

GENERAL NOTES

- THE REQUIREMENTS OF THE CITY OF CLEVELAND, TOGETHER WITH THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING ALL SUPPLEMENTS THERETO IN FORCE ON DATE OF CONTRACT SHALL GOVERN ALL MATERIALS AND WORKMANSHIP INVOLVED IN THE IMPROVEMENTS SHOWN ON THESE PLANS EXCEPT AS SUCH SPECIFICATIONS ARE MODIFIED BY THE FOLLOWING SPECIFICATIONS, OR BY THE CONSTRUCTION DETAILS SET FORTH HEREIN.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY. IF A SOILS REPORT IS A PART OF THE CONSTRUCTION DOCUMENTS, IT SHALL TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES BETWEEN THE SOILS REPORT AND PLANS, ETC.
- THE INFORMATION SHOWN ON THE PLANS REGARDING EXISTING UTILITIES IS NOT REPRESENTED, WARRANTED OR GUARANTEED TO BE COMPLETE OR ACCURATE. INVESTIGATION, LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, PRIOR TO CONSTRUCTION TO DETERMINE IN THE FIELD THE ACTUAL LOCATION AND ELEVATIONS OF ALL EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. NO COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY THE CONTRACTORS WORK FORCE.
- QUANTITIES ARE ONLY ESTIMATES AND SHALL NOT BE USED BY THE CONTRACTOR FOR BID SUBMITTALS.
- THE CONTRACTOR'S BID SHALL BE COMPREHENSIVE AND INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT TO COMPLETE ALL EXCAVATION, FILL AND GRADING IN ACCORDANCE WITH ENGINEERING AND SPECIFICATIONS.
- ALL ITEMS OF WORK CALLED FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED, SHALL BE PERFORMED BY THE CONTRACTOR AND THE COST OF SAME SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS RELATED ITEMS.
- ALL SECTIONS REQUIRING EMBANKMENT AND COMPACTION SHALL BE SCALPED IN ACCORDANCE WITH O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS (201.03) CLEARING AND GRUBBING (201.04) SCALPING AND (203.12) EMBANKMENT.
- THE CONTRACTOR SHALL CONFINE ALL ACTIVITIES TO THE PROJECT SITE UNDER DEVELOPMENT OR THE EXISTING RIGHT-OF-WAYS, CONSTRUCTION AND PERMANENT EASEMENTS AND SHALL NOT TRESPASS UPON OTHER PRIVATE PROPERTY WITHOUT THE WRITTEN CONSENT OF THE OWNER.
- IN ADDITION TO DIRECT REQUIREMENTS OF THE CONTRACT SPECIFICATIONS, THE CONTRACTOR SHALL OBSERVE AND CONFORM TO THE SPECIFIC REQUIREMENTS OF ALL RIGHTS-OF-WAY INCLUDING EASEMENTS, RIGHTS-OF-ENTRY, OR ACTION FILED IN COURT IN ACCORDANCE WITH THE CODE OF APPLICABLE GOVERNING AGENCY. THE COST OF THE OPERATIONS NECESSARY TO FULFILL SUCH REQUIREMENTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PROJECT IMPROVEMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES OF THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS ALSO THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK.
- ALL WORK WITHIN THE RIGHTS OF WAY SHALL BE IN ACCORDANCE WITH THE GOVERNING JURISDICTION AND SPECIFICATIONS.
- THE CONTRACTOR SHALL RESTORE ALL OFFSITE DISTURBED AREAS TO AN EQUAL OR BETTER CONDITION THAN EXISTING PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- COST FOR REMOVAL AND DISPOSAL OF ANY TREES, BRUSH AND STUMPS SHALL BE INCLUDED IN PRICE BID.
- THE CONTRACTOR SHALL REFER TO THE UTILITY PLAN & PROFILE DRAWINGS TO DETERMINE AND VERIFY ALL CRITICAL UTILITY CROSSINGS. IN THE EVENT A CONFLICT EXISTS, CONTACT THE DESIGN ENGINEER IMMEDIATELY.
- PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL SECURE ALL NECESSARY LICENSES AND PERMITS, AND PAY ANY INSPECTION FEES.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO SCHEDULE ALL NEEDED INSPECTIONS WITH THE APPLICABLE AGENCIES.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND EASEMENTS PRIOR TO CONSTRUCTION.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE FOR ADEQUATE DRAINAGE AND PROPER SOIL EROSION CONTROL MEASURES FOR PROTECTION OF ALL ADJACENT ROADS AND LANDS, AS SPECIFIED ON THE PLANS.
- PRIOR TO PAVING THE CONTRACTOR SHALL VERIFY ALL PROPOSED GRADES AND VERIFY 2% MAXIMUM SLOPE FOR ALL ADA AREAS. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST.
- IN SLOPE AREAS GREATER THAN 3:1, THE CONTRACTOR SHALL REFER TO THE OWNER'S LANDSCAPING PLAN FOR SPECIAL VEGETATION REQUIREMENTS AND PLANTINGS TO PREVENT SOIL EROSION AND MAINTAIN INTEGRITY OF THE SLOPE.
- THE CONTRACTOR SHALL USE CONCRETE WITH A MINIMUM 28 DAY STRENGTH OF 3000 P.S.I. WITH AIR ENTRAINMENT, UNLESS SPECIFIED OTHERWISE.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE SUPERVISING CONSTRUCTION ENGINEER IF A PAVEMENT OR FOUNDATION STAKE IS DISTURBED.
- THE CONTRACTOR SHALL CONSTRUCT PAVEMENT IN ACCORDANCE WITH TYPICAL PAVEMENT SECTION DETAILS OR AS SPECIFIED IN A GEOTECHNICAL ANALYSIS. THE FINISH PAVEMENT GRADES SHALL CONFORM TO THOSE SPECIFIED ON THE SITE GRADING PLAN.
- THE SOILS ENGINEER SHALL APPROVE ALL SUBBASE MATERIAL AND COMPACTION IN FILL AREAS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR EMPLOYING A REGISTERED SOIL ENGINEER TO PROVIDE TESTING AS REQUIRED BY THE CITY.
- COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 IS REQUIRED OF ALL CONTRACTORS ON THIS PROJECT.
- TRENCHES UNDER EXISTING OR PROPOSED PAVED AREAS OR DRIVES SHALL BE BACKFILLED WITH CLASS "B" BEDDING, FROM THE TOP OF THE BEDDING MATERIAL TO THE PAVEMENT SUBGRADE OR TO A PLANE 6 INCHES BELOW THE TOP OF THE GROUND, BETWEEN THE LIMITS OF FIVE (5) FEET BEYOND THE EDGE OF PAVEMENT, PAVED SHOULDER, OR THE BACK OF CURB. UNLESS OTHERWISE SHOWN, TRENCHES NOT UNDER EXISTING OR PROPOSED PAVED AREAS BUT WITHIN EXISTING OR PROPOSED RIGHT-OF-WAY OR LAWN AREAS SHALL BE CLASS "C" BEDDING, MEETING REQUIREMENTS OF O.D.O.T. ITEM 203. ANY SETTLEMENT WHICH OCCURS DURING THE GUARANTEE PERIOD SHALL BE REPAIRED AT NO COST TO THE LOCAL MUNICIPALITY OR THE OWNER.
- ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".

- TYPE C STEADY BURN LIGHTS SHALL BE USED ON ALL BARRICADES, DRUMS AND SIMILAR TRAFFIC CONTROL DEVICES IN USE AT NIGHT.
- ADEQUATE LIGHTS, SIGNS AND BARRICADES SHALL BE USED AS REQUIRED IN ITEM 614 O.D.T.S. TO SAFEGUARD THE TRAVELING THE PUBLIC AT ALL TIMES.
- ALL PERTINENT STANDARD CONSTRUCTION DRAWINGS ARE AVAILABLE UPON REQUEST AT THE OFFICES OF THE CITY & COUNTY ENGINEER.
- NO MATERIALS OR EQUIPMENT SHALL BE STORED WITHIN PUBLIC RIGHT-OF-WAY OR WITHIN FIFTY (50) FEET OF ANY INTERSECTING STREET, DRIVEWAY, DITCH, STREAM OR EXISTING WETLAND. COMPLIANCE WITH THESE REQUIREMENTS ALONG WITH ADDITIONAL PROVISIONS OF THE CONTRACTOR SPECIFICATIONS SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS LEGAL RESPONSIBILITIES OR LIABILITIES FOR THE SAFETY OF THE PUBLIC. THE CONTRACTOR SHALL INDICATED HIS INTENT WITH REGARD TO STORAGE OF MATERIAL AT THE PRECONSTRUCTION MEETING.
- THE CONTRACTOR SHALL PERFORM FIELD RECONNAISSANCE TO BECOME ACQUAINTED WITH THE EXISTING SITE CONDITIONS AND THE POTENTIAL EFFECTS UPON THE WORK SCOPE.
- NO DRAINAGEWAYS OR SWALES SHALL BE BLOCKED OVERNIGHT OR DURING NON-WORK DAYS WHEN WORKERS ARE NOT ON SITE.

UTILITY NOTES

- THE LOCATIONS OF THE UTILITIES SHOWN ON THESE PLANS HAVE BEEN OBTAINED THROUGH INFORMATION PROVIDED BY THE VARIOUS UTILITY COMPANIES AND BY FIELD SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND EXPOSING UTILITIES. THE CONTRACTOR SHALL CONTACT THE OHIO UTILITIES PROTECTION SERVICE AT 1-800-362-2764 AND EACH UTILITY COMPANY AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING ANY CONSTRUCTION WHICH MAY INVOLVE A UTILITY COMPANY'S UNDERGROUND FACILITIES.
- THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE LOCATION OF THE EXISTING UTILITIES SHOWN ON THESE PLANS. IN THE EVENT THE CONTRACTOR'S SITE INVESTIGATION INDICATES A POSSIBLE CONFLICT IN ELEVATIONS OR LOCATIONS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY FOR PLAN REVISION EVALUATION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES INCLUDING STORM SEWERS AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT.
- PLACEMENT OF UTILITY CONDUIT OR SLEEVES FOR GAS, ELECTRIC, SITE ELECTRIC AND TELECOMMUNICATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE PLAN DETAILS SHOWN HEREIN AND IN CONFORMANCE TO THE REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS AND LABOR TO COMPLETE THE INSTALLATION AND BACKFILL OF THE GAS, ELECTRIC, AND TELECOMMUNICATION FACILITIES.
- THE CONTRACTOR SHALL DISPOSE OF ALL SURPLUS EXCAVATION AT HIS OWN EXPENSE AND AS APPROVED BY THE OWNER'S REPRESENTATIVE.
- ALL FIELD TILE BROKEN DURING EXCAVATION SHALL BE REPLACED TO ORIGINAL CONDITION OR CONNECTED TO THE CURB SUB-DRAIN OR TO THE STORM SEWER SYSTEM AS DIRECTED BY THE ENGINEER.
- ALL EXISTING INVERTS ALONG WITH THE PROPOSED TOP OF CASTING ELEVATIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OF THE SEWER SYSTEMS.
- THE COST OF ANY ROCK EXCAVATION AND/OR DEWATERING OPERATIONS REQUIRED FOR THE CONSTRUCTION OF SITE UTILITIES SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS ITEMS.

SURVEY NOTES

- THE BOUNDARY INFORMATION SHOWN HEREON IS FROM A SURVEY PREPARED BY RICHARD A. THOMPSON, JR., DATED SEPTEMBER 21, 2015 AND AMENDED FROM AS-BUILT DATA.
- UTILITY LOCATIONS ON THIS SURVEY ARE REPORTED FROM FIELD LOCATIONS OR INFORMATION PROVIDED BY UTILITY REPRESENTATIVES. THIS DOES NOT MEAN THERE COULD NOT BE OTHER UTILITIES IN THE AREA.

SITE IMPROVEMENTS FOR FAMILY MINISTRY CENTER

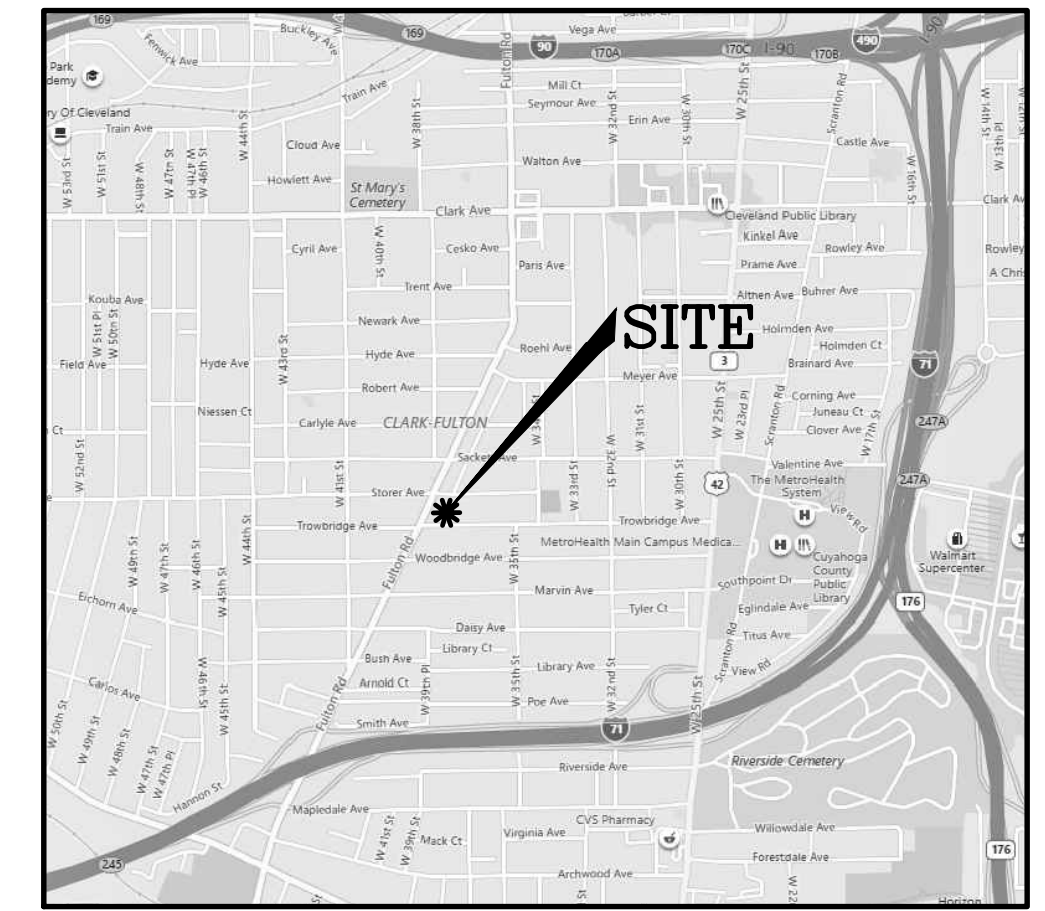
3389 FULTON RD, CLEVELAND, OH 44109

OWNER INFORMATION

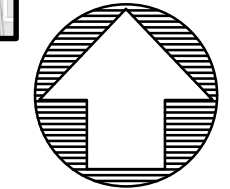
ADDRESS:
 FAMILY MINISTRY CENTER
 3389 FULTON ROAD
 CLEVELAND, OH 44109

CONTACT:
 JULIE A. JONES
 EXECUTIVE DIRECTOR
 P: 1-216-398-8420 (X101)
 E: JULIE.JONES@CLEVELANDFMC.ORG

SITE SUPERVISOR:
 AMY DUTT
 URBAN WILD LTD.
 WWW.URBANWILDDSIGN.COM
 P: 740 972-2337
 E: URBANWILDDSIGNANDPLANNING@GMAIL.COM

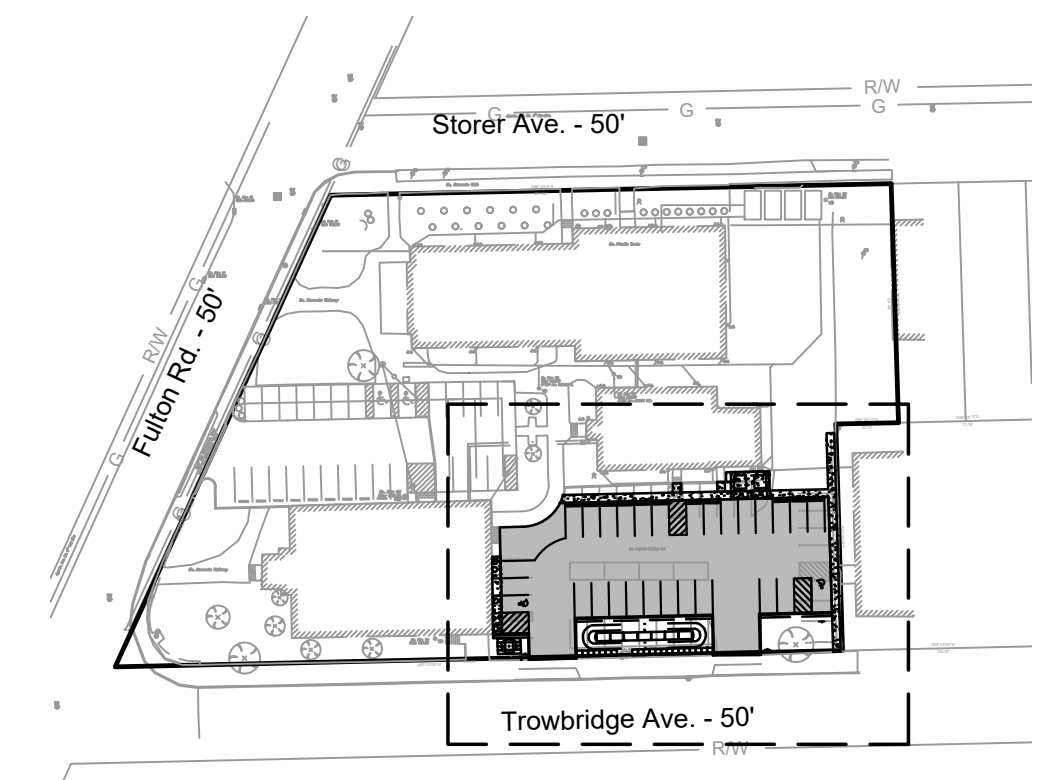


LOCATION MAP
NO SCALE



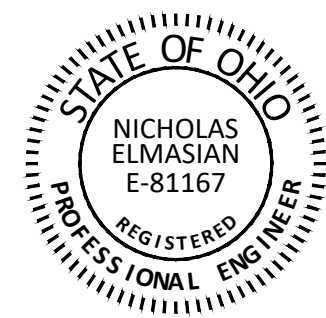
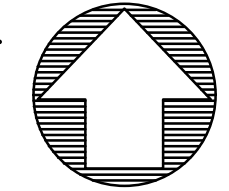
INDEX OF SHEETS

- 1.....TITLE SHEET
- 2.....DEMOLITION PLAN
- 3.....SITE DIMENSION PLAN
- 4.....GRADING & UTILITY PLAN
- 5.....DETAILS
- 6.....DETAILS



OVERALL SITE REFERENCE

SCALE: 1" = 100'
 0 100 200 FEET



Utilities Protection SERVICE
Call Before You Dig
 1-800-362-2764
 CALL TWO WORKING DAYS BEFORE YOU DIG (NON MEMBERS MUST BE CALLED DIRECTLY)

THIS IS TO CERTIFY THAT GOOD ENGINEERING PRACTICES HAVE BEEN UTILIZED IN THE DESIGN OF THIS PROJECT AND THAT ALL OF THE MINIMUM STANDARDS HAVE BEEN MET, INCLUDING THOSE STANDARDS GREATER THAN MINIMUM WHERE, IN MY OPINION, THEY ARE NEEDED TO PROTECT THE SAFETY OF THE PUBLIC. ANY VARIANCES TO THE ABOVE STANDARDS ARE CONSISTENT WITH SOUND ENGINEERING PRACTICE AND ARE NOT DETRIMENTAL TO PUBLIC SAFETY AND CONVENIENCE.

REGISTERED ENGINEER E-81167 DATE

ISSUE/SUBMITTAL	DATE	REVISIONS	DATE
PRELIMINARY SUBMITTAL			
SUBMIT FOR SIGNATURES			

C:\USERS\ELMASIAN\ELMASIAN ENGINEERING, LLC\ONE DRIVE - ELMASIAN ENGINEERING, LLC\UW\UW\02\CADD\UW\02 SITE.DWG 5/14/2019

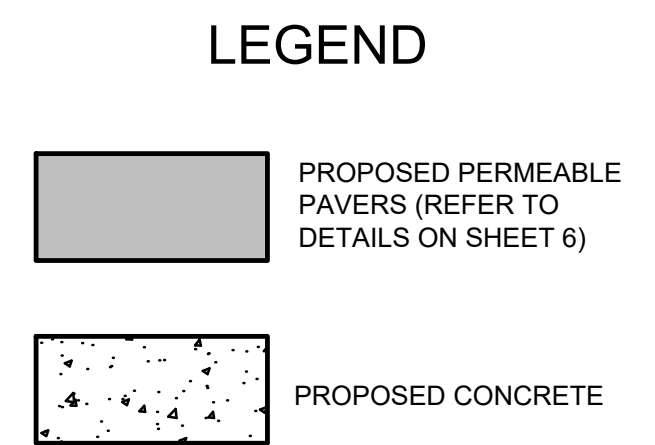
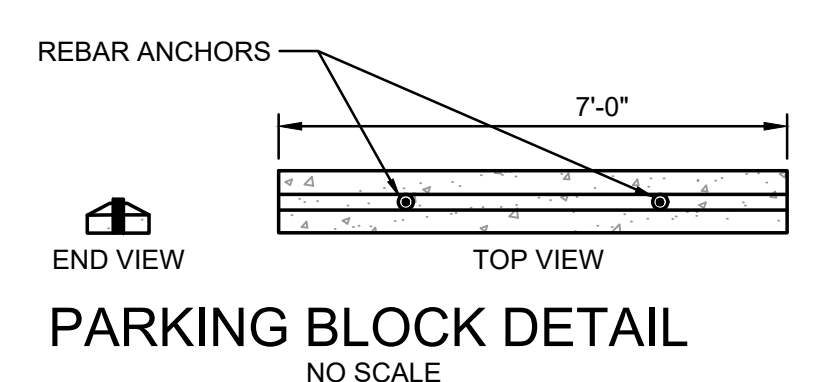
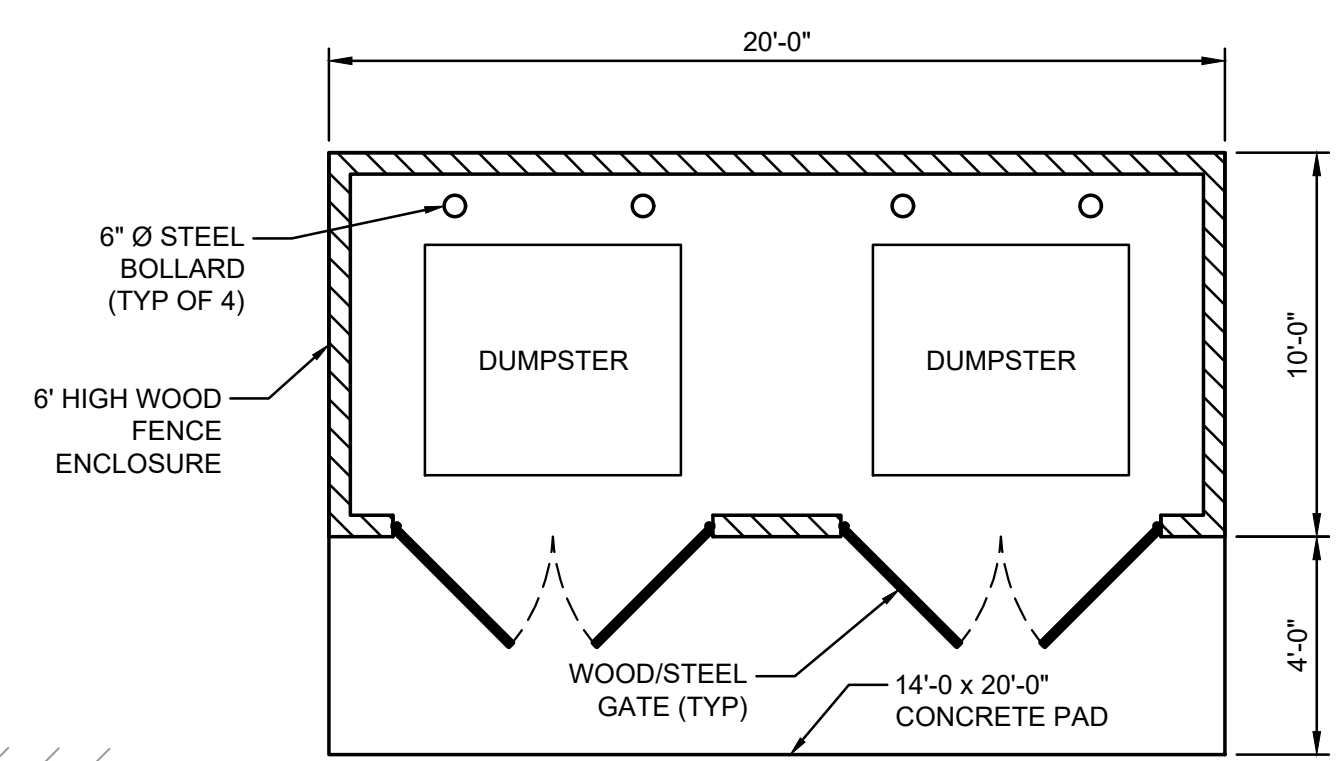
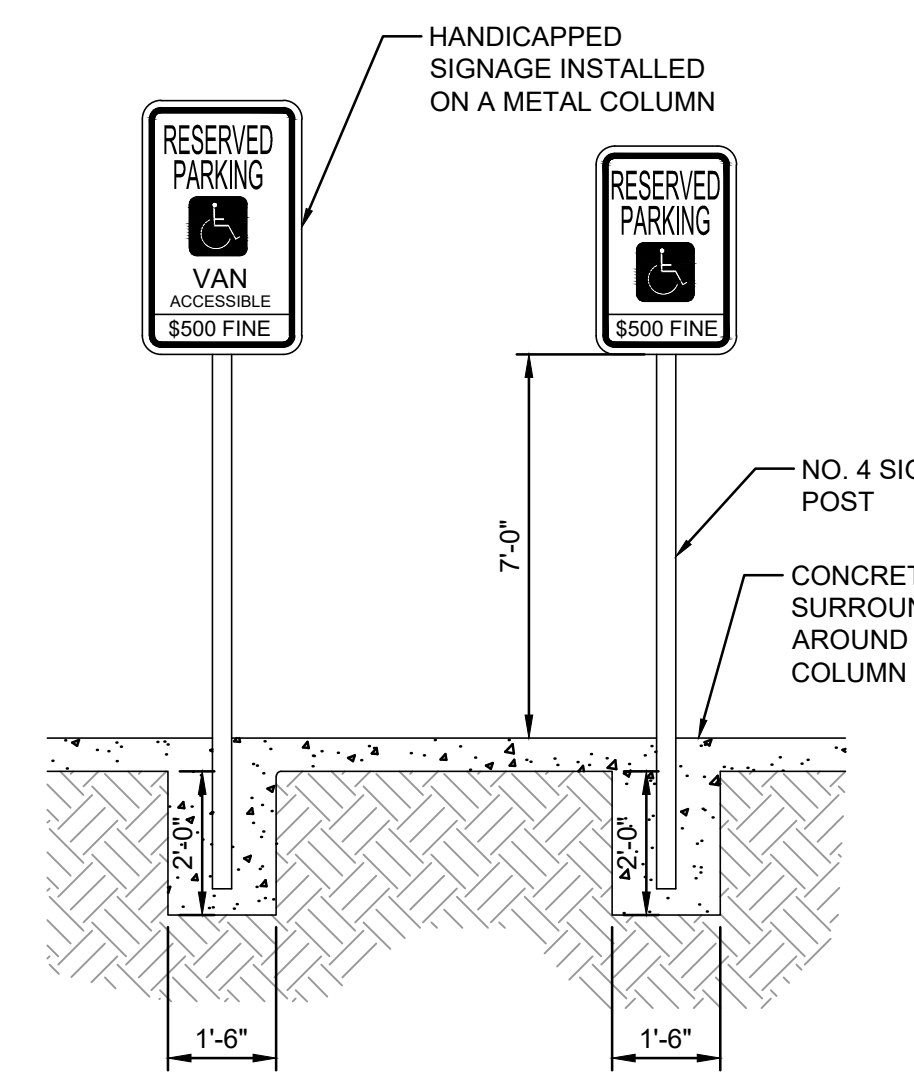
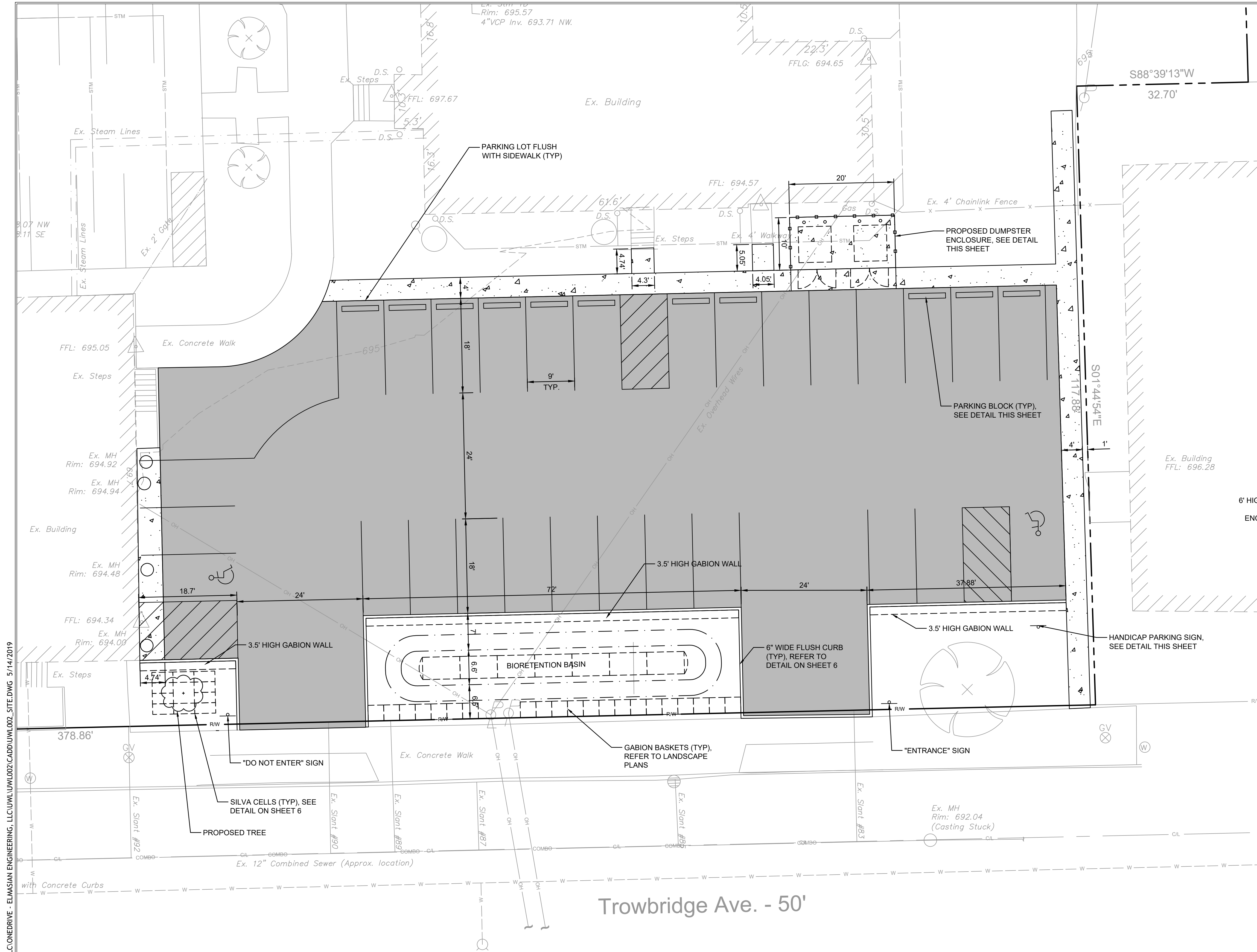
elmasian engineering, LLC
 PO BOX 626
 PATASKALA, OH 43062
 PH: 614-349-2002
 www.elmasian.net



NO.	DATE	BY

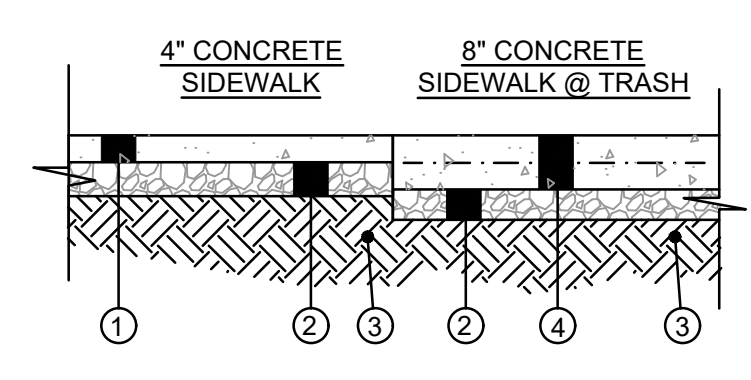
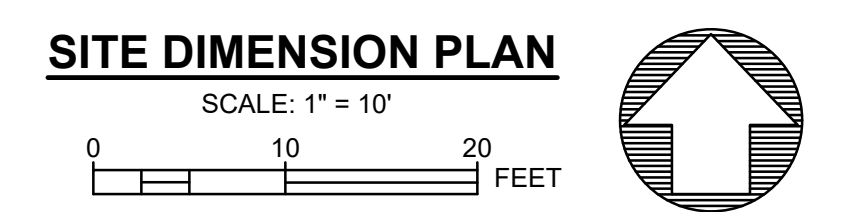
TITLE SHEET
FAMILY MINISTRY CENTER
 3389 FULTON RD., CLEVELAND, OH 44109

DATE: 5/14/2019
 SCALE: N/A
 SHEET NO: 1 OF 6
 FILE NO: UW002



NOTES:

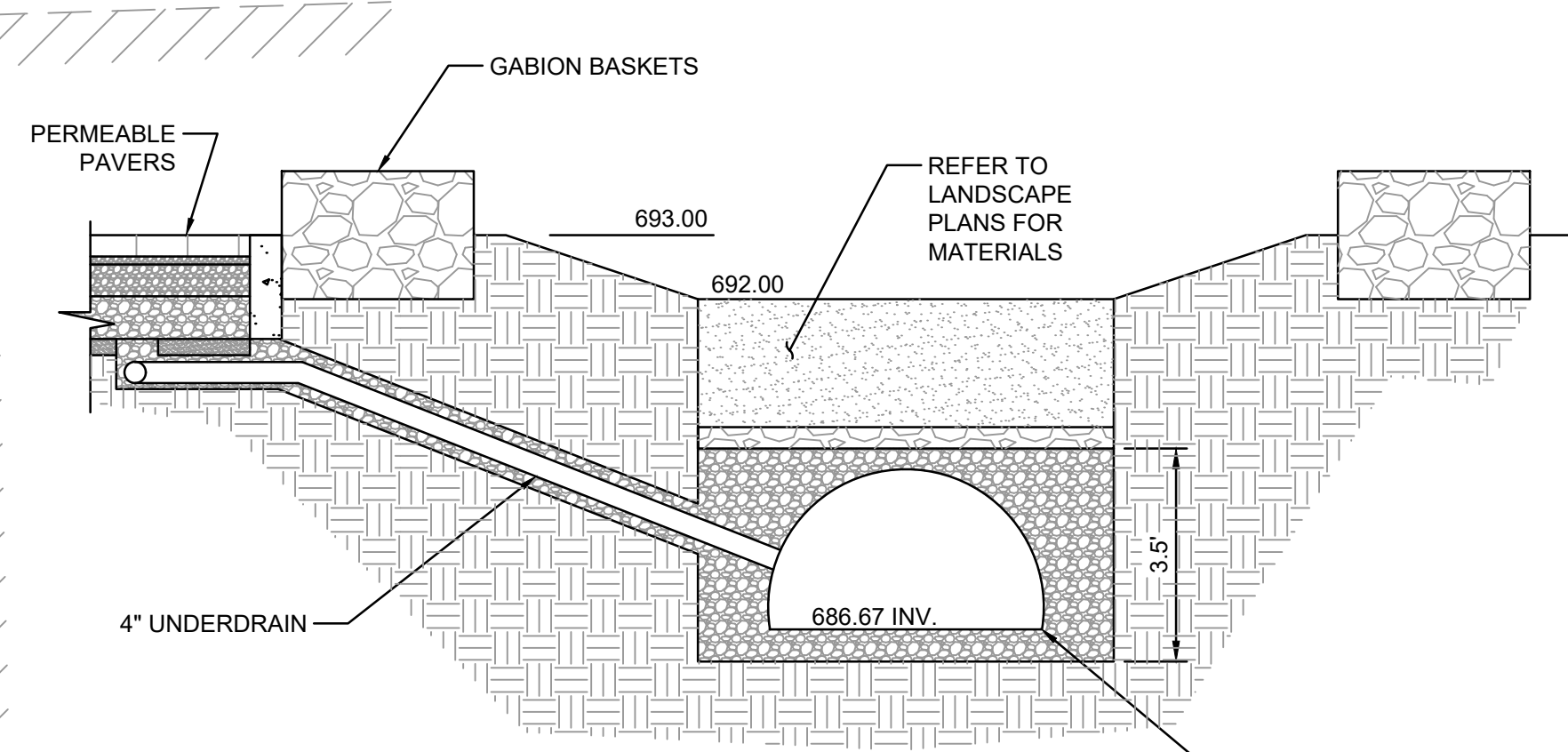
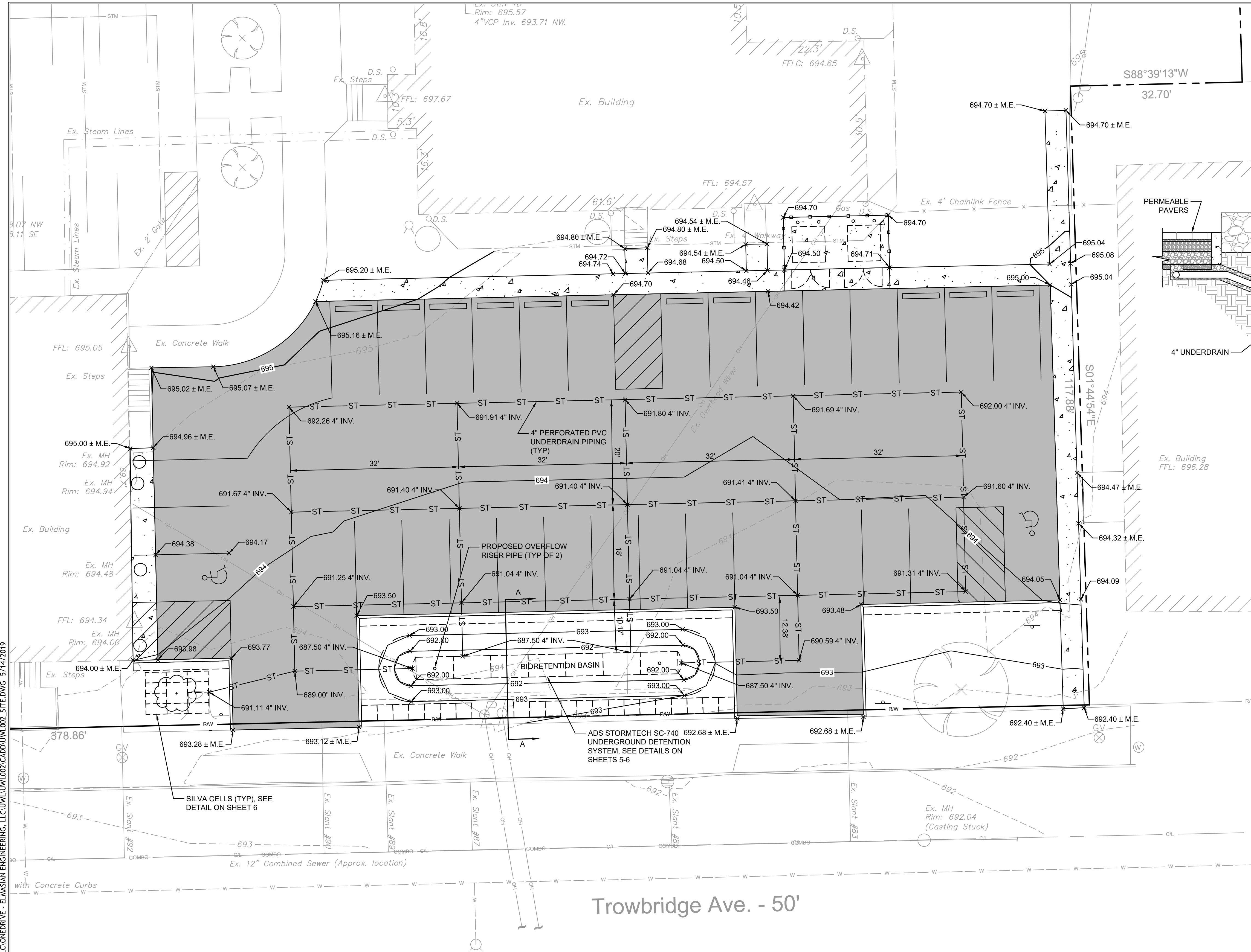
- ALL DIMENSIONS AND RADII ARE GIVEN TO EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IF ANY DISCREPANCIES EXIST, PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS SHOWN INCORRECTLY ON THESE PLANS, IF SUCH NOTIFICATION IS NOT GIVEN.



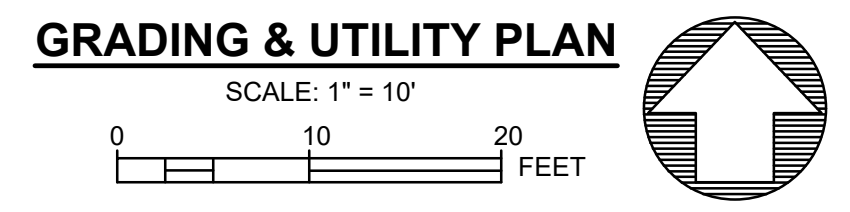
- 4" NON-REINFORCED PORTLAND CEMENT CONCRETE - ITEM 452
- 4" AGGREGATE BASE - ITEM 304
- COMPACTED SUBBASE - ITEM 310
- 8" REINFORCED PORTLAND CEMENT CONCRETE - ITEM 451 (PER ODOT BP 1.1)

OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG (NON MEMBERS MUST BE CALLED DIRECTLY)

C:\USERS\ELMASIAN\ELMASIAN ENGINEERING, LLC\ONE DRIVE - ELMASIAN ENGINEERING, LLC\UWL02\CADD\UWL02_SITE.DWG 5/14/2019



**SECTION A-A
BIORETENTION BASIN**
NO SCALE
(PER ODNR RAINWATER AND LAND
DEVELOPMENT MANUAL SECTION 2.10)



DATE	
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GRADING & UTILITY PLAN
FAMILY MINISTRY CENTER
3389 FULTON RD., CLEVELAND, OH 44109

OHIO
Utilities Protection
SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

DATE	5/14/2019
SCALE	1" = 10'
SHEET NO.	4 OF 6
FILE NO.	UWL002



Family Ministry Center Cleveland, OH



STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-740, SC-310, OR APPROVED EQUAL.
- CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPERE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL MEET ASTM F2922 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
 - A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
 - A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 OR ASTM F2922 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
 - STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310/SC-740 SYSTEM

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4"-2" (20-50 mm).
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

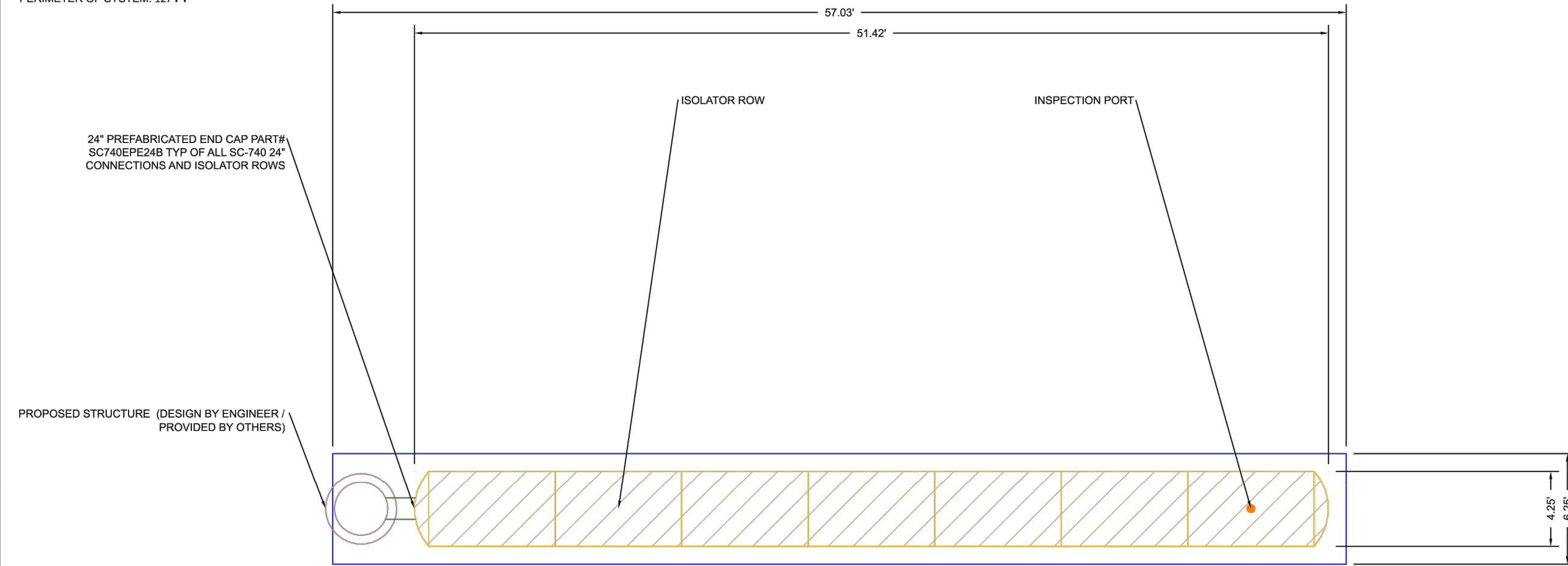
- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

CONCEPTUAL LAYOUT

(7) STORMTECH SC-740 CHAMBERS
(2) STORMTECH SC-740 END CAPS
INSTALLED WITH 6" COVER STONE, 6" BASE STONE, 40% STONE VOID
INSTALLED SYSTEM VOLUME: 692 CF
AREA OF SYSTEM: 356 FT²
PERIMETER OF SYSTEM: 1217 FT



Family Ministry Center
Cleveland, OH

DATE: 03/17/2019 DRAWN: NE
PROJECT #: 704 CHECKED: ---

StormTech
4640 TRUMAN BLVD
HILLIARD, OH 44026
PH: 419-931-7473

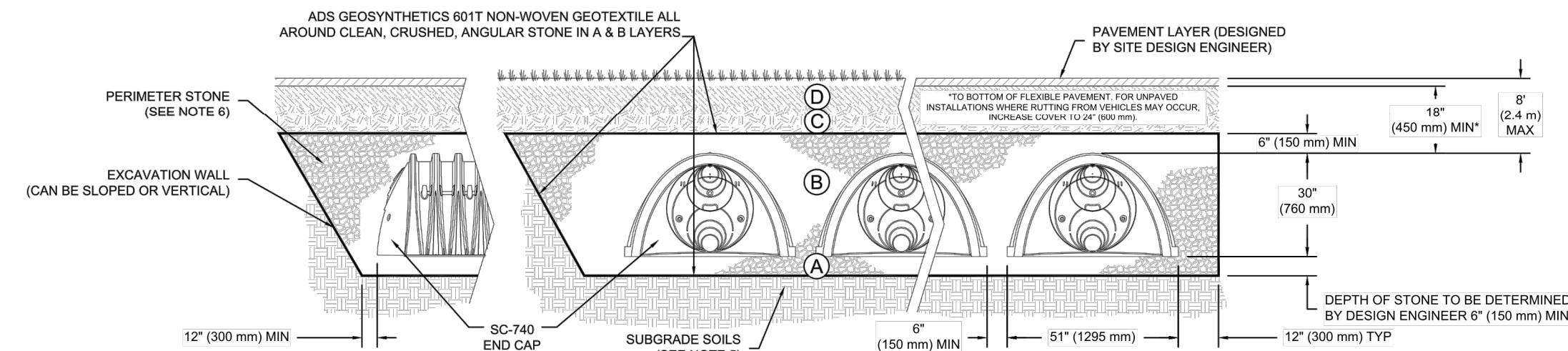
NOT TO SCALE

SHEET
2 OF 5

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBERS. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'C' LAYER.	AASHTO M145 A-1, A-2.4, A-3 OR AASHTO M43 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL, AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. 1"

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

- SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE STORMTECH CHAMBERS FOR THIS PROJECT.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. SCARIFY TOP LAYER OF SOIL.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

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StormTech
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HILLIARD, OH 44026
PH: 419-931-7473

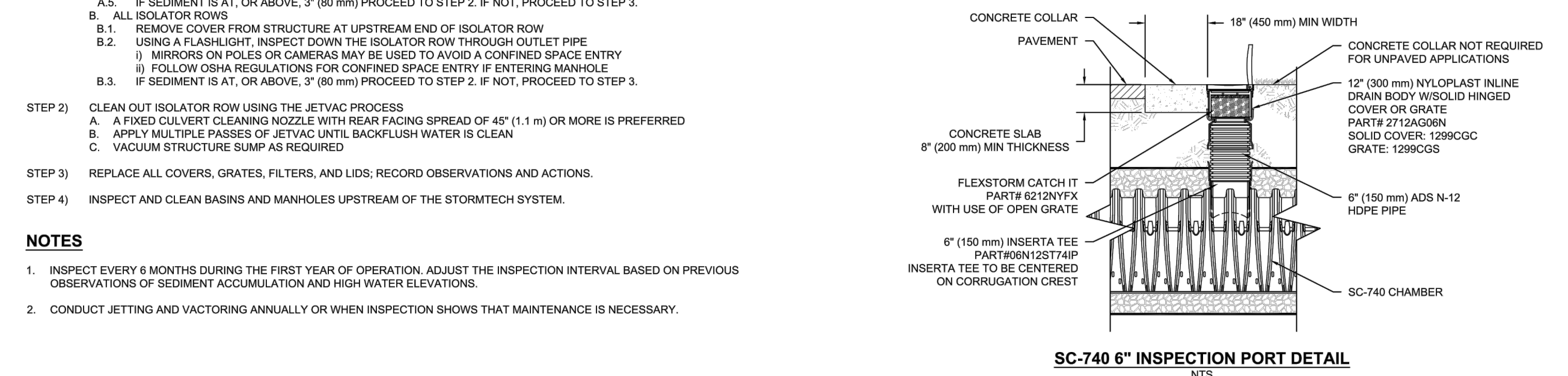
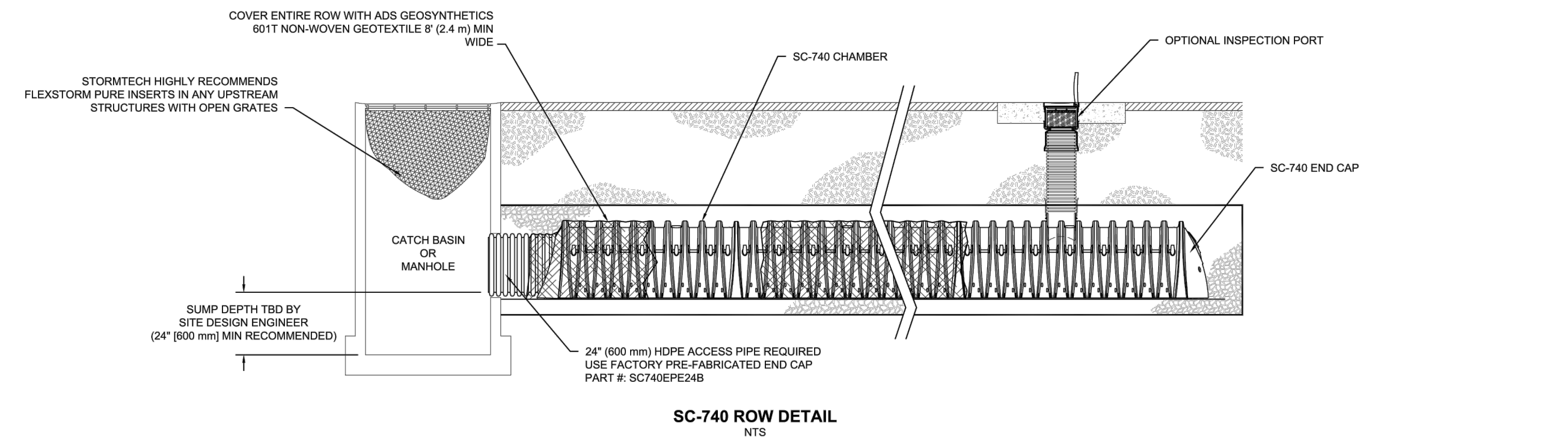
SHEET
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INSPECTION & MAINTENANCE

- STEP 1) INSPECT ROW FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL ISOLATOR ROWS
 - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKLUSH WATER IS CLEAN
 - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



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SHEET
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NO.	DATE	BY

DETAILS
FAMILY MINISTRY CENTER
3389 FULTON RD., CLEVELAND, OH 44109

DATE
5/14/2019

SCALE
1" = 10'

SHEET NO.
5 OF 6

FILE NO.
UWLU002

SC-740 TECHNICAL SPECIFICATION

NTS

ACCEPTS 4" (100 mm) SCH 40 PVC PIPE FOR INSPECTION POINT. FOR PIPE SIZES LARGER THAN 4" (100 mm) UP TO 10" (250 mm) USE INSERTA TEE CONNECTION CENTERED ON A CHAMBER CREST CORRUGATION.

DO NOT INSTALL INSERTA TEE AT CHAMBER JOINTS

INSERTA TEE TO BE INSTALLED, CENTERED OVER CORRUGATION

PLACE ADS GEOSYNTHETICS 315 (WOVEN GEOTEXTILE (CENTERED ON INSERTA-TEE INLET) OVER BEDDING STONE FOR SCOUR PROTECTION AT SIDE INLET CONNECTIONS. GEOTEXTILE MUST EXTEND 6" (150 mm) PAST CHAMBER FOOT

NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET (1.30 m ³)	
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET (2.12 m ³)	
WEIGHT	75.0 lbs. (33.6 kg)	

*ASSUMES 6" (150 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06BPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	0.5" (13 mm)
SC740EPE08B / SC740EPE08BPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	0.6" (15 mm)
SC740EPE08T / SC740EPE08BPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	0.6" (15 mm)
SC740EPE10T / SC740EPE10BPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	0.7" (18 mm)
SC740EPE10B / SC740EPE10BPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	0.7" (18 mm)
SC740EPE12T / SC740EPE12BPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	1.2" (30 mm)
SC740EPE12B / SC740EPE12BPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	1.2" (30 mm)
SC740EPE15T / SC740EPE15BPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	1.3" (33 mm)
SC740EPE15B / SC740EPE15BPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	1.3" (33 mm)
SC740EPE18T / SC740EPE18BPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	1.6" (41 mm)
SC740EPE18B / SC740EPE18BPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.8" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2894.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL.

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DATE: 03/17/2019 DRAWN: NE
PROJECT #: Tol CHECKED: ---
REV: DRW CHK DESCRIPTION

StormTech
18000 BROAD BATES ROAD HULL LT 1 0887
WINDSOR, OH 43082-1094 WWW.STORMTECH.COM

4640 TRUHEMAN BLVD
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ADS
4640 TRUHEMAN BLVD
CLEVELAND, OH 44130
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SHEET
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SILVA CELLS SUPPLEMENTAL DETAILS

System Components
FOR INFORMATIONAL USE ONLY - NOT FOR CONSTRUCTION

SILVA CELLS SYSTEM COMPONENTS - SECTION
NOT TO SCALE

SILVA CELL COMPONENTS

KEY PLAN

- (A) SILVA CELL SYSTEM (DECK, BASE, AND POSTS)
- (B) DEEPROOT ROOT BARRIER (DEPTH PER PROJECT SPECIFICATIONS). PREVENTS ROOTS FROM DISTURBING PAVEMENT.
- (C) TREE ROOT PACKAGE, SIZE VARIES
- (D) 1"-2" (25mm - 50mm) MULCH, PLACED IN TREE OPENING
- (E) SURFACE TREATMENT, PER PROJECT
- (F) AGGREGATE BASE COURSE, DEPTH VARIES PER PROJECT
- (G) GEOTEXTILE TO KEEP AGGREGATE FROM MIGRATING DOWN THROUGH CELL DECK
- (H) BACKFILL, PER PROJECT SPECIFICATIONS
- (I) GEOGRID TO PROVIDE FOR VERTICAL SEPARATION BETWEEN PLANTING SOILS AND BACKFILL WHILE ALLOWING ROOT PENETRATION INTO ADJACENT SOILS. 6" (150 mm) TOE (OUTWARD FROM BASE) AND 12" (305 mm) EXCESS (OVER TOP OF DECK).
- (J) CABLE TIE, ATTACHING GEOGRID TO SILVA CELL AT BASE OF UPPER POST FLARE
- (K) PLANTING SOIL, PER PROJECT SPECIFICATIONS, COMPACTED TO 70-80% PROCTOR
- (L) 1" - 4" (25 mm - 100mm) SPACING BETWEEN SILVA CELLS AT BASE
- (M) 4" (100 mm) MIN AGGREGATE SUB BASE, COMPACTED TO 95% PROCTOR
- (N) GEOTEXTILE, TO PROVIDE SEPARATION BETWEEN SUBGRADE AND AGGREGATE BASE
- (O) SUBGRADE, COMPACTED TO 95% PROCTOR
- (P) PIN, PER SILVA CELL SPECIFICATIONS, TO KEEP CELLS IN PLACE DURING CONSTRUCTION
- (Q) PLANTING SOIL BELOW TREE ROOT PACKAGE, COMPACTED TO 85-90% PROCTOR
- (R) CONCRETE EDGE RESTRAINT TO STABILIZE EDGE AND PREVENT AGGREGATE MIGRATION INTO TREE OPENING.
- (S) INSPECTION RISER TO PROVIDE FOR MONITORING OF SOIL MOISTURE (OPTIONAL)
- (T) SILVA CELL DECK
- (U) SILVA CELL POST
- (V) SILVA CELL BASE

deeproot
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SHEET
2 OF 15 SCALE: NOT TO SCALE

COMMERCIAL APPLICATION PERMEABLE PAVER DETAIL

NOTES:

- THIS PERMEABLE PAVEMENT DETAIL IS A RECOMMENDED MINIMUM AND MUST BE DESIGNED BY A PROFESSIONAL ENGINEER.
- ALL AGGREGATE MATERIAL SHALL BE CRUSHED, ANGULAR STONE AND FREE OF FINES.
- COMPACT SUBSOIL WITH A CALIFORNIA BEARING RATIO (CBR) OF LESS THAN 5% AS DIRECTED BY A PROFESSIONAL ENGINEER.
- SURFACE SLOPE SHALL BE A MINIMUM OF 1% AND A MAXIMUM OF 5%.
- INSTALL PVC UNDERDRAIN PIPE WHERE INFILTRATION RATE OF SUBSOIL IS LESS THAN 0.5 IN./HR. SIZE AS DIRECTED BY A PROFESSIONAL ENGINEER.
- NEVER BUILD PERMEABLE PAVEMENTS ON ORGANIC CLAY SOILS OF HIGH PLASTICITY AND/OR PEAT, MULCH, SOILS WITH HIGH ORGANIC CONTENT.
- MAINTAIN A MINIMUM DISTANCE OF 2' BETWEEN BOTTOM OF PERMEABLE BASE AND WATER TABLE.
- THE MINIMUM AGGREGATE THICKNESSES ARE AFTER COMPACTION.
- CROWN ROADWAY APPLICATIONS AT A 1.5 TO 1.7% SLOPE FOR INCREASED PAVEMENT STIFFNESS. (CROWNING IS NOT FOR DRAINAGE PURPOSES.)
- ONLY USE CRUSHED, ANGULAR GRANITE CHIPS FOR JOINT MATERIAL IN ROADWAY APPLICATIONS.

CROSS SECTION
LOW INFILTRATION WITH UNDERDRAIN MEDIUM DUTY

UNILOCK
DESIGNED TO CONNECT.

CREATED: OCTOBER 11, 2011
REVISED: JANUARY 30, 2014
FILE NAME: CS-COM-PERM-T3-2014.DWG

NOTES:
This cross section is intended for preliminary design purposes only. Confirm site conditions and consult with a qualified design professional or installer prior to installation.

COMMERCIAL APPLICATION PERMEABLE PAVER DETAIL

NOTES:

- UNILOCK PAVERS TO UTILIZE DRIVEGRID SYSTEM UNDER PERMEABLE PAVERS.

CROSS SECTION
PERMEABLE PAVERS WITH STRAIGHT CURB

UNILOCK
DESIGNED TO CONNECT.

CREATED: OCTOBER 11, 2011
REVISED: JANUARY 30, 2014
FILE NAME: CS-COM-PERM-STRAIGHT-2014.DWG

NOTES:
This cross section is intended for preliminary design purposes only. Confirm site conditions and consult with a qualified design professional or installer prior to installation.

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DETAILS
FAMILY MINISTRY CENTER
3389 FULTON RD., CLEVELAND, OH 44109

DATE: 5/14/2019
SCALE: 1" = 10'
SHEET NO. 6 OF 6
FILE NO. UWL002

DATE: 5/14/2019
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SHEET NO. 6 OF 6
FILE NO. UWL002