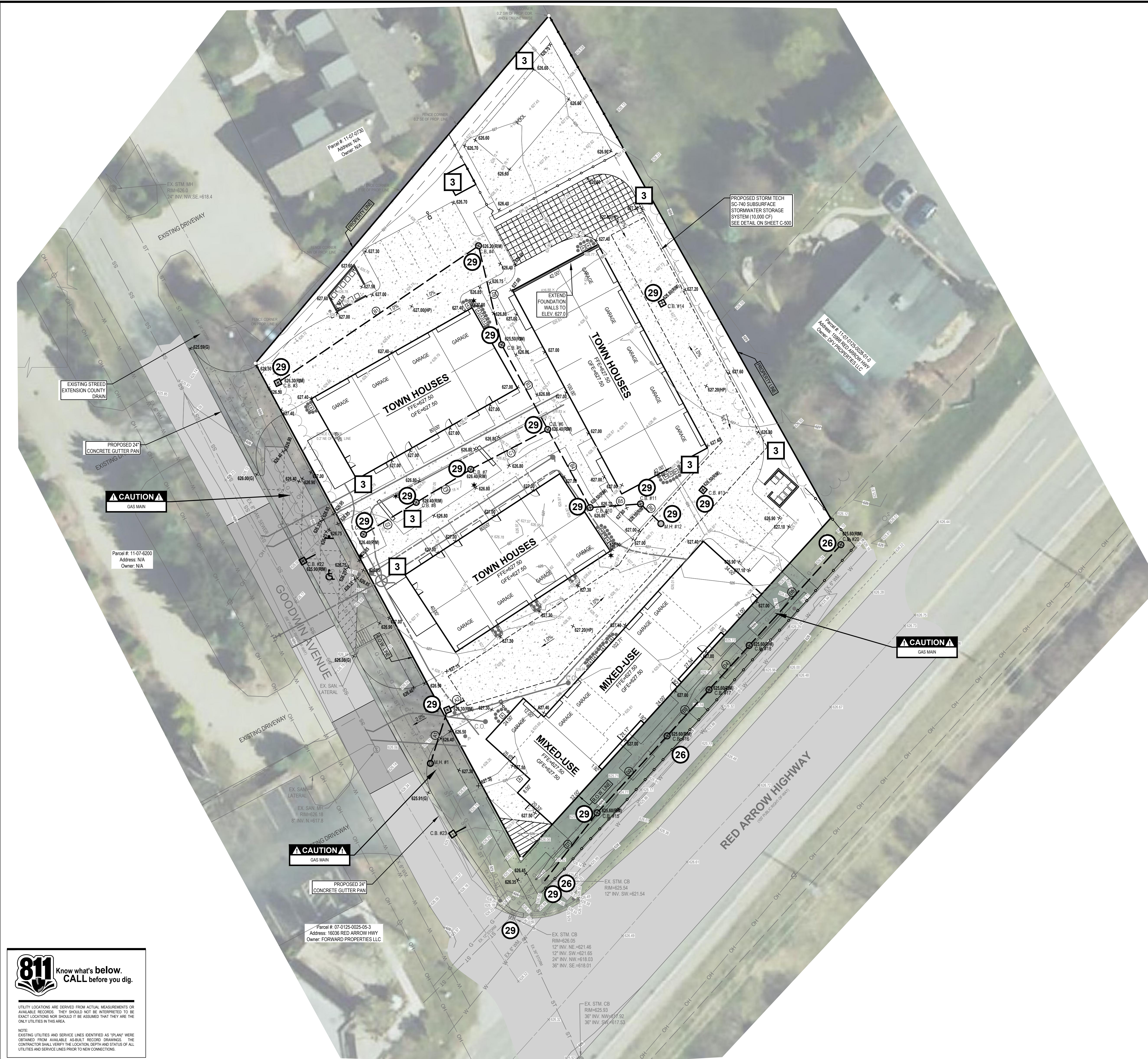
**SHEET NO:**  
**C-205**



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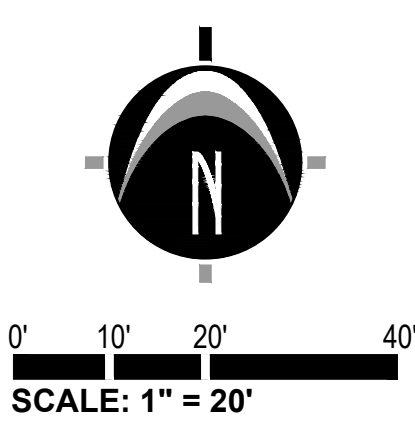
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**LEGEND**

- EX GRADE CONTOUR
- PROP. GRADE CONTOUR
- PROP. GRADE ELEV. (HIGH POINT)
- EX BITUMINOUS
- EX CONCRETE
- PROPOSED BITUMINOUS (STANDARD DUTY)
- PROPOSED CONCRETE (STANDARD DUTY)
- PROP. STORM SEWER
- PROP. SANITARY SEWER LATERAL
- PROP. WATER SERVICE
- FLOW DIRECTION & SLOPE
- PROP. LIMITS OF GRADING
- SILT FENCE

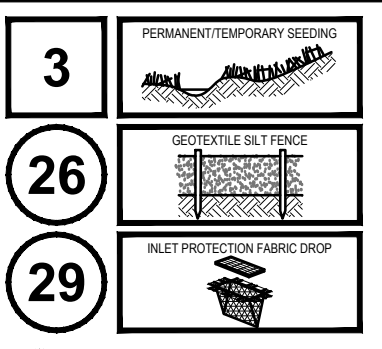


**SOIL EROSION CONTROL SCHEDULE**

	2023	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PLACE SILT FENCE													
STRIP & STOCKPILE TOPSOIL													
CONSTRUCT CONNECTION TO STORM SEWER													
ROUGH GRADE SITE													
CONSTRUCT BUILDING FOUNDATION AND BUILDING													
CONSTRUCT IMPROVEMENTS AROUND BUILDING													
CONSTRUCT UTILITY LINES TO BUILDING													
FINISH GRADE SITE													
PAVE SITE													
RESPREAD TOPSOIL/COMPACTION													
SEED DISTURBED AREAS													
SITE RESTORATION/CLEAN UP													

**SOIL EROSION AND SEDIMENTATION CONTROL NOTES**

- CONTRACTOR SHALL POSSESS THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT PRIOR TO START OF ANY EARTH WORK.
- CONTRACTOR SHALL MODIFY THIS SOIL EROSION AND SEDIMENTATION CONTROL PLAN TO SHOW THE ADDITIONAL CONTROL MEASURES INTENDED TO BE USED DURING CONSTRUCTION. SUBMIT MODIFICATIONS TO THE CONTROLLING AGENCY, THE OWNER, AND THE ENGINEER.
- EROSION PROTECTION SHALL BE PROVIDED AT ALL STORM SEWER INLETS AND OUTLETS. ALL BARE EARTH SHALL BE STABILIZED WITH SEEDING.
- REFER TO THE M.O.T.' "SOIL EROSION AND SEDIMENTATION CONTROL MANUAL" (APRIL 2006) FOR ADDITIONAL INFORMATION.
- THE ENTIRE STORM SEWER SYSTEM SHALL BE CLEANED AND FLUSHED FOLLOWING CONSTRUCTION AND PAID RECEIPT THEREOF PROVIDED TO THE ENGINEER AND COUNTY SECS AGENT PRIOR TO FINAL PAYMENT TO THE CONTRACTOR OR FINAL ACCEPTANCE OF THE CONSTRUCTION BY THE OWNER.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO INSPECT, TAKE CORRECTIVE ACTION AND MAINTAIN ALL TEMPORARY SECS MEASURES DAILY AND AFTER EACH RAIN EVENT UNTIL FINAL COMPLETION AND ACCEPTANCE OF THE PROJECT.



- TEMPORARY MEASURE  
 - PERMANENT MEASURE  
 REFER TO MDT STANDARD PLAN R-96-D

**NEDERVELD**  
 www.nederveld.com  
 800.222.1868  
**GRAND RAPIDS**  
 217 Grandville Ave., Suite 302  
 Grand Rapids, MI 49503  
 Phone: 616.575.5190

ANN ARBOR  
 CHICAGO  
 COLUMBUS  
 HOLLAND  
 INDIANAPOLIS  
 ST. LOUIS

**PREPARED FOR:**  
 Union Pier Development LLC  
 Att: Brad Rottshofer

2050 Celadon Drive NE, Suite B  
 Grand Rapids, MI 49525  
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**UNION GREEN**

**S.E.S.C. & Grading Plan**  
 16024 Red Arrow Highway  
 PART OF THE SOUTHEAST 1/4 OF SECTION 25, T7S, R21W,  
 CHICKAMING TOWNSHIP, BERRIEN COUNTY, MICHIGAN

**STAMP:**

ROGER JACK BARR II  
 ENGINEER  
 No. 41990  
 LICENSED PROFESSIONAL ENGINEER

**PROJECT NO:**  
 21200264

**SHEET NO:**  
**C-300**

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**BENCHMARKS**

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- EX BITUMINOUS
- EX CONCRETE
- PROPOSED BITUMINOUS (STANDARD DUTY)
- PROPOSED CONCRETE (STANDARD DUTY)
- PROP. STORM SEWER
- PROP. SANITARY SEWER LATERAL
- PROP. WATER SERVICE
- FLOW DIRECTION

**LEGEND**

- = INDICATES 18' MIN. CLEARANCE REQUIRED

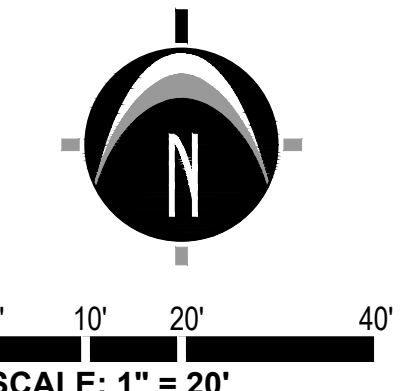
**STORM SEWER DRAINAGE STRUCTURES**

PROP.	RIM	INVERTS	DIA.	TYPE
1	621.60	12" N. INV.=618.83 24" SE. INV.=618.20 24" N. INV.=618.20	7'	EJ 1040 TYPE B
2	626.30	12" S. INV.=618.90 12" NE. INV.=620.00	5'	EJ 5105
3	626.30	12" NE. INV.=623.58 12" S. INV.=623.26	4'	EJ 5105
4	626.20	12" N. INV.=623.13 12" SE. INV.=623.13	4'	EJ 1040 TYPE N
5	625.50	12" N. INV.=623.03 12" SE. INV.=623.13	2'	EJ 6121 N
6	626.40	12" NW. INV.=623.00 18" SE. INV.=622.27 12" SW. INV.=622.74	4'	EJ 1040 TYPE N
7	625.30	12" NE. INV.=622.93 12" SW. INV.=622.93	2'	EJ 6121 N
8	625.44	12" NE. INV.=623.07 12" SW. INV.=623.07	2'	EJ 6121 N
9	626.40	12" NE. INV.=623.20 12" S. INV.=623.26	2'	EJ 6121 N
10	626.50	18" NW. INV.=622.08 18" E. INV.=622.09	4'	EJ 1040 TYPE N
11	625.03	18" W. INV.=621.98 18" SE. INV.=621.98	4'	EJ 1040 TYPE N
12	626.80	18" NW. INV.=621.92 12" SW. INV.=620.50 12" NE. INV.=620.50	4'	EJ 1040 TYPE B
13	626.50	12" SW. INV.=620.50 12" NE. INV.=620.50	4'	EJ 5105
14	626.90	12" SE. INV.=620.50 12" NW. INV.=620.50	4'	EJ 5105
15	623.98	8" SW. INV.=621.93 8" NE. INV.=621.93	1'	NYLOPLAST WI 1299 CGD
16	624.37	8" SW. INV.=622.34 8" NE. INV.=622.34	1'	NYLOPLAST WI 1299 CGD
17	624.61	8" SW. INV.=622.98 8" NE. INV.=622.98	1'	NYLOPLAST WI 1299 CGD
18	624.84	8" SW. INV.=622.81 8" NE. INV.=622.81	1'	NYLOPLAST WI 1299 CGD
20	625.60	8" SW. INV.=623.34 8" NE. INV.=623.34	1'	NYLOPLAST WI 1299 CGD
22	625.90	12" NE. INV.=622.48 12" S. INV.=622.48	4'	EJ 7065
23	625.80	12" NE. INV.=622.50 12" S. INV.=622.50	4'	EJ 7065

\* = CB#2 DETAIL ON SHEET C-500

**STORM SEWER DRAINAGE PIPES**

#	LENGTH	DIA.	SLOPE	MATERIAL
A1	24'	12"	0.30%	SLCPP
A2	8'	12"	0.00%	SLCPP
B1	105'	12"	0.30%	SLCPP
B2	44'	12"	0.30%	SLCPP
B3	42'	12"	0.30%	SLCPP
B4	38'	18"	0.50%	SLCPP
B5	22'	18"	0.50%	SLCPP
B6	12'	18"	0.50%	SLCPP
C1	38'	12"	0.50%	SLCPP
C2	28'	12"	0.50%	SLCPP
C3	27'	12"	0.50%	SLCPP
D1	37'	8"	0.90%	SLCPP
D2	45'	8"	0.90%	SLCPP
D3	27'	8"	0.90%	SLCPP
D4	26'	8"	0.90%	SLCPP
D5	59'	8"	0.90%	SLCPP



**NEDERVELD**  
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**GRAND RAPIDS**  
 217 Grandville Ave., Suite 302  
 Grand Rapids, MI 49503  
 Phone: 616.575.5190

ANN ARBOR  
 CHICAGO  
 COLUMBUS  
 HOLLAND  
 INDIANAPOLIS  
 ST. LOUIS

**PREPARED FOR:**  
 Union Pier Development LLC  
 Att: Brad Rottshofer

2050 Celadon Drive NE, Suite B  
 Grand Rapids, MI 49525  
 (616) 235-0711

- REVISIONS:**
- Title: Township Submittal  
 Drawn: Brad M. Checked: Jack B. Date: 05.05.2021
  - Title: Road Department Submittal  
 Drawn: Brad M. Checked: Jack B. Date: 05.12.2021
  - Title: Drain Commissioner Submittal  
 Drawn: Brad M. Checked: Jack B. Date: 05.12.2021
  - Title: Township Re-Submittal  
 Drawn: Brad M. Checked: Jack B. Date: 06.21.2021
  - Title: Township Re-Submittal  
 Drawn: Brad M. Checked: Jack B. Date: 07.21.2021
  - Title: Revised  
 Drawn: Brad M. Checked: Jack B. Date: 09.20.2021
  - Title: Owner / Developer  
 Drawn: Brad M. Checked: Jack B. Date: 01.24.2022
  - Title: Revised southern building location  
 Drawn: GAN Checked: Jack B. Date: 02.11.2022
  - Title: Revised  
 Drawn: Brad M. Checked: Jack B. Date: 04.29.2022
  - Title: Revised  
 Drawn: Brad M. Checked: Jack B. Date: 06.09.2022
  - Title: Client Revisions  
 Drawn: Brad M. Checked: Jack B. Date: 08.02.2022

**UNION GREEN**

**Utility Plan**  
 16024 Red Arrow Highway  
 PART OF THE SOUTHEAST 1/4 OF SECTION 25, T7S, R21W,  
 CHICKAMING TOWNSHIP, BERRIEN COUNTY, MICHIGAN

**STAMP:**

STATE OF MICHIGAN  
 ROGER JACK BARR II  
 ENGINEER  
 No. 41990  
 LICENSED PROFESSIONAL ENGINEER

*R. Jack Barr*

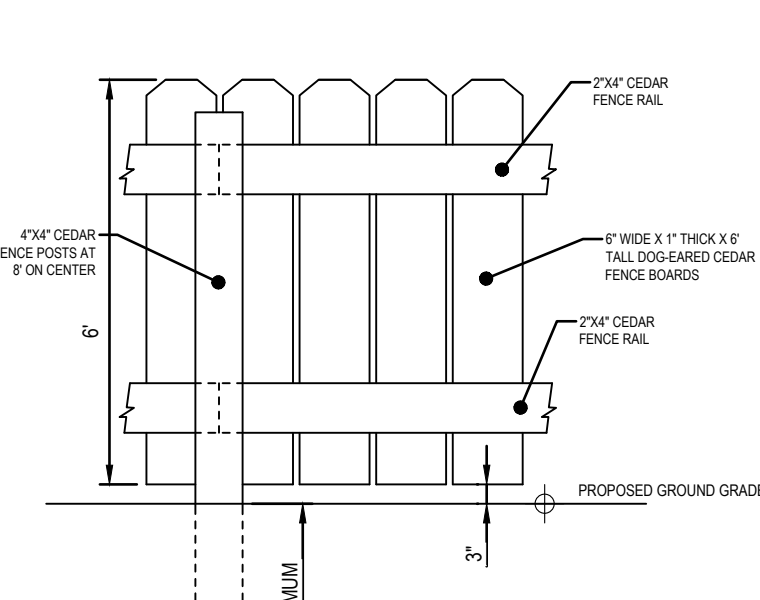
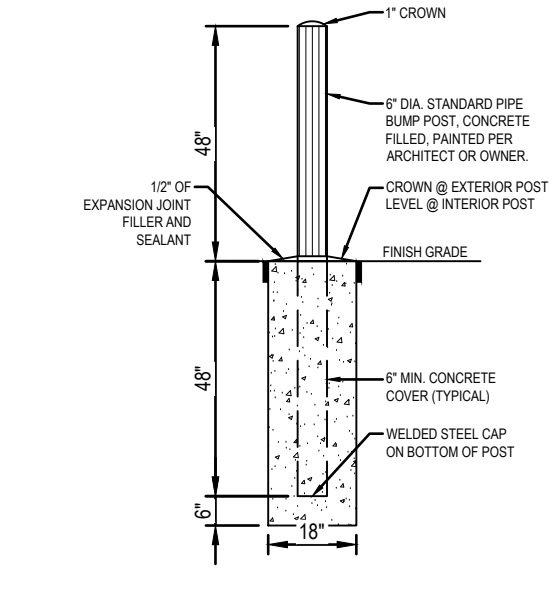
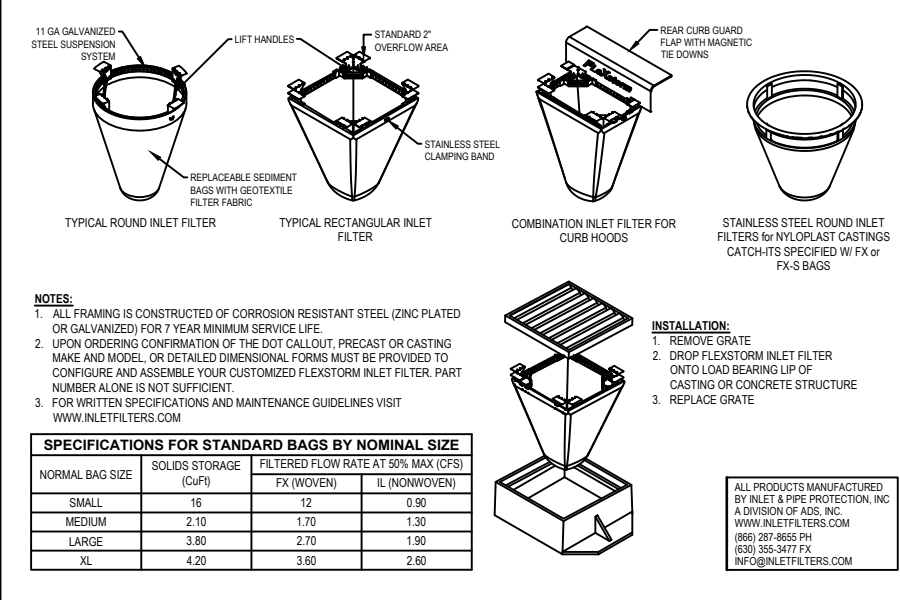
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**SHEET NO:**  
**C-400**



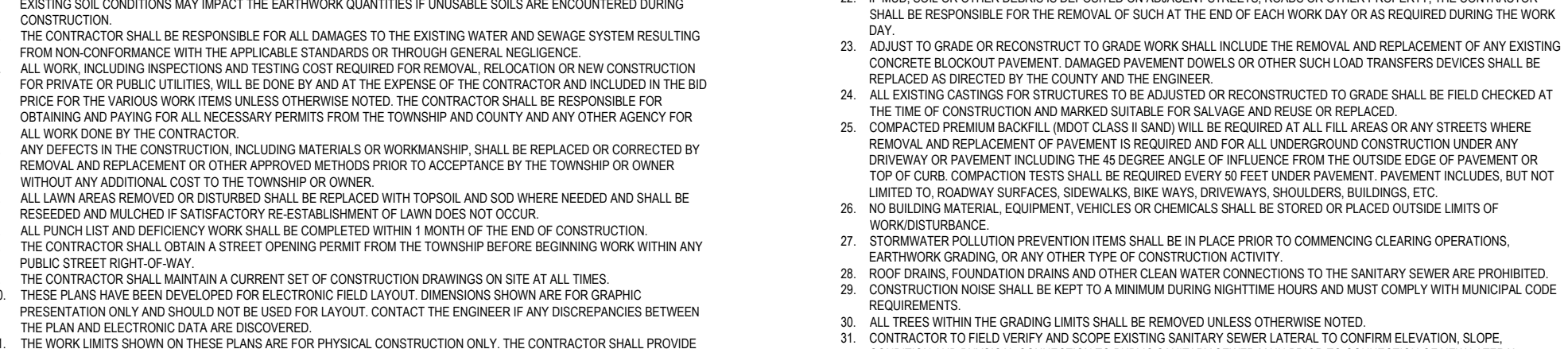
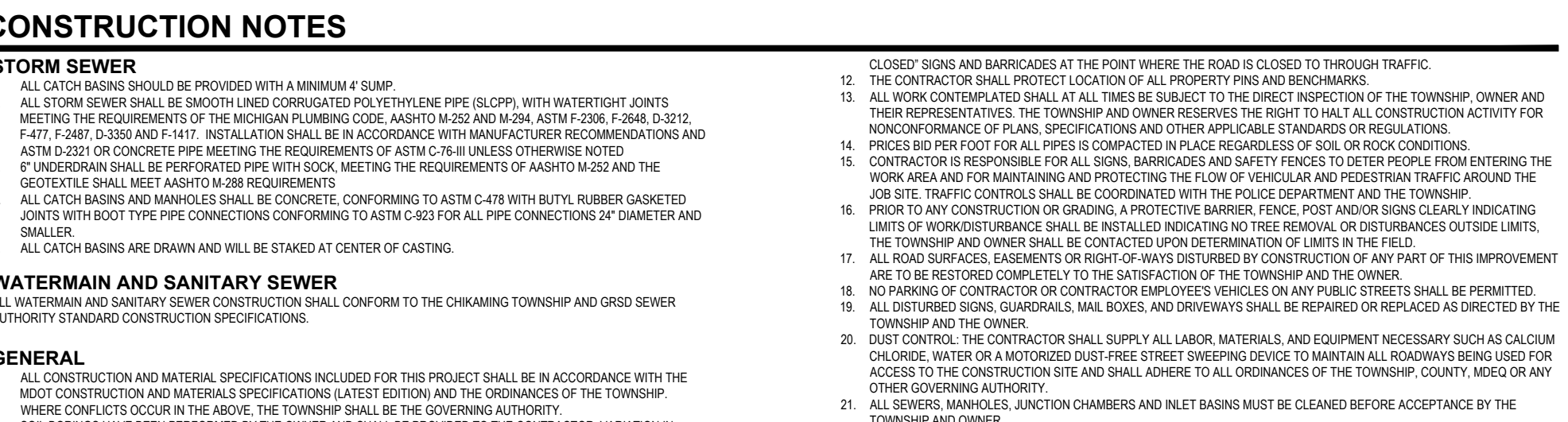
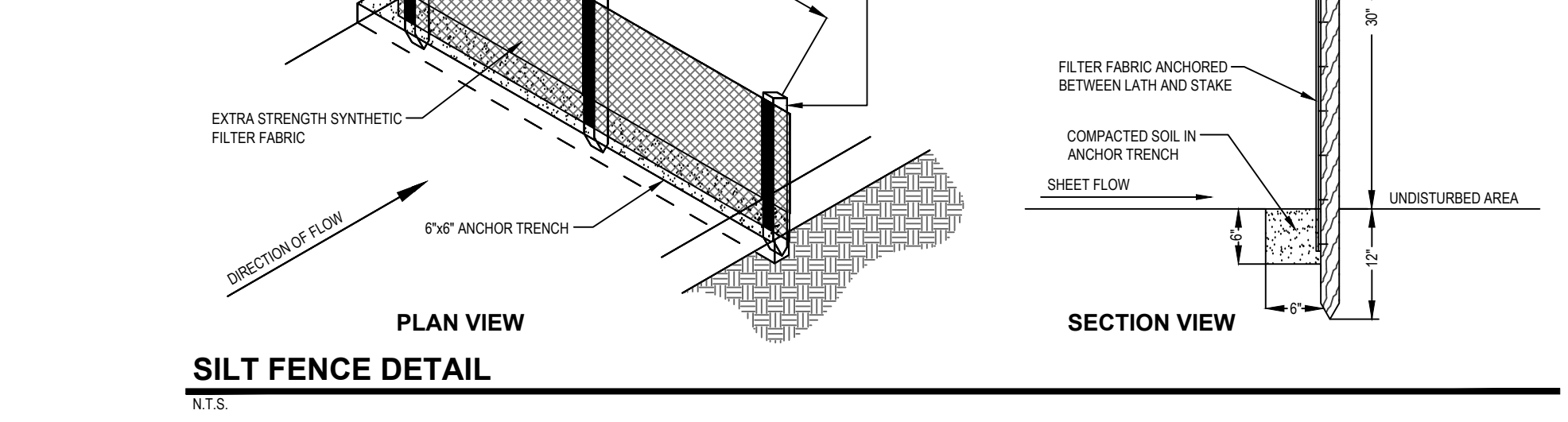
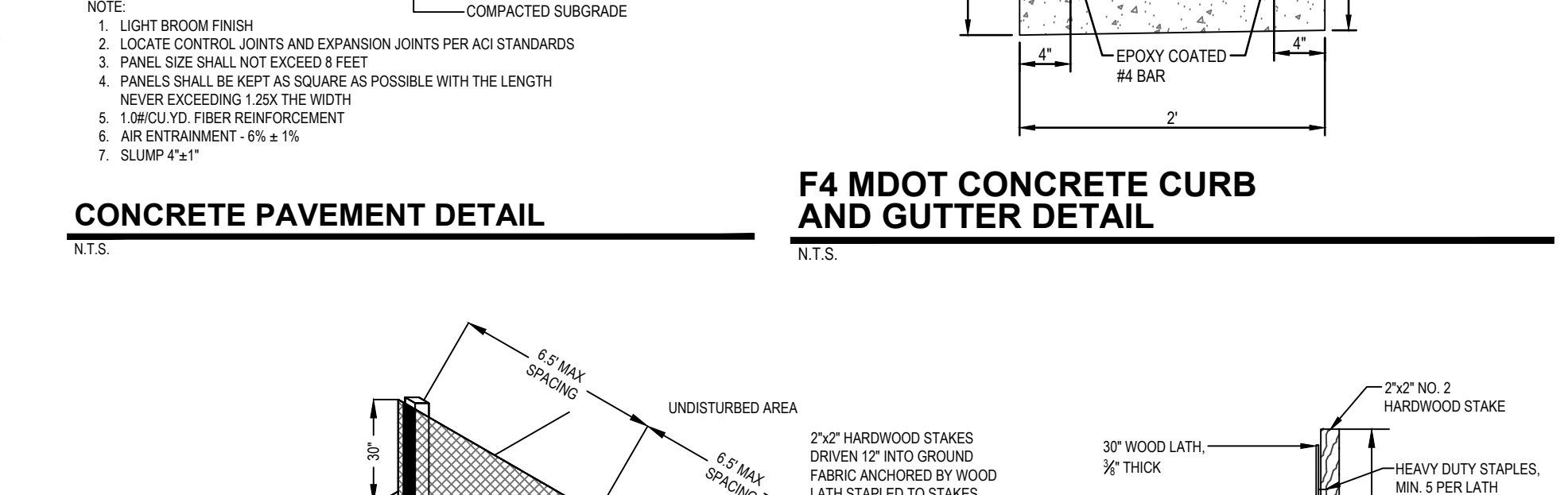
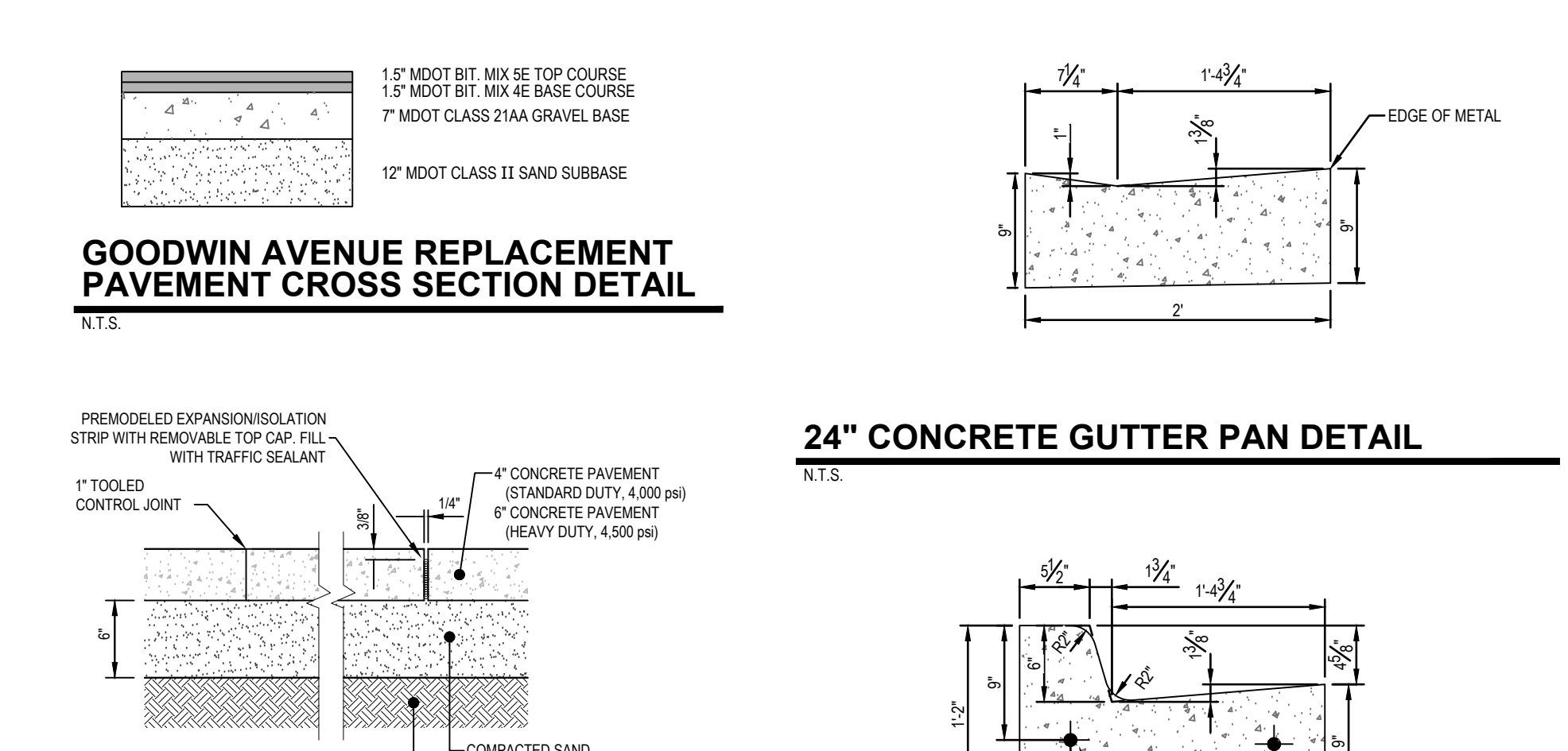
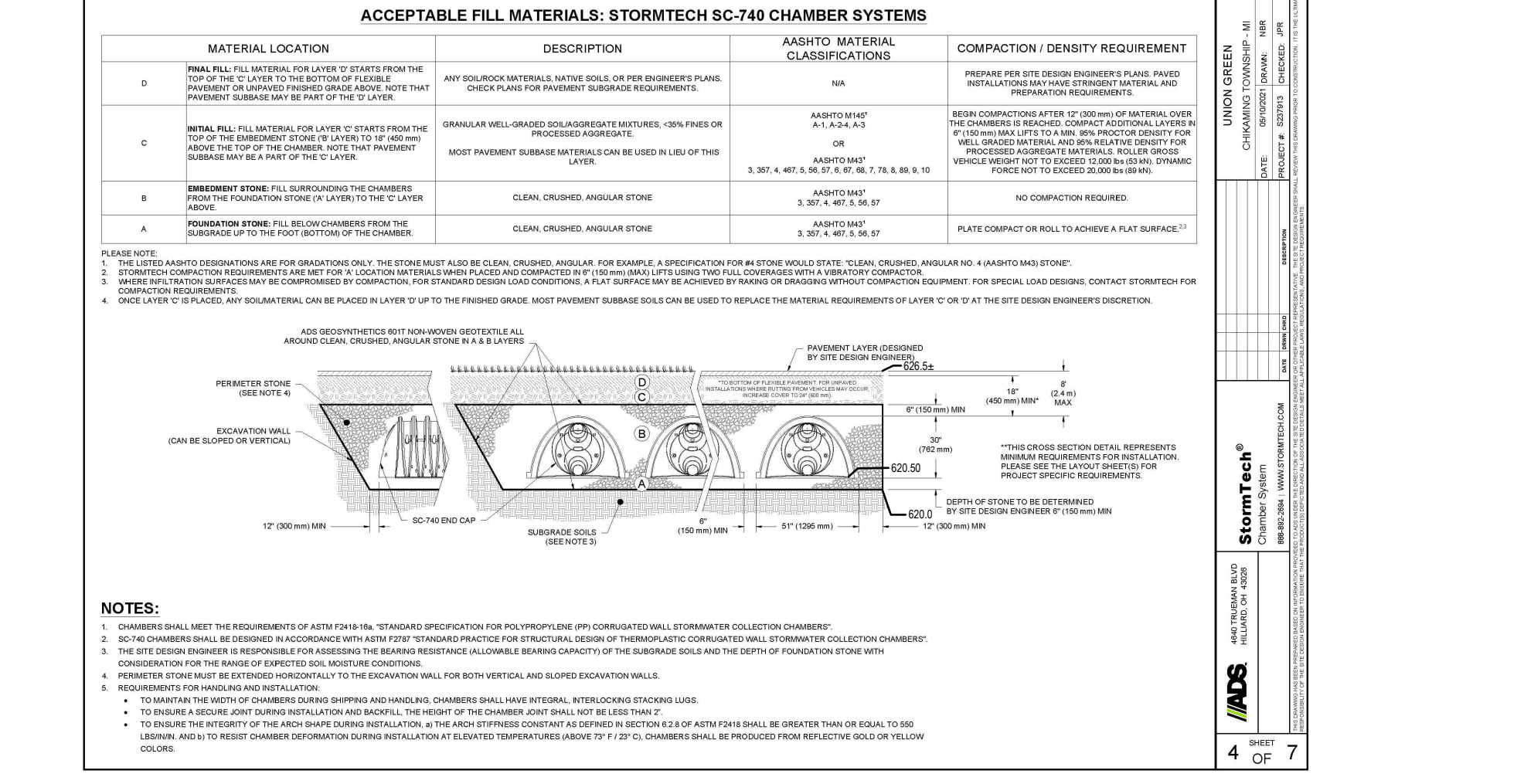
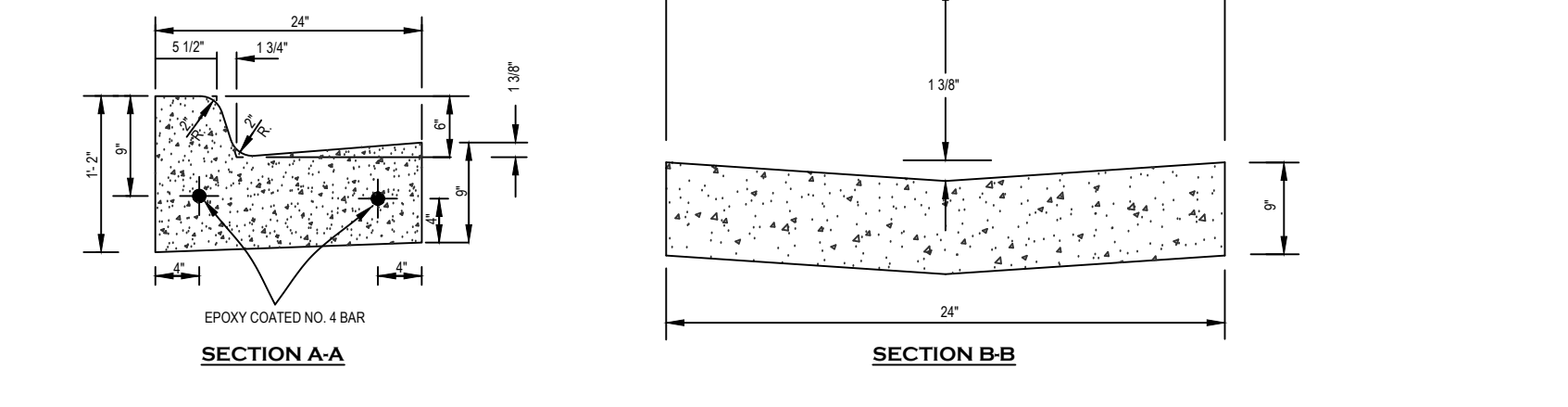
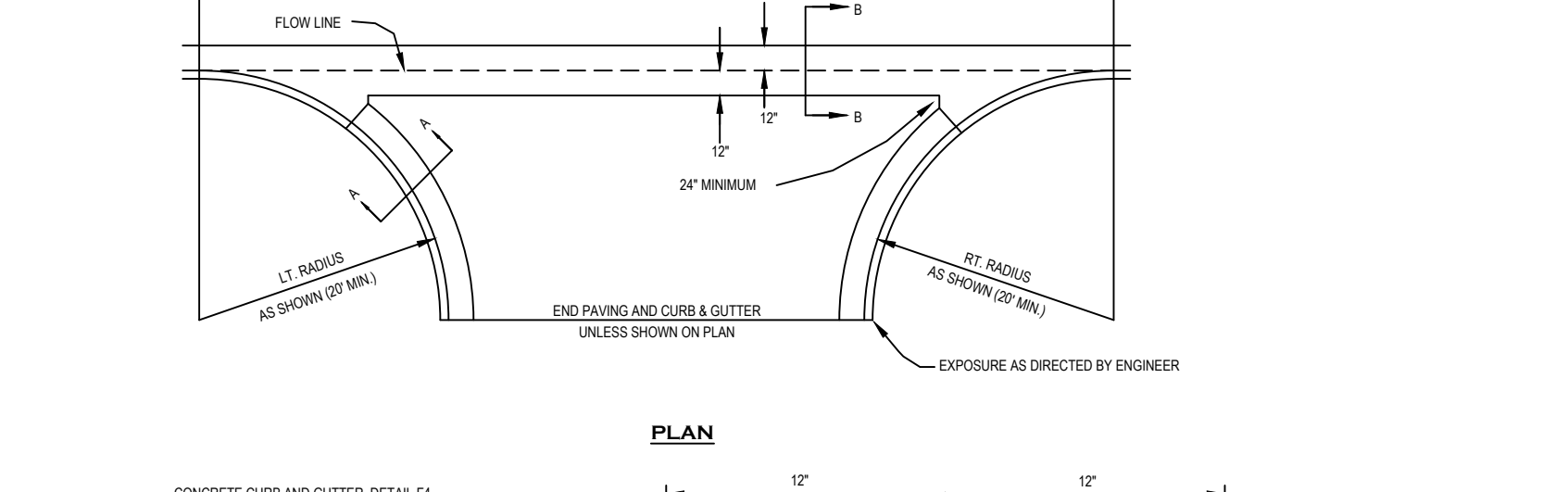
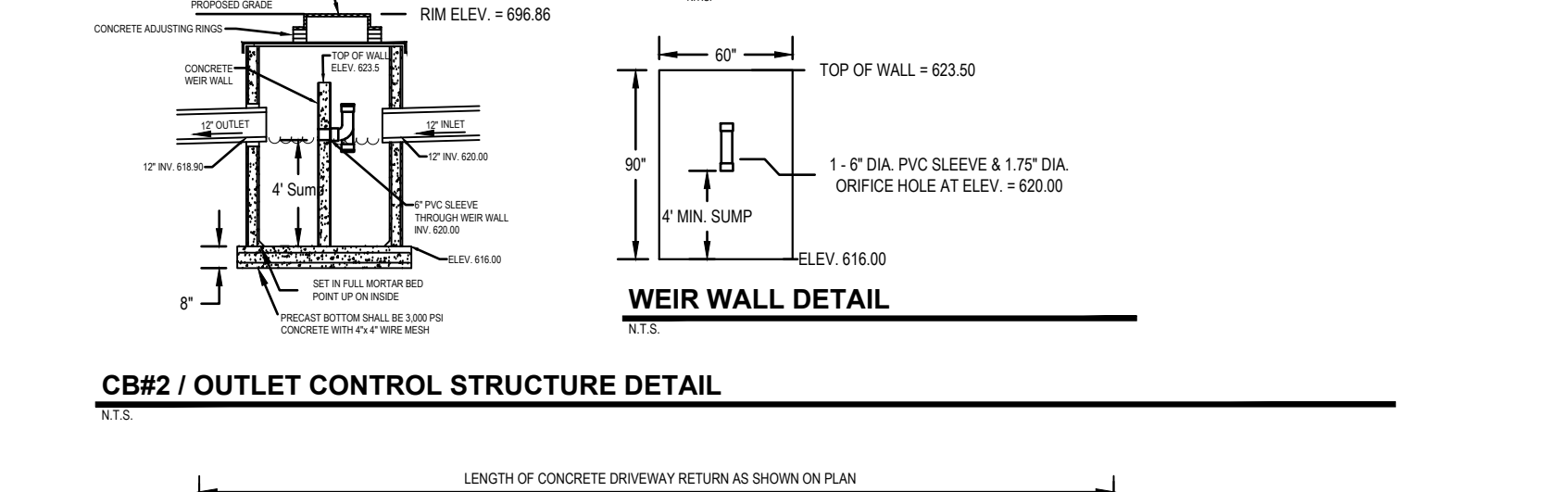
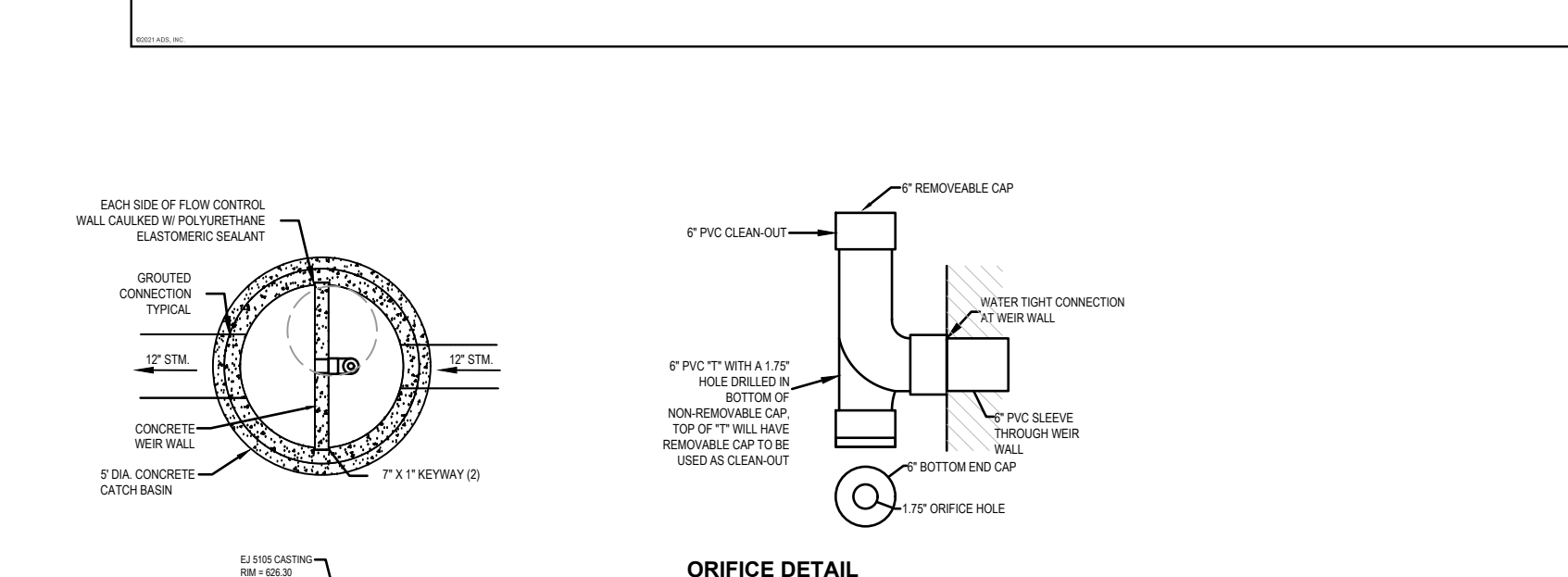
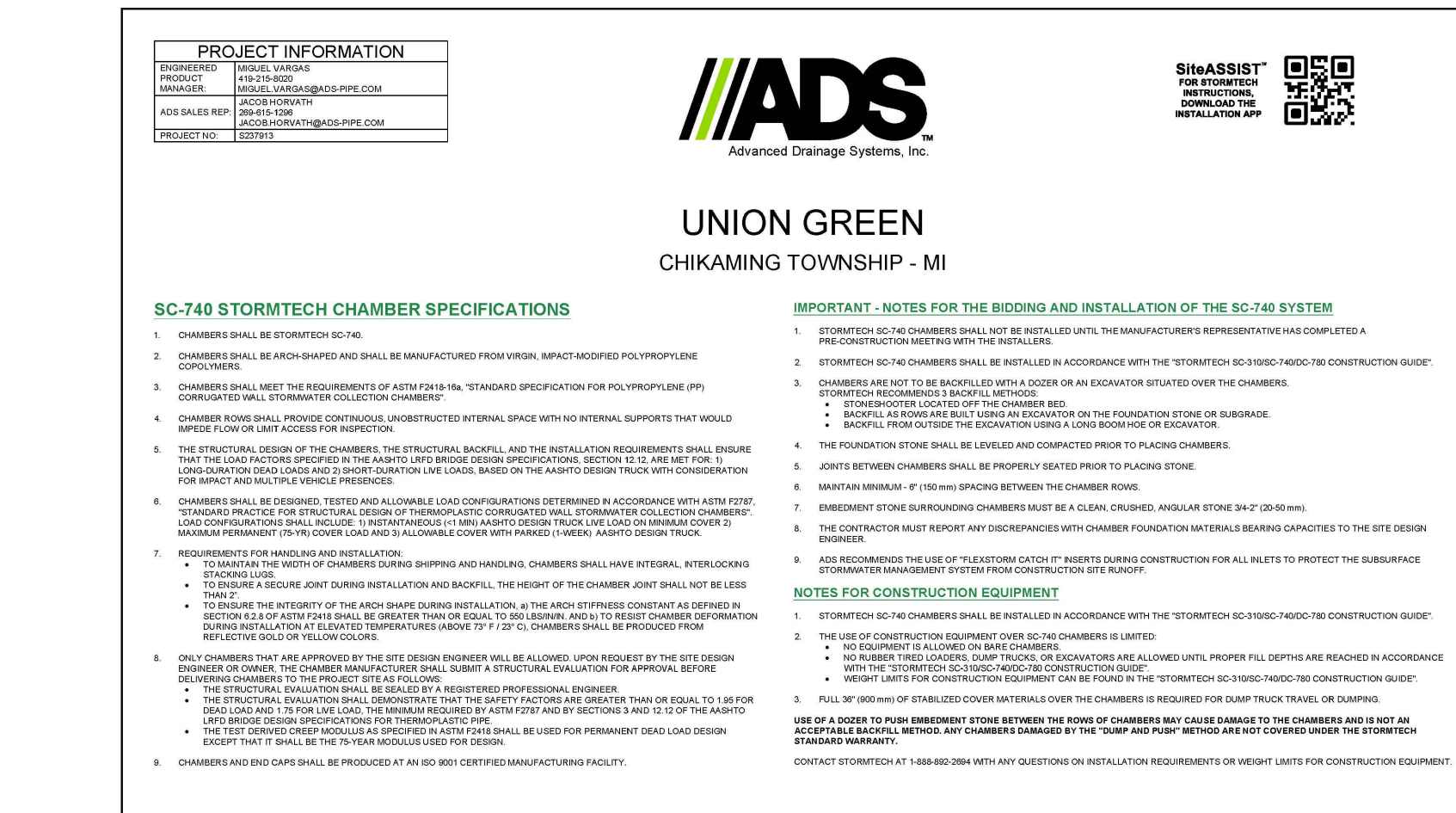
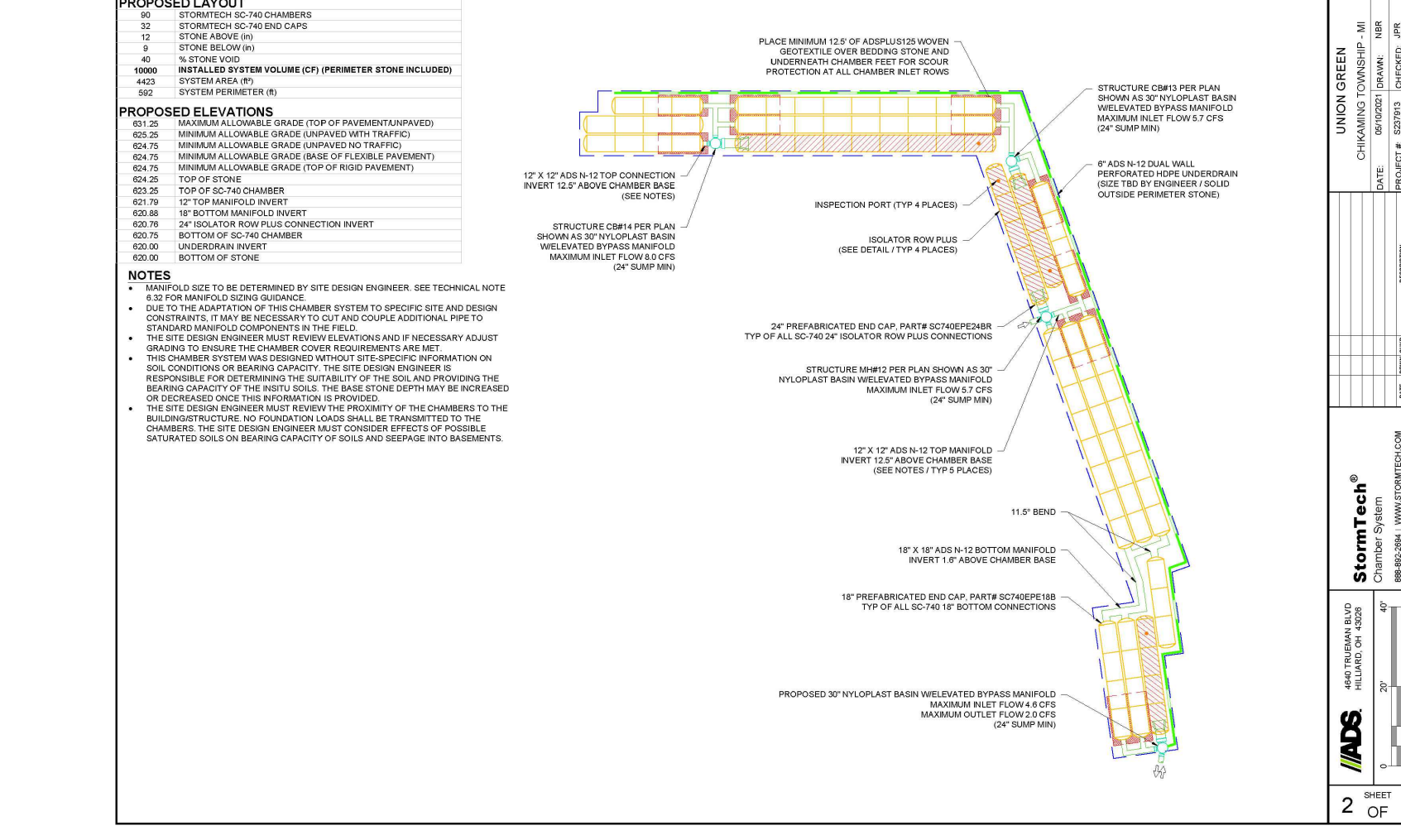
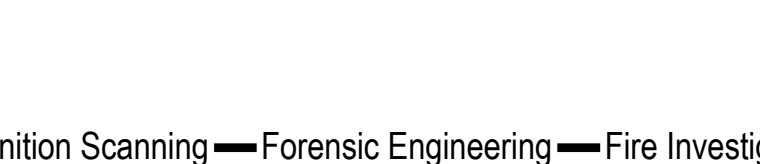
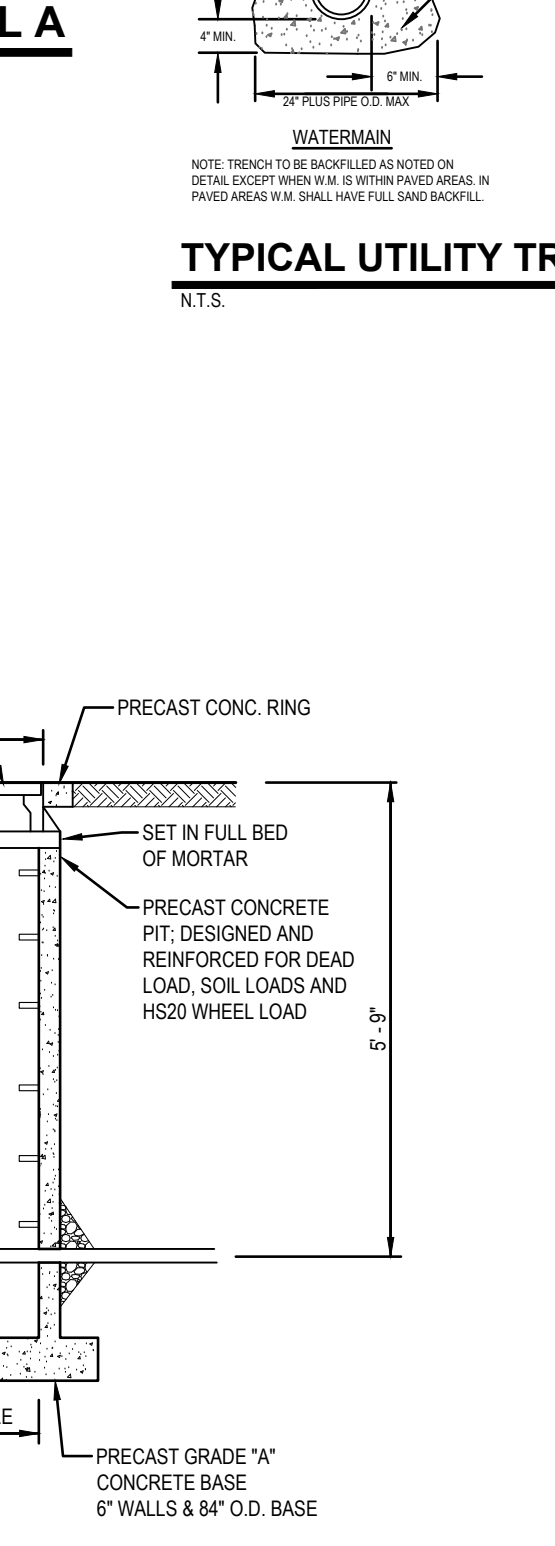
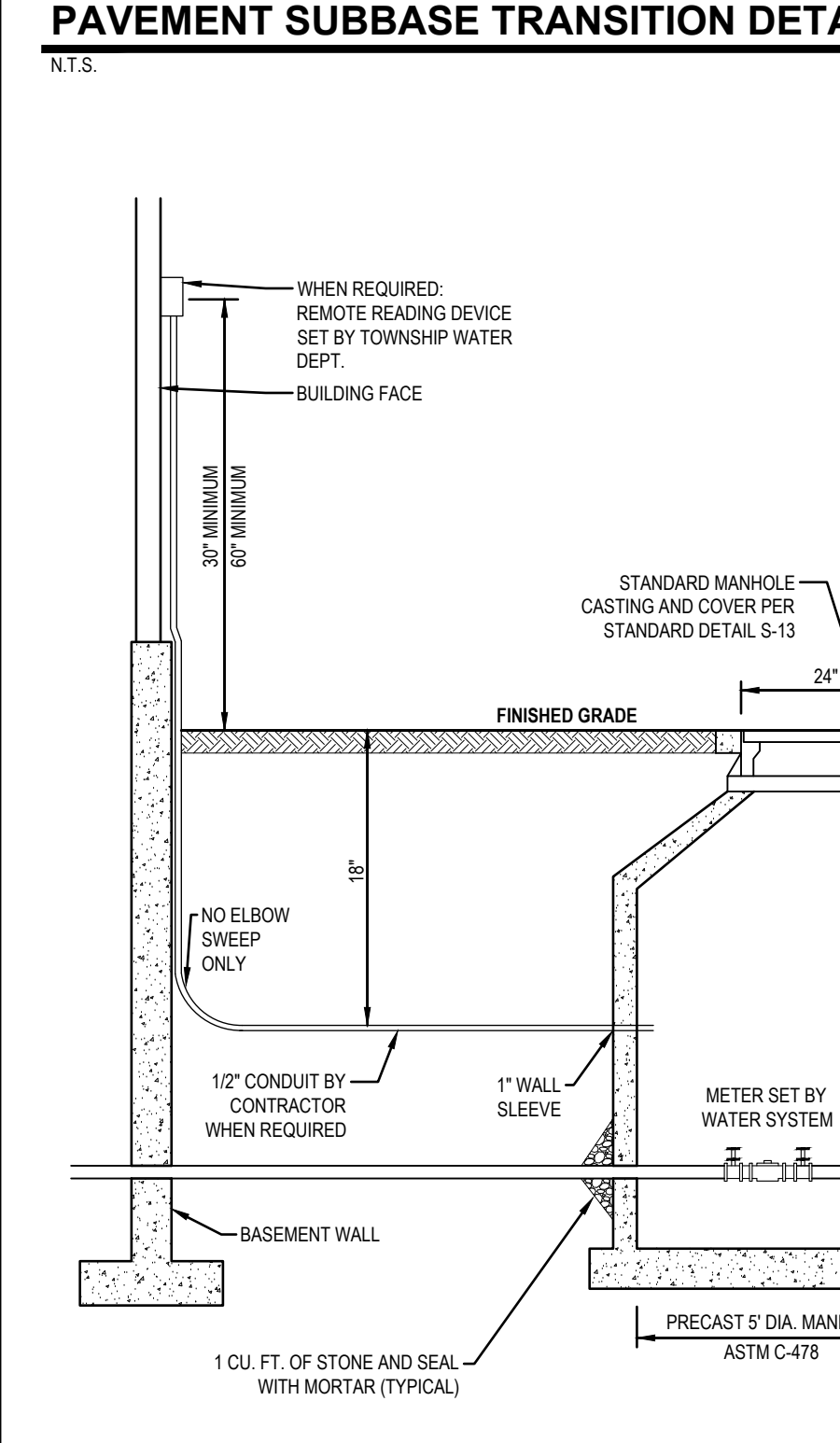
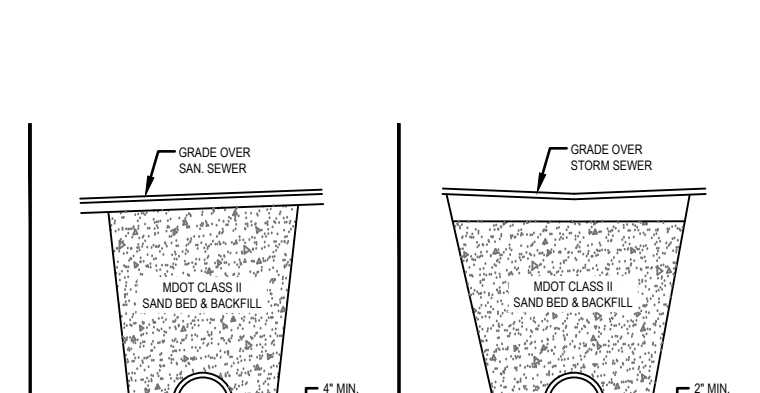
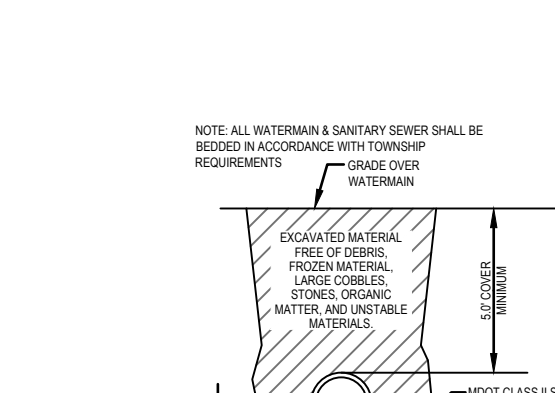
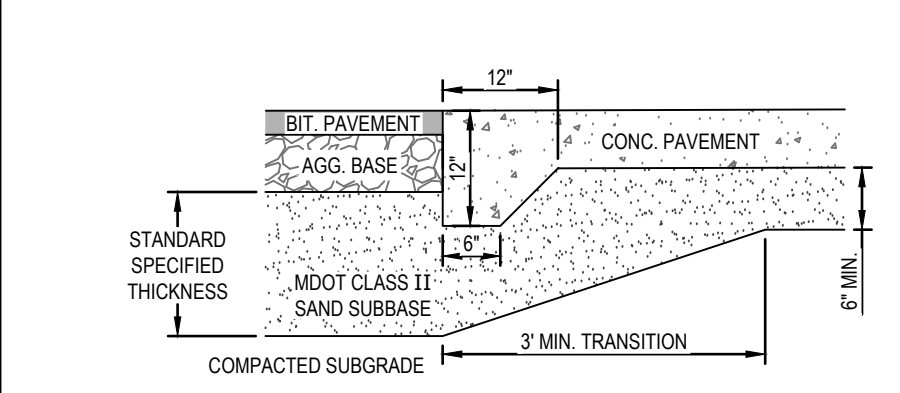
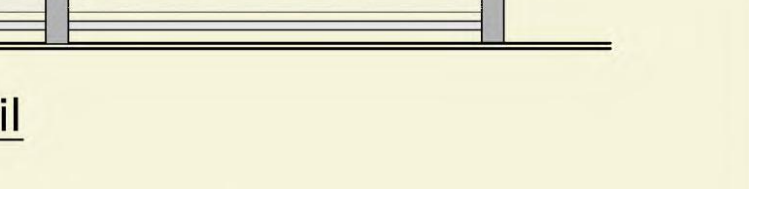
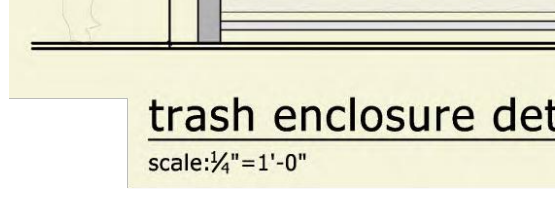
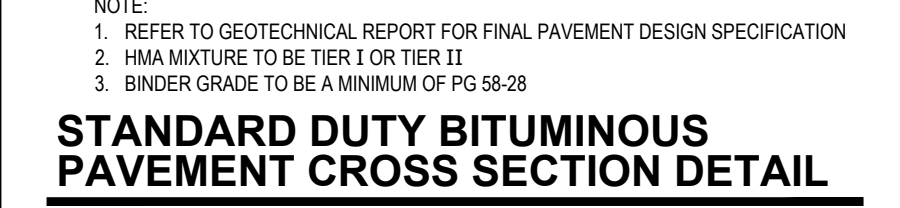
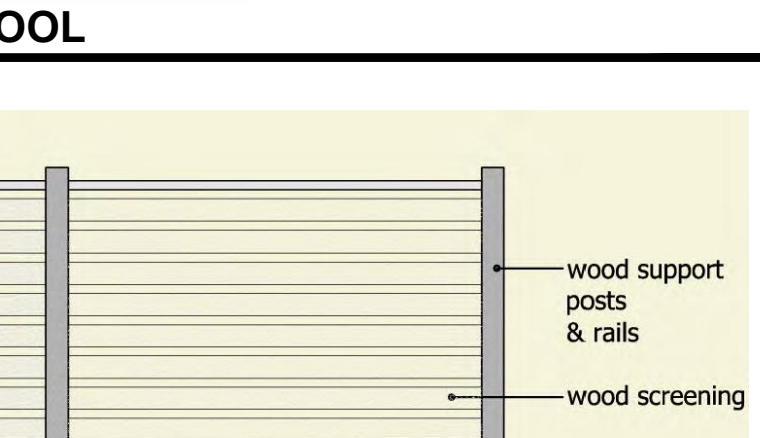
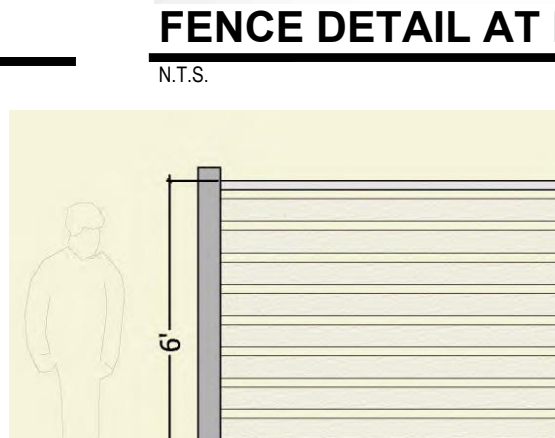
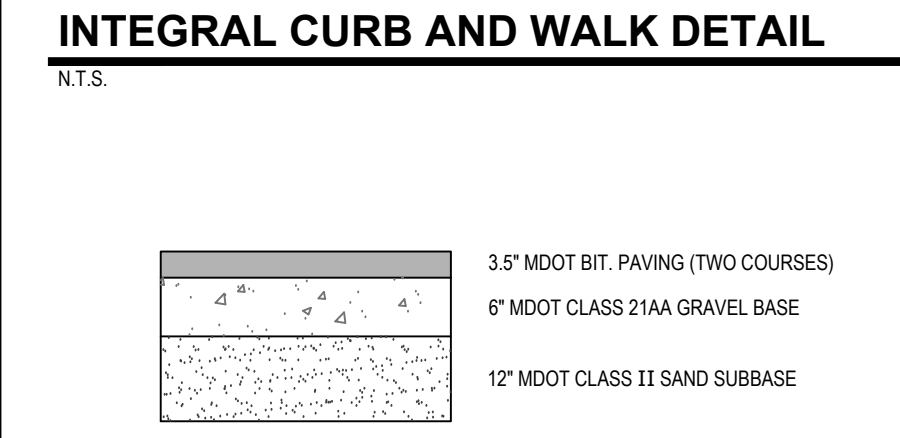
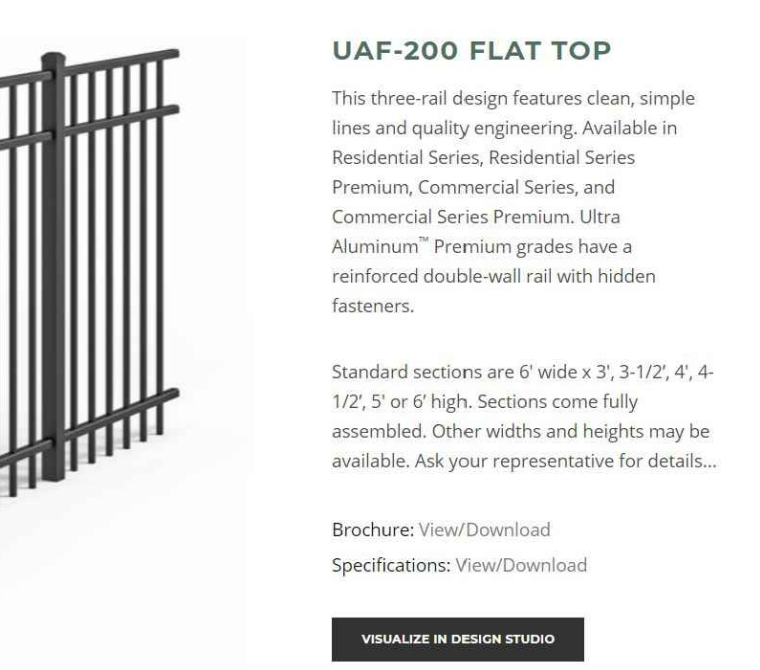
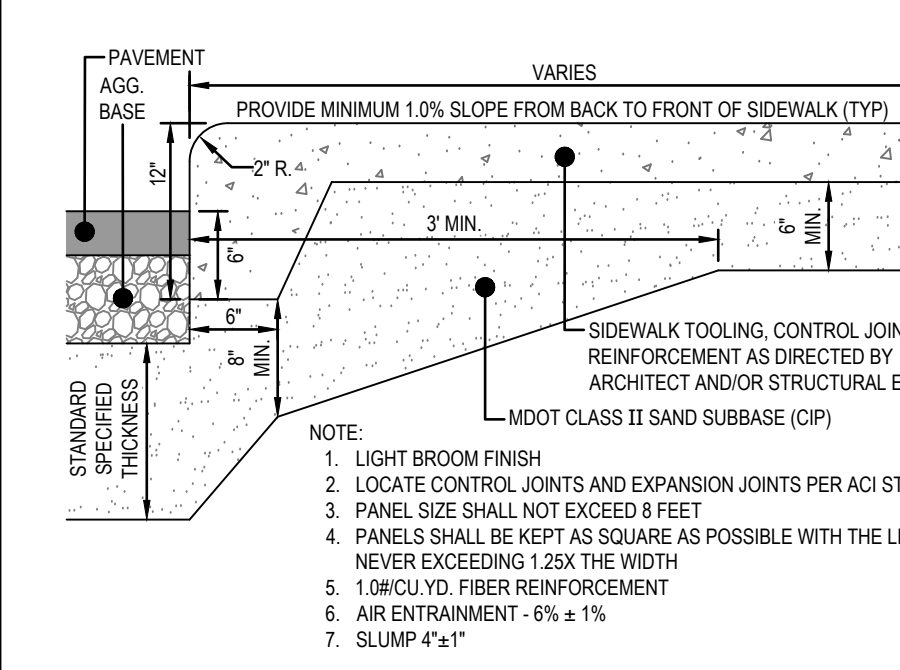
UTILITY LOCATIONS ARE DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.

NOTE:  
 EXISTING UTILITIES AND SERVICE LINES IDENTIFIED AS "PLANS" WERE OBTAINED FROM AVAILABLE AS-BUILT RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH AND STATUS OF ALL UTILITIES AND SERVICE LINES PRIOR TO NEW CONNECTIONS.



**SPECIFICATIONS FOR STANDARD BAGS BY NOMINAL SIZE**

NOMINAL BAG SIZE	SOLID STORAGE	PERCENT FLOWABLE AT 28 DAYS	MINIMUM CURING TIME
SMALL	11	12	0.00
MEDIUM	210	120	1.00
LARGE	130	210	1.00
XL	420	330	2.00



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217 Grand Hills Ave., Suite 302  
Grand Rapids, MI 49503  
Phone: 616.575.5190

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INDIANAPOLIS  
ST. LOUIS

**PREPARED FOR:**  
Union Pier Development LLC  
Att: Brad Rotishafer  
2050 Celadon Drive NE, Suite B  
Grand Rapids, MI 49525  
(616) 235-0711

**REVISIONS:**

Title	Drawn	Checked	Date
Township Submittal	Brad M.	Jack B.	05/05/2021
Road Department Submittal	Brad M.	Jack B.	05/12/2021
Drain Commissioner Submittal	Brad M.	Jack B.	05/12/2021
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Revised	Brad M.	Jack B.	09/20/2021
Owner/Developer	Brad M.	Jack B.	01/24/2022
Revised southern building location	Brad M.	Jack B.	02/11/2022
Revised	Brad M.	Jack B.	04/29/2022
Revised	Brad M.	Jack B.	06/09/2022
Client Revisions	Brad M.	Jack B.	08/02/2022

**UNION GREEN**  
CHIKAMING TOWNSHIP - MI

**Details & Specifications**  
16024 Red Arrow Highway  
PART OF THE SOUTHEAST 1/4 OF SECTION 25, T7S, R21W,  
CHIKAMING TOWNSHIP, BERRIEN COUNTY, MICHIGAN

**STAMP:**

STATE OF MICHIGAN  
ROGER JACK BARR II  
ENGINEER  
No. 41990  
Professional Engineer

**PROJECT NO:**  
21200264

**SHEET NO:**  
C-500