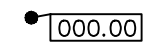
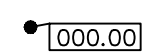
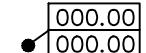
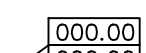
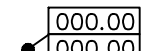





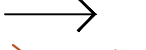





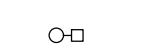
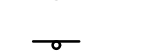









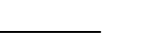
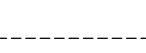



PROPOSED DEVELOPMENT FOR: STARBUCKS & PANDA EXPRESS

MASSILLON, OHIO

EXCEL LEGEND

	PROPOSED SPOT ELEVATIONS (FLOW LINE OF CURB UNLESS OTHERWISE SPECIFIED)
	EXISTING GRADE SPOT ELEVATIONS
	PROPOSED SPOT ELEVATIONS (REFERENCE R-WALL DETAIL) BG-FINISHED SURFACE GRADE AT BACK OF WALL FG-FINISHED SURFACE GRADE AT FRONT OF WALL
	PROPOSED SPOT ELEVATIONS (TOP OF CURB, FLOWLINE OF CURB)
	PROPOSED SPOT ELEVATIONS (TOP OF WALK, BOTTOM OF WALK @ FLOWLINE)
	PROPOSED WATER VALVE IN BOX
	PROPOSED STORM CATCH BASIN – ST CB
	PROPOSED STORM FIELD INLET – ST FI
	PROPOSED STORM CURB INLET – ST CI
	PROPOSED DRAINAGE FLOW
	PROPOSED APRON END SECTION
	EROSION MATTING
	PROPOSED INLET PROTECTION
	PROPOSED WELL
	PROPOSED LIGHT POLE
	PROPOSED SIGN
	CENTER LINE
	PROPOSED HANDICAP PARKING STALL
	SOIL BORING

	PROPOSED PROPERTY LINE
	PROPOSED STORM SEWER AND MANHOLE – ST MH
	PROPOSED SANITARY SEWER AND MANHOLE – SAN MH
	PROPOSED WATER LINE AND HYDRANT
	PROPOSED CURB AND GUTTER
	GRADING/SEEDING LIMITS
	RIGHT-OF-WAY LINE
	INTERIOR PROPERTY LINE
	RAILROAD TRACKS
	EXISTING GROUND CONTOUR
	PROPOSED GROUND CONTOUR

CIVIL SHEET INDEX

SHEET	SHEET TITLE
C0.1	CIVIL COVER AND SPECIFICATION SHEET
C1.0	EXISTING SITE AND DEMOLITION PLAN
C1.1	SITE PLAN
C1.2A	GRADING AND EROSION CONTROL PLAN
C1.2B	GRADING AND EROSION CONTROL PLAN - CROSS SECTION VIEWS
C1.3A	UTILITY PLAN
C1.3B	UTILITY PLAN - STORM SEWER PLAN/PROFILE
C1.4	LANDSCAPE AND RESTORATION PLAN
C2.0	DETAILS
C2.1	DETAILS
C2.2	PANDA EXPRESS SITE NOTES & DETAILS
C2.3	EROSION CONTROL DETAILS
C2.4	EROSION CONTROL DETAILS
C2.5	CITY OF MASSILLON DETAILS
C2.6	CITY OF MASSILLON DETAILS
C3.1	SITE PHOTOMETRIC PLAN & DETAILS

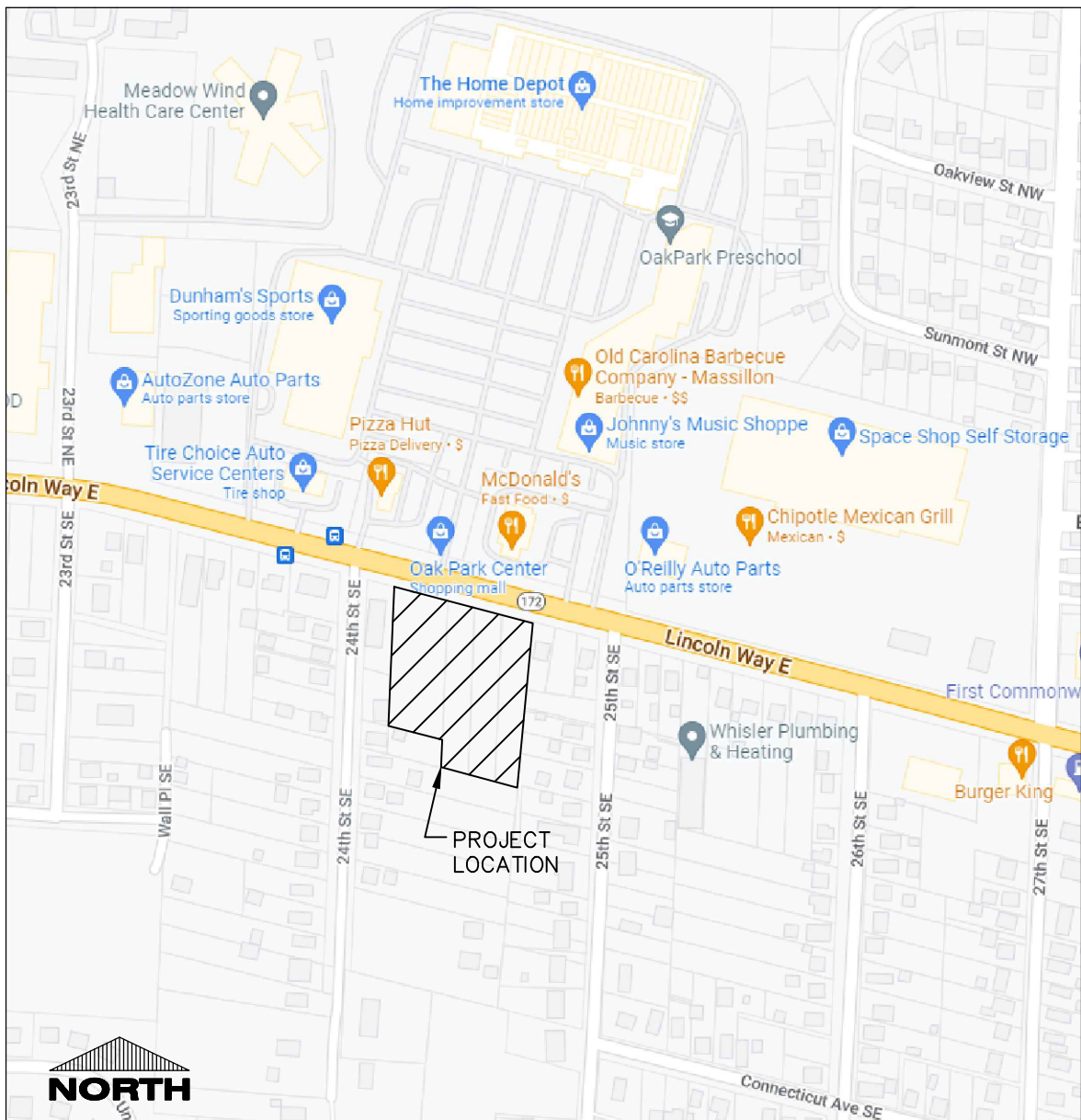
CONTACTS

CIVIL ENGINEER

EXCEL ENGINEERING
100 CAMELOT DRIVE
FOND DU LAC, WISCONSIN 54935
CONTACT: JASON DAVE, PE
P: (920) 926-9800
F: (920) 926-9801
jason.d@excelengineer.com



CONTRACTOR SHALL CALL CUPS AT 1-800-362-2764 AT LEAST 48 HOURS BUT NO MORE THAN 10 WORKING DAYS PRIOR TO EXCAVATION ON SITE.



PROJECT LOCATION MAP

DIVISION 31 EARTH WORK

31 10 00 SITE CLEARING (DEMOLITION)

- CONTRACTOR SHALL CALL OHIO ONE CALL AND CONDUCT A PRIVATE UTILITY LOCATE AS REQUIRED TO ENSURE THAT ALL UTILITIES HAVE BEEN LOCATED BEFORE STARTING SITE DEMOLITION. DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN PLAN AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.
- DEMOLITION PLAN IS AN OVERVIEW OF DEMOLITION TO TAKE PLACE ON SITE. CONTRACTOR TO FIELD VERIFY EXISTING SITE CONDITIONS PRIOR TO BIDDING. CONTRACTOR SHALL REMOVE, REPLACE, OR DEMOLISH ALL ITEMS AS NEEDED DURING CONSTRUCTION.
- CONTRACTOR TO PROTECT EXISTING IMPROVEMENTS THAT ARE SCHEDULED TO REMAIN. ANY DAMAGED TO EXISTING FACILITIES SHALL BE REPLACED AT CONTRACTORS EXPENSE.
- ALL CONTRACT NOTED TO BE REMOVED SHALL BE REMOVED TO THE NEAREST CONTROL POINT.

31 20 00 EARTH MOVING

- CONTRACTOR SHALL CALL OHIO ONE CALL AND CONDUCT A PRIVATE UTILITY LOCATE AS REQUIRED TO ENSURE THAT ALL UTILITIES HAVE BEEN LOCATED BEFORE STARTING EXCAVATION. DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN PLAN AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.
- PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT FOR ALL EXCAVATION, GRADING, FILL AND BACKFILL WORK AS REQUIRED TO COMPLETE THE GENERAL CONSTRUCTION WORK. ALL EXCAVATION AND BACKFILL FOR ELECTRICALS AND MECHANICALS ARE THE RESPONSIBILITY OF THE RESPECTIVE CONTRACTOR UNLESS OTHERWISE SPECIFIED IN THE BID DOCUMENTS.
- ALL ORANGE TOPSOIL INSIDE THE BUILDING AREA UNDER PAVED AREAS, AND AT SITE FILL AREAS SHALL BE REMOVED. PROOF ROLL SURFACES BEFORE PLACING FILL WITH HEAVY PNEUMATIC-TIRED EQUIPMENT, SUCH AS A FULLY-LOADED TANDEM AXLE DUMP TRUCK TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING. CONTRACTOR SHALL VERIFY TOPSOIL DEPTHS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REVIEW AND FOLLOW THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND ACCOUNT FOR EXISTING CONDITIONS PRIOR TO SUBMITTING BID FOR THE PROJECT. EXCESS MATERIALS SHALL BE REMOVED FROM THE SITE UNLESS OTHERWISE DIRECTED IN THE PLANS OR BY LOCAL ZONING REQUIREMENTS.
- PLACE AND COMPACT FILL MATERIAL IN LAYERS TO REQUIRED ELEVATIONS. UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH SUBSEQUENT FILL OR BACKFILL LAYER BEFORE COMPACTION AS RECOMMENDED TO ACHIEVE SPECIFIED DRY DENSITY. REMOVE AND REPLACE OR SCARP AND RE-BUILD OTHERWISE SATISFACTORY SOIL MATERIAL THAT IS TOO WEAK TO COMPACT TO SPECIFIED DRY DENSITY.
- PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
- COMPACT THE SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY ACCORDING TO ASTM D 698, STANDARD PROCTOR TEST. FILL MAY NOT BE PLACED ON FROZEN GROUND AND NO FROZEN MATERIALS MAY BE USED FOR BACK FILL. APPLY THE MORE STRINGENT REQUIREMENTS WHEN COMPARING THE FOLLOWING AND THE GEOTECHNICAL REPORT.
 - UNDER FOUNDATIONS - SUBGRADE, AND EACH LAYER OF BACKFILL OR FILL MATERIAL, TO NOT LESS THAN 98 PERCENT.
 - UNDER INTERIOR SLAB-ON-GRADE WHERE GROUNDWATER IS MORE THAN 3 FEET BELOW THE SLAB - PLACE A DRAINAGE COURSE LAYER OF 3/4" CRUSHED STONE, WITH 5% TO 12% FINES, PER THICKNESS INDICATED ON FOUNDATION PLANS ON PREPARED SUBGRADE. COMPACT THE SUBGRADE AND DRAINAGE COURSE TO NOT LESS THAN 95 PERCENT.
 - UNDER INTERIOR SLAB-ON-GRADE WHERE GROUNDWATER IS WITHIN 3 FEET OF THE SLAB SURFACE - PLACE A DRAINAGE COURSE LAYER OF CLEAN 3/4" CRUSHED STONE, WITH NO MORE THAN 5% FINES, PER THICKNESS INDICATED ON FOUNDATION PLANS ON PREPARED SUBGRADE. COMPACT THE SUBGRADE AND DRAINAGE COURSE TO NOT LESS THAN 95 PERCENT.
 - UNDER EXTERIOR CONCRETE AND ASPHALT PAVEMENTS - COMPACT THE SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL TO NOT LESS THAN 95 PERCENT.
 - UNDER WALKWAYS - COMPACT SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL TO NOT LESS THAN 95 PERCENT.
 - UNDER LAWN OR UNPAVED AREAS - COMPACT SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL TO NOT LESS THAN 85 PERCENT.
- CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS. CONTRACTOR SHALL PROVIDE DOCUMENTATION OF PASSING DESIGN TESTING AND PROOF-ROLLING TO ENGINEER UPON COMPLETION. IT IS RECOMMENDED THAT THE GEOTECHNICAL FIRM USED TO PREPARE THE SUBSURFACE SOIL INVESTIGATION TO CONDUCT THE FIELD QUALITY CONTROL TESTS.
- ALLOW THE TESTING AGENCY TO TEST AND INSPECT SUBGRADES AND EACH FILL OR BACKFILL LAYER. PROCEED WITH SUBSEQUENT EARTHWORK ONLY AFTER TEST RESULTS FOR PREVIOUSLY COMPLETED WORK COMPLY WITH REQUIREMENTS. PROVIDE ONE TEST FOR EVERY 2000 SQUARE FEET OF PAVED AREA OR BUILDING SLAB, ONE TEST FOR EACH SLOPE FOOTING, AND ONE TEST FOR EVERY 50 LINEAR FEET OF WALL STOP FOOTING.
- THE BUILDING SITE SHALL BE GRADED TO PROVIDE DRAINAGE AWAY FROM THE BUILDING AS INDICATED ON THE PLANS. SITE EARTHWORK SHALL BE GRADED TO WITHIN 0" OF REQUIRED EARTHWORK ELEVATIONS ASSUMING POSITIVE DRAINAGE IS MAINTAINED IN ACCORDANCE WITH THE GRADING PLAN.

31 30 00 EROSION CONTROL/STORMWATER MANAGEMENT & POLLUTION PREVENTION

- THE DESIGN ENGINEER SHALL PREPARE A SITE SPECIFIC EROSION CONTROL AND A STORMWATER MANAGEMENT PLAN PURSUANT TO THE REQUIREMENTS OF THE OHIO EPA PERMIT NO. D000000, CONSTRUCTION GENERAL PERMIT AUTHORIZATION FOR STORM WATER DISCHARGES). THE DESIGN ENGINEER SHALL ALSO FILE A CONSTRUCTION NOTICE OF INTENT WITH THE OHIO EPA.
- THE CONTRACTOR SHALL KEEP THE NOTICE OF INTENT PERMIT, APPROVED EROSION CONTROL AND STORMWATER MANAGEMENT PLANS, SWPPP, AND PLAN AMENDMENTS ON THE CONSTRUCTION SITE AT ALL TIMES PURSUANT TO OHIO EPA REQUIREMENTS UNTIL PERMIT COVERAGE IS TERMINATED.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL LOCAL EROSION CONTROL PERMITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE MONITORING, MAINTENANCE, AND REPORTING REQUIREMENTS OF THE CONSTRUCTION GENERAL PERMIT. INSPECTIONS OF IMPLEMENTED EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES MUST AT A MINIMUM BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS AFTER A PRECIPITATION EVENT OF 0.5" OR MORE. A PRECIPITATION EVENT MAY BE CONSIDERED TO BE THE TOTAL AMOUNT OF PRECIPITATION RECORDED IN ANY CONTINUOUS 24-HOUR PERIOD. IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE IS IN NEED OF REPAIRS THAT SUBGRADES, FILLS, OR FROZEN GROUND WITHIN A SEDIMENT SETTLING POND MUST BE REPAIRED OR MAINTAINED WITHIN THREE DAYS OF THE INSPECTION. SEDIMENT SETTLING PONDS MUST BE REPAIRED OR MAINTAINED WITHIN TEN DAYS OF THE INSPECTION. IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE FAILS TO PERFORM ITS INTENDED FUNCTION AND THAT ANOTHER, MORE APPROPRIATE CONTROL PRACTICE IS REQUIRED, THE SWPPP MUST BE AMENDED AND THE NEW CONTROL PRACTICE MUST BE INSTALLED WITHIN 10 DAYS OF INSPECTION. IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE HAS NOT BEEN IMPLEMENTED IN ACCORDANCE WITH THE SWPPP SCHEDULE, THE CONTROL PRACTICES MUST BE IMPLEMENTED WITHIN 10 DAYS FROM THE DATE OF INSPECTION. IF THE INSPECTION REVEALS THAT THE PLANNED CONTROL PRACTICES ARE NOT NEEDED, THE RECORD MUST CONTAIN A STATEMENT OF EXPLANATION AS TO WHY THE CONTROL PRACTICES ARE NOT NEEDED.
- E. THE CONTRACTOR SHALL MAINTAIN AT THE CONSTRUCTION SITE OR AVAILABLE VIA AN INTERNET WEBSITE, WEEKLY WRITTEN REPORTS OF ALL INSPECTIONS CONDUCTED. INSPECTION LOGS FOUND WITHIN THE SITE SPECIFIC SWPPP SHALL BE USED. WEEKLY INSPECTION REPORTS SHALL INCLUDE ALL OF THE FOLLOWING:
 - THE DATE, TIME, AND LOCATION OF THE CONSTRUCTION SITE INSPECTION.
 - THE NAME OF THE INDIVIDUAL OR PERSON RESPONSIBLE FOR THE INSPECTION.
 - AN ASSESSMENT OF THE CONDITION OF THE EROSION AND SEDIMENT CONTROLS.
 - A DESCRIPTION OF ANY EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE IMPLEMENTATION AND MAINTENANCE PERFORMED.
 - A DESCRIPTION OF THE PRESENT PHASE OF LAND-DESTRUCTING CONSTRUCTION ACTIVITY AT THE CONSTRUCTION SITE.
 - EROSION AND SEDIMENT CONTROL IMPLEMENTED DURING CONSTRUCTION SHALL STRICTLY COMPLY WITH THE GUIDELINES AND REQUIREMENTS SET FORTH IN THE OHIO EPA RAINWATER AND LAND DEVELOPMENT MANUAL. THE METHODS AND TYPES OF EROSION CONTROL WILL BE DEPENDENT ON THE LOCATION AND TYPE OF WORK INVOLVED. ALL SEDIMENT CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION, AND INSTALLED PRIOR TO ANY GRADING OR DISBURSAL OF EXISTING SURFACE MATERIAL. BELOW IS A LIST OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES TO ACHIEVE THE PERFORMANCE STANDARDS REQUIRED.
 - SILT FENCE SHALL BE PLACED ON SITE AT LOCATIONS SHOWN ON THE EROSION CONTROL PLAN. SILT FENCE SHALL ALSO BE PROVIDED AROUND THE PERIMETER OF ALL LOCATIONS THAT WILL EXIST FOR MORE THAN 7 DAYS. FOLLOW PROCEDURES FOUND IN THE OHIO EPA RAINWATER AND LAND DEVELOPMENT MANUAL.
 - DITCH CHECKS SHALL BE PERFORMED TO REDUCE THE VELOCITY OF WATER FLOWING IN DITCH BOTTOMS. PLACE AT LOCATIONS SHOWN ON THE EROSION CONTROL PLAN. FOLLOW PROCEDURES FOUND IN THE OHIO EPA RAINWATER AND LAND DEVELOPMENT MANUAL.
 - STORM CHAIN INLET PROTECTION SHALL BE PROVIDED FOR ALL NEW AND DOWNSTREAM STORM CATCH BASINS AND CURB INLETS. FOLLOW PROCEDURES FOUND IN THE OHIO EPA RAINWATER AND LAND DEVELOPMENT MANUAL.
 - CONTRACTOR SHALL MAINTAIN THE EROSION CONTROL PLAN FOR LOCATIONS. SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. OTHER TRACKOUT CONTROL PRACTICES INCLUDING STABILIZED WORK SURFACES, MANUFACTURED EROSION CONTROL MATS, AND STRENGTHENING AND STREET PAVING SHALL BE IMPLEMENTED AS NECESSARY TO MITIGATE THE TRACKOUT OF SEDIMENT OFFSITE. FOLLOW PROCEDURES FOUND IN THE OHIO EPA RAINWATER AND LAND DEVELOPMENT MANUAL.
 - STORM CHAIN INLET PROTECTION SHALL BE PROVIDED FOR ALL NEW AND DOWNSTREAM STORM CATCH BASINS AND CURB INLETS. FOLLOW PROCEDURES FOUND IN THE OHIO EPA RAINWATER AND LAND DEVELOPMENT MANUAL.
 - CONTRACTOR SHALL PROVIDE AN OPEN AGGREGATE CONCRETE TRUCK WASHOUT AREA ON SITE. CONTRACTOR TO ENSURE THAT CONCRETE WASHOUT SHALL BE CONTAINED TO THIS DESIGNATED AREA AND NOT BE ALLOWED TO RUN INTO STORM TRENCHES OR INTO THE OVERLAND STORMWATER DRAINAGE SYSTEM. WASHOUT AREA SHALL BE REMOVED PRIOR TO COMPLETION OF CONSTRUCTION.

Table A: Allowable Pipe Material Schedule

Utility	Material	Pipe Code	Fitting Code	Joint Code
Water Lateral	C901/906 PE	AWWA C901/C906	ASTM D2609, ASTM D2683, ASTM D3261	Heat fusion: ASTM D2657
Fire Hydrant Lateral	C900 PVC	AWWA C900, ASTM D1785, ASTM D2441	AWWA C110, AWWA C153, ASTM D2464, ASTM D2466, ASTM D2467, ASTM D3311, ASTM F403, ASTM F1336, ASTM F1866	Joint: ASTM D3139 Integral Bell & Spigot Elastomeric Seal: ASTM F477
Sanitary Sewer	SDR 35 PVC	ASTM D1785, ASTM D2665, ASTM D3034, ASTM F891	ASTM F1336	Push-On: ASTM D3212 for Tightness Elastomeric Gasket: ASTM F477
Storm Sewer	HDPE	ASTM F2648	ASTM F2306 Saddle Gasket	Joint: ASTM F2648 Bell & Spigot Elastomeric Seal: ASTM F477
Storm Sewer	SDR 35 PVC	ASTM D1785, ASTM D2665, ASTM D3034, ASTM F891	ASTM F1336	Push-On: ASTM D3212 for Tightness Elastomeric Seal: ASTM F477

GENERAL PROJECT NOTES

- ALL DRIVEWAYS AND CURB CUTS TO BE CONSTRUCTED ACCORDING TO LOCAL ORDINANCES. CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL WORK IN ROW PERMITS.

APPROVED BY THE MASSILLON CITY ENGINEER THIS DAY OF _____, 2023

CITY ENGINEER

APPROVED BY THE STARK COUNTY SOIL & WATER CONSERVATION DISTRICT THIS DAY OF _____, 2023

STORMWATER MANAGER

ONLY APPROVED SIGNED PLANS BY THE CITY ENGINEER ARE TO BE USED FOR CONSTRUCTION.

PLAN SPECIFICATIONS (BASED ON CSI FORMAT)

- TEMPORARY SITE RESTORATION SHALL TAKE PLACE IN DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH LAND DISTURBING ACTIVITIES WILL NOT BE PERFORMED FOR A PERIOD GREATER THAN 14 DAYS AND REQUIRES VEGETATIVE COVER FOR MORE THAN ONE YEAR. THIS TEMPORARY SITE RESTORATION REQUIREMENT ALSO APPLIES TO SOIL STOCKPILES THAT EXIST FOR MORE THAN 7 DAYS. PERMANENT RESTORATION APPLIES TO AREAS WHERE PERENNIAL VEGETATION COVERS ARE NEEDED TO PERMANENTLY STABILIZE AREAS OF EXPOSED SOIL. PERMANENT STABILIZATION SHALL OCCUR WITHIN 2 WORKING DAYS OF FINAL GRADING. TOPSOIL, SEED, AND MULCH SHALL BE IN GENERAL CONFORMANCE WITH THE OHIO EPA RAINWATER AND LAND DEVELOPMENT MANUAL. RECOMMENDATIONS AND SHALL MEET THE SPECIFICATIONS FOUND IN THE LANDSCAPING AND SITE STABILIZATION SECTION OF THIS CONSTRUCTION DOCUMENT. ANY SOIL EROSION THAT OCCURS AFTER FINAL GRADING AND/OR FINAL STABILIZATION MUST BE REPAIRED AND THE STABILIZATION WORK REDONE.
- IF SITE DRAINAGING IS REQUIRED FOR PROPOSED CONSTRUCTION ACTIVITIES, ALL SEDIMENT LADEN WATER GENERATED DURING THE DRAINAGING PROCESS SHALL BE TREATED TO REMOVE SEDIMENT PRIOR TO DISCHARGING OFF-SITE OR TO WATERS OF THE STATE. FOLLOW ALL PROCEDURES FOUND IN THE OHIO EPA RAINWATER AND LAND DEVELOPMENT MANUAL.
- ALL OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF CONSTRUCTION WORK OR A STORM EVENT SHALL BE CLEANED UP BY THE END OF EACH WORKING DAY. DUST CONTROL REQUIREMENTS SHALL FOLLOW ALL PERMITS AND LOCAL ORDINANCES AND DEVELOPMENT MANUAL. FLUSHING SHALL NOT BE ALLOWED.
- EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL THE AREAS SERVED HAVE ESTABLISHED VEGETATIVE COVER.
- ONCE THE CONSTRUCTION SITE HAS BEEN FULLY STABILIZED AND TEMPORARY EROSION CONTROL BEST MANAGEMENT PRACTICES HAVE BEEN REMOVED, THE CONTRACTOR SHALL FILE A CONSTRUCTION NOTICE OF TERMINATION WITH THE OHIO EPA IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS.
- AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL GIVE THE OWNER COPIES OF THE EROSION CONTROL AND STORM WATER MANAGEMENT PLANS, SWPPP, AMENDMENTS TO PLANS, SUPPORTING PLAN DATA, AND CONSTRUCTION SITE EROSION CONTROL INSPECTION REPORTS. THE OWNER SHALL RETAIN THESE FOR A PERIOD OF 3 YEARS FROM THE DATE OF TERMINATING COVERAGE UNDER THE OHIO EPA GENERAL PERMIT.
- ALL POST CONSTRUCTION STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES SHALL BE CONSTRUCTED BEFORE THE SITE HAS UNDERGONE FINAL STABILIZATION.

DIVISION 32 EXTERIOR IMPROVEMENTS

32 10 00 AGGREGATE BASE & ASPHALT PAVEMENT

- CONTRACTOR TO PROVIDE COMPACTED AGGREGATE BASE AND HOT MIX ASPHALT PAVEMENT WHERE INDICATED ON THE PLANS. ALL AGGREGATE PROVIDED MUST COMPLY WITH ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS (CURRENT EDITION). HOT MIX ASPHALT SHALL BE PROVIDED TYPES PER ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS (CURRENT EDITION). CONTRACTOR SHALL OBTAIN AND REVIEW SOILS REPORT FOR RECOMMENDATIONS FOR GEO-GEO/ GEOTECH/ BELOW CRUSHED AGGREGATE (IF APPLICABLE). CONTRACTOR TO PROVIDE AGGREGATE BASE AND HOT MIX ASPHALT PAVEMENT TO MEET THE MORE STRINGENT REQUIREMENTS OF THE GEOTECHNICAL REPORT OR THE GEOTECHNICAL RECOMMENDATIONS.
 - HEAVY ASPHALT PAVING SECTION:
 - 1-1/2" SURFACE COURSE
 - TACK COAT
 - 2-1/2" BINDER COURSE
 - 1/2" - 1-1/4" CRUSHED AGGREGATE
 - CONTRACTOR TO COMPACT THE AGGREGATE BASE, ASPHALT BINDER COURSE, AND ASPHALT SURFACE COURSE TO AN AVERAGE DENSITY PER ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS (CURRENT EDITION). ALL ASPHALT PAVEMENT AREAS SHALL BE PAVED TO WITHIN 0.05" OF DESIGN SURFACE GRADES WITH POSITIVE DRAINAGE BEING MAINTAINED IN ACCORDANCE WITH DESIGN PLANS. A MINIMUM OF 1.5% SLOPE SHALL BE MAINTAINED IN ALL ASPHALT PAVEMENT AREAS.
 - HOT MIX ASPHALT CONSTRUCTION TO BE PROVIDED PER MORE STRINGENT REQUIREMENTS OF GEOTECHNICAL REPORT OR CONSTRUCTION DOCUMENTS.
 - CONTRACTOR TO PROVIDE A WIDE WHITE PAINTED STRIPING FOR PARKING STALLS, TRAFFIC LANES, AND NO PARKING AREAS. PAINT MARKINGS SHALL ALSO BE PROVIDED FOR H.C. ACCESSIBLE SYMBOLS, TRAFFIC ARROWS, AND TRAFFIC MESSAGES.

32 20 00 CONCRETE AND AGGREGATE BASE

- CONTRACTOR TO PROVIDE CRUSHED AGGREGATE BASE AND CONCRETE WHERE INDICATED ON THE PLANS.
- ALL AGGREGATE PROVIDED MUST COMPLY WITH ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS (CURRENT EDITION). ALL AGGREGATE PLACED MUST BE COMPACTED TO AN AVERAGE DENSITY PER ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS (CURRENT EDITION).
- DESIGN AND CONSTRUCTION OF ALL CAST-IN-PLACE EXTERIOR CONCRETE BASE WORK SHALL CONFORM TO ACI 308R-08 & ACI 318-08.
- EXTERIOR CONCRETE FILL WORK CONSTRUCTION TO BE PROVIDED PER MORE STRINGENT REQUIREMENTS OF THE GEOTECHNICAL REPORT OR THIS SPECIFICATION. CONCRETE FILL WORK CONSTRUCTION IS AS FOLLOWS:
 - SEAWALL CONCRETE: 4" OF CONCRETE OVER A 3/4" CRUSHED AGGREGATE BASE. CONSTRUCTION JOINTS SHALL CONSIST OF 1/8" WIDE BY 1" DEEP TOOLED JOINTS WHERE INDICATED ON THE PLANS.
 - HEAVY DUTY/DRIVE THRU/THROU/PAID CONCRETE (TRUCK TRAFFIC): 4" OF CONCRETE OVER 4" OR 3/4" CRUSHED AGGREGATE. CONCRETE SHALL BE REINFORCED WITH #2 REBAR WITH CHAIRS AT 3" C/C. REBAR SHALL BE PLACED PLACED IN THE UPPER 1/3 TO 1/2 OF THE SLAB. CONSTRUCTION JOINTS SHALL BE SAWCUT 1/5" IN DEPTH AND BE SPACED A MAXIMUM OF 15' ON CENTER.
 - EXTERIOR CONCRETE FILL WORK CONSTRUCTION TO BE PROVIDED PER MORE STRINGENT REQUIREMENTS OF THE GEOTECHNICAL REPORT OR THIS SPECIFICATION. CONCRETE FILL WORK CONSTRUCTION IS AS FOLLOWS:
 - SEAWALL CONCRETE: 4" OF CONCRETE OVER A 3/4" CRUSHED AGGREGATE. CONSTRUCTION JOINTS SHALL BE SAWCUT 1/5" IN DEPTH AND BE SPACED A MAXIMUM OF 12' ON CENTER.
 - CONCRETE SHALL BE REINFORCED AS FOLLOWS:
 - THE REBAR AT OUTERMOST CONSTRUCTION JOINT FIRST JOINT FROM EDGE OR AT CURB JOINT) AROUND PERIMETER OF CONCRETE. THE REARS SHALL BE #4 REBAR 24" LONG PLACED AT 30" O/C.
 - TYPICAL FOUR CONTROL JOINT - FOUR CONTROL JOINT SHALL BE PROVIDED WITH 1/4" X 4 - 1/2" X 4 - 1/4" DIAMOND SHAPED TAPERED PLATE DOMES MAINTAINED PER ASTM A36. INSTALL PER MANUFACTURERS SPECIFICATIONS.
- DESIGN MIXES SHALL BE IN ACCORDANCE WITH ASTM C94
- STRENGTH TO BE MINIMUM OF 4,000 PSI AT 28 DAYS FOR EXTERIOR CONCRETE.
 - MAXIMUM WATER/CEMENT RATIO SHALL BE 0.45.
 - SUMP SHALL NOT EXCEED 4" FOR EXTERIOR CONCRETE FILL WORK.
 - SUMP SHALL BE 2" OR LESS FOR SUMP FORMED CURB AND GUTTER.
 - SUMP SHALL BE BETWEEN 1.5" TO 3" FOR NON SUMP FORMED CURB AND GUTTER.
 - ALL EXTERIOR CONCRETE SHALL BE AIR ENTRAINED WITH 4% TO 7% AIR CONTENT. NO OTHER ADMIXTURES SHALL BE USED WITHOUT APPROVAL OF EXCEL ENGINEERING, INC. CALCULUM CHLORIDE SHALL NOT BE USED.
 - MAXIMUM AGGREGATE SIZE FOR ALL EXTERIOR CONCRETE SHALL BE 6/5 INCHES.
- VERIFY EQUIPMENT CONCRETE PAD SIZES WITH RESPECTIVE CONTRACTORS. PADS SHALL HAVE FIRMNESS 300 PERFS AT A RATE OF 1.5 LB/CU YD. OF EXCEL ENGINEERING, INC. CALCULUM CHLORIDE SHALL NOT BE USED.
- ALL CONCRETE FILL WORK SURFACES AND CONCRETE CURB FLOWLINES SHALL BE CONSTRUCTED TO WITHIN 0.05" OF DESIGN SURFACE AND THE TOP OF THE CLEANLINE CRUSH WITH A CORRECTED PAD.
- ALL CONCRETE FILL WORK SHALL HAVE CONSTRUCTION JOINTS OR SAW CUT JOINTS PLACED AS INDICATED ON THE PLANS OR PER THIS SPECIFICATION. SAWCUTS SHALL BE DONE AS SOON AS POSSIBLE, BUT NO LATER THAN 24 HOURS AFTER CONCRETE IS PLACED. CONCRETE CURB AND GUTTER JOINTING SHALL BE PLACED WITHIN 10' OR CLOSER TO MIN. IF CONCRETE PAVEMENT IS ADJACENT TO CONCRETE CURB JOINTING IN THE PAVEMENT AND CURB SHALL ALIGN. ALL EXTERIOR CONCRETE SHALL HAVE A LIGHT BROWN FINISH UNLESS NOTED OTHERWISE. A UNIFORM COAT OF A HIGH SOLIDS CURING COMPOUND MIXING ATMIN C-999 SHOULD BE APPLIED TO ALL EXPOSED CONCRETE TO BE CURBED PRIOR TO CURBING.
- 7 DAYS. EXTERIOR CONCRETE SHALL BE SEPARATED FROM BUILDINGS WITH CONTINUOUS 0.5 INCH FIBER EXPANSION JOINT AND/OR 0.25 INCH FIBER EXPANSION JOINT AT DECORATIVE MAXIMUM UNITS.
- ALL REINFORCING BARS SHALL BE ASTM A615 GRADE 60. THICKNESS OF CONCRETE COVER OVER REINFORCEMENT SHALL BE NOT LESS THAN 3" WHERE CONCRETE IS DEPOSITED AGAINST THE GROUND WITHOUT THE USE OF FORMS AND NOT LESS THAN 1.5" IN ALL OTHER LOCATIONS. ALL REINFORCING SHALL BE LAPPED 36 DIAMETERS FOR UP TO 10# BARS, 48 DIAMETERS FOR UP TO 14# DIAMETERS FOR 14# AND ABOVE. SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. OTHER TRACKOUT CONTROL PRACTICES INCLUDING STABILIZED WORK SURFACES, MANUFACTURED EROSION CONTROL MATS, AND STRENGTHENING AND STREET PAVING SHALL BE IMPLEMENTED AS NECESSARY TO MITIGATE THE TRACKOUT OF SEDIMENT OFFSITE. FOLLOW PROCEDURES FOUND IN THE OHIO EPA RAINWATER AND LAND DEVELOPMENT MANUAL.
- STORM CHAIN INLET PROTECTION SHALL BE PROVIDED FOR ALL NEW AND DOWNSTREAM STORM CATCH BASINS AND CURB INLETS. FOLLOW PROCEDURES FOUND IN THE OHIO EPA RAINWATER AND LAND DEVELOPMENT MANUAL.
- CONTRACTOR SHALL PROVIDE AN OPEN AGGREGATE CONCRETE TRUCK WASHOUT AREA ON SITE. CONTRACTOR TO ENSURE THAT CONCRETE WASHOUT SHALL BE CONTAINED TO THIS DESIGNATED AREA AND NOT BE ALLOWED TO RUN INTO STORM TRENCHES OR INTO THE OVERLAND STORMWATER DRAINAGE SYSTEM. WASHOUT AREA SHALL BE REMOVED PRIOR TO COMPLETION OF CONSTRUCTION.

CONSTRUCTION SEQUENCE

PHASE	TYPE OF ACTION
1. PRE-CONSTRUCTION ACTION	<ol style="list-style-type: none">CONTRACTOR TO CONTACT STARK SOIL & WATER CONSERVATION DISTRICT TO SCHEDULE A PRE-CONSTRUCTION MEETING AT (330) 451-7645 PRIOR TO ANY EARTH MOVING ACTIVITY.CONTRACTOR TO CALL CUPS AT A MINIMUM OF 2 DAYS PRIOR TO CONSTRUCTION.CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH OF ALL UTILITIES WITHIN THE PROJECT AREA PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DISCREPANCIES.PLACE ALL TEMPORARY SILT FENCE AND INLET PROTECTION.CONSTRUCT TRACKING STONE ENTRANCES AND ANY TEMPORARY CONSTRUCTION ROADWAYS AS NEEDED.CONSTRUCT PERMANENT STORMWATER DETENTION SYSTEMS AND PERMANENT STORMWATER CONVEYANCE SYSTEMS INCLUDING THE UNDERGROUND DETENTION SYSTEM AND ASSOCIATED STORMWATER TREATMENT STRUCTURE AND OUTLET DEVICES.CONSTRUCT ANY TEMPORARY STORMWATER CONVEYANCE SYSTEMS AS NEEDED.STABILIZE ALL TEMPORARY AND PERMANENT EROSION CONTROL AND STORMWATER CONVEYANCE SYSTEMS BEFORE TOPSOIL CAN BE STRIPPED.
2. CONSTRUCTION ACTION	<ol style="list-style-type: none">SITE DEMOLITION AS REQUIRED.STRIP AND RELOCATE TOPSOIL TO THE DESIGNATED TOPSOIL STOCKPILE. FINAL LOCATION BY OWNER/CONTRACTOR. PROVIDE PERIMETER SILT FENCE UNTIL STABILIZED.BEGIN MASS EARTH WORK FOR THE BUILDING PAD AND PAVEMENT AREAS.CONSTRUCT ANY REMAINING STORMWATER CONVEYANCE SYSTEMS, AND INSTALL ALL OTHER UTILITIES ON SITE.DIG AND POUR ALL BUILDING FOOTINGS.PLACE GRAVEL FOR ALL PROPOSED PAVEMENT AREAS.TOPSOIL, SEED, AND MULCH ALL DISTURBED AREAS OUTSIDE THE BUILDING AND PROPOSED PAVEMENT AREAS.CONSTRUCT BUILDING.PAVE DRIVEWAYS AND PARKING AREAS.TOPSOIL, SEED, AND MULCH ALL OTHER DISTURBED AREAS. PLACE EROSION MATTING AS NEEDED.
3. POST CONSTRUCTION ACTION	<ol style="list-style-type: none">CONTRACTOR TO REMOVE TEMPORARY EROSION CONTROL MEASURES UPON SITE STABILIZATION.SEE THE POST CONSTRUCTION MAINTENANCE PLAN FOR PERMANENT STORMWATER MANAGEMENT SYSTEMS.

CONTRACTOR TO FOLLOW THE EROSION CONTROL SPECIFICATIONS FOR CONSTRUCTION EROSION CONTROL INSPECTION AND MAINTENANCE.

CIVIL COVER AND SPECIFICATION SHEET



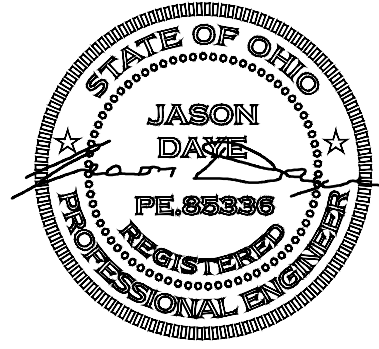
Always a Better Plan

100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED DEVELOPMENT FOR:
STARBUCKS & PANDA EXPRESS
LINCOLN WAY E • MASSILLON, OH 44646

PROFESSIONAL SEAL



PRELIMINARY DATES

JAN. 20, 2023
MAR. 24, 2023

JOB NUMBER

2178020

SHEET NUMBER

C0.1



SPECIFICATION NOTE:
SEE SHEET C0.1 FOR PLAN
SPECIFICATIONS AND REQUIREMENTS

EXISTING CONDITIONS NOTE:

EXISTING CONDITIONS SURVEY WAS PROVIDED TO EXCEL BY ALBAN SURVEYING CO. DATED 04/20/2022. APPLICABLE SURVEY NOTES & LEGEND ARE PROVIDED BELOW FOR REFERENCE.

SURVEY CONTACT:
JOHN ALBAN
ALBAN SURVEYING CO.
38052 EUCLID AVENUE, SUITE 200
WILLOUGHBY, OHIO 44094
216-702-7875

DEMOLITION NOTE:

DEMOLITION PLAN IS AN OVERVIEW OF DEMOLITION TO TAKE PLACE ON SITE. CONTRACTOR TO FIELD VERIFY EXISTING SITE CONDITIONS PRIOR TO BIDDING. CONTRACTOR SHALL REMOVE, REPLACE, OR DEMOLISH ALL ITEMS AS NEEDED DURING CONSTRUCTION.

UTILITY NOTES:

The size and location, both horizontal and vertical of the underground utilities shown hereon, have been obtained by a search of available records. Verification by field observation has been conducted where practical. This survey is subject to change upon receipt of any additional obtainable underground utility information. Therefore, Alban Surveying Company can not guarantee the completeness nor accuracy thereof.

Before excavating in this area, call "OUPS" at 800-362-2764 for field locations of any underground utility facilities.

BASIS OF BEARING:

Bearings are based on Ohio State Plane North Zone (NAV88) by GPS observations.







NOTE:

All pins set are 5/8" x 30" rebar with yellow cap marked "J. Alban 7651".

FLOOD ZONE INFORMATION:

The subject parcel is located in Flood Zone "X", 'areas determined to be outside of the 0.2% annual chance floodplain', as shown on FEMA #39151C0191F, with an effective date of September 14, 2018.

Symbol Legend

-  Catch Basin
-  Water Valve
-  Power Pole
-  Traffic Signal Pole
-  Storm Manhole
-  Sanitary Manhole

PROJECT INFORMATION



Always a Better Plan

100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROPOSED DEVELOPMENT FOR:

STARBUCKS & PANDA EXPRESS

LINCOLN WAY E • MASSILLON, OH 44646

PROFESSIONAL SEAL

PRELIMINARY DATES

JAN. 17, 2023
JAN. 20, 2023
MAR. 24, 2023

NOT FOR CONSTRUCTION

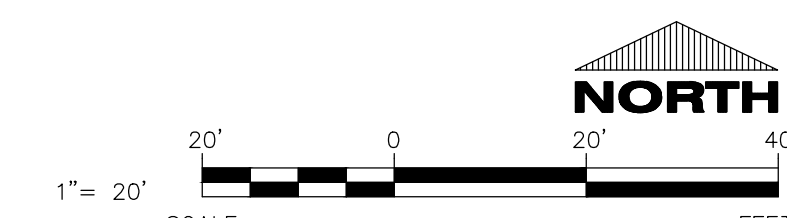
JOB NUMBER

2178020

SHEET NUMBER

C1.0

2021 © EXCEL ENGINEERING, INC.



CIVIL EXISTING SITE AND DEMOLITION PLAN

SPECIFICATION NOTE:
SEE SHEET C0.1 FOR PLAN
SPECIFICATIONS AND REQUIREMENTS



Always a Better Plan

100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED DEVELOPMENT FOR:

STARBUCKS & PANDA EXPRESS

LINCOLN WAY E • MASSILLON, OH 44646

PROPOSED DEVELOPMENT FOR:

LINCOLN WAY E • MASSILLON, OH 44646

SITE INFORMATION:

EXISTING SITE PARCEL NUMBERS: 600764, 607402, 612594, 601670

PROPERTY AREA (TOTAL): 98,935 S.F. (2.27 ACRES)
 PROPOSED PANDA SITE = 52,720 S.F. (1.21 AC)
 PROPOSED STARBUCKS SITE = 46,215 S.F. (1.06 AC)

EXISTING ZONING: RM-1

PROPOSED ZONING: B-3 (REZONE COMPLETED)

PROPOSED USE: QUICK SERVE RESTAURANTS WITH DRIVE-THRU SERVICE

AREA OF SITE DISTURBANCE: 103,181 SF (2.37 AC)

SETBACKS: BUILDING: FRONT = 60'
SIDE = 10'
REAR = 20'

PAVEMENT: OFF-STREET PARKING PERMITTED IN REQUIRED YARDS

MAX. BLDG HEIGHT ALLOWED: 30'

PARKING REQUIRED: 1 SPACE PER 150 S.F. GFA

STARBUCKS: 2230 SF = 15 SPACES REQUIRED
PANDA EXPRESS: 2664 SF = 18 SPACES REQUIRED

PARKING PROVIDED:

STARBUCKS: 34 TOTAL SPACES PROVIDED; 2 HC STALLS
PANDA EXPRESS: 36 TOTAL SPACES PROVIDED; 2 HC STALLS

EXISTING SITE DATA (OVERALL DEVELOPMENT)

	AREA (AC)	AREA (SF)	RATIO
PROJECT SITE	2.27	98,935	
BUILDING FLOOR AREA	0.00	0	0.0%
PAVEMENT (ASP. & CONC.)	0.00	0	0.0%
TOTAL IMPERVIOUS	0.00	0	0.0%
LANDSCAPE/ OPEN SPACE	2.27	98,935	100.0%

PROPOSED SITE DATA (OVERALL DEVELOPMENT)									
--	--	--	--	--	--	--	--	--	--

	AREA (AC)	AREA (SF)	RATIO
PROJECT SITE	2.27	98,935	
BUILDING FLOOR AREA	0.11	4,965	5.0%
PAVEMENT (ASP. & CONC.)	1.34	58,287	58.9%
TOTAL IMPERVIOUS	1.45	63,252	63.9%
LANDSCAPE/ OPEN SPACE	0.82	35,683	36.1%

CURB & GUTTER MARKING KEY:

- ===== INVERTED CURB & GUTTER
===== SHEDDING CURB & GUTTER

PAVEMENT HATCH KEY:

-  STANDARD ASPHALT
 CONCRETE; SEE PLAN & C0.1 FOR DETAILS/SPECIFIED THICKNESS

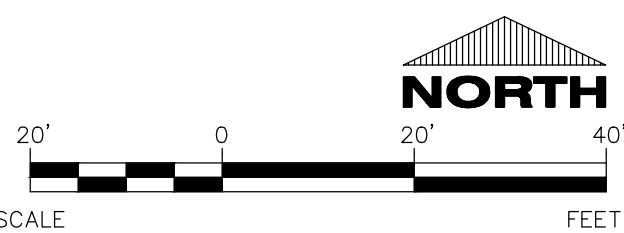
SITE PLAN NOTES:

- A KNOX BOX (MODEL 3200) SHALL BE PROVIDED AT THE PRIMARY ENTRANCE TO ALL NEW BUILDINGS AT A HEIGHT OF 4-6' FROM FINAL GRADE. COORDINATE ADDITIONAL REQUIREMENTS WITH LOCAL BUILDING INSPECTOR/FIRE DEPARTMENT AS NEEDED.
- GC TO COORDINATE WITH SITE SPECIFIC OWNER/TENANT PRIOR TO CONSTRUCTION TO REVIEW ANY ADDITIONAL SITE SPECIFIC REQUIREMENTS/SCOPES OF WORK AS NEEDED.

SITE PLAN KEYNOTES

1	HEAVY DUTY ASPHALT SECTION (TYP.)
3	CONCRETE SIDEWALK/PATIO (TYP.)
4	LIGHT DUTY CONCRETE – PARKING AREAS ONLY (TYP.)
5	HEAVY DUTY/DRIVE-THRU/DUMPSTER PAD CONCRETE (TYP.)
8	CONCRETE STOOP (TYP.) SEE ARCH/STRUCT PLANS FOR FINAL LOCATIONS & DETAILS.
9	RAISED WALK (TYP.)
10	FLUSH WALK (TYP.)
12	CURB RAMP (TYP.)
13	ADA SIDEWALK RAMP (TYP.)
18	18" STANDARD CURB & GUTTER (6" CURB HEIGHT) (TYP.)
15	18" MOUNTABLE CURB & GUTTER (3" CURB HEIGHT) (TYP.)
16	CURB TAPER (TYP.)
18	CONCRETE TRANSFORMER PAD BY UTILITY SUPPLIER (CONTRACTOR TO VERIFY FINAL LOCATION & DESIGN PRIOR TO CONSTRUCTION)
19	HANDICAP SIGN (TYP.)
20	HANDICAP STALL & STRIPING PER STATE CODES.
21	PRECAST CONCRETE WHEEL STOP ANCHORED TO PAVEMENT (TYP.)
22	PROPOSED PYLON SIGN LOCATION (DETAILS, FINAL LOCATION, & APPROVAL BY SIGN VENDOR)
23	DUMPSTER ENCLOSURE (SEE ARCH PLANS FOR DETAILS)
24	6" CONCRETE BOLLARDS (SEE DETAIL ON ARCH PLANS)
25	STOP SIGN (TYP.)
26	RIGHT TURN ONLY SIGN (R3–5R) (TYP.)
27	DO NOT ENTER SIGN (TYP.)
28	DOUBLE SIDED SIGN – STOP/RIGHT TURN ONLY ON SOUTH FACING SIDE. DO NOT ENTER ON NORTH FACING SIDE.
29	USER–SPECIFIC DIRECTIONAL SIGNAGE. COORDINATE WITH OWNER/TENANT
30	WAVE STYLE BIKE RACK (FINAL TYPE/COLOR BY OWNER/TENANT)

31	DETECTABLE WARNING PLATE
32	TRAFFIC FLOW ARROWS, COLOR TO MATCH PARKING STALL STRIPING.
33	PAINT STRIPING (TYP.). COLOR TO MATCH PARKING STALL STRIPING.
34	REPLACE ASPHALT PAVEMENT PER CITY OF MASSILON/OH DOT STANDARDS AS NEEDED FOR PROPOSED SITE IMPROVEMENTS. SEE DETAIL ON C2.0. (TYP.)
35	CONCRETE SIDEWALK PER LOCAL STANDARDS. (TYP.)
36	VERSA-LOK OR EQUIVALENT MODULAR BLOCK RETAINING WALL SYSTEM, COLOR/STYLE TO BE COORDINATED WITH OWNER/TENANT PREFERENCE SHEET FOR PROPOSED WALL HEIGHTS AND C2.0 FOR GENERAL RETAINING WALL DETAIL. FINAL DESIGN DETAILS & SPECIFICATIONS BY WALL SUPPLIER. WALLS DESIGNED TO ACCOUNT FOR SITE FEATURES SUCH AS LIGHT POLES, FENCES, UTILITIES, ETC NEAR OR ADJACENT TO RETAINING WALL.
37	6" TALL MINIMUM OPAQUE FENCE, FINAL COLOR/STYLE BY OWNER/TENANT. CONTRACTOR TO COORDINATE FENCING REQUIREMENTS WITH RETAINING WALL SUPPLIER AS NEEDED.
38	DEDICATED MOBILE ORDER PICK-UP PARKING SPACE. COORDINATE WITH OWNER/TENANT FOR SPECIFIC SIGNAGE AND/OR PAVEMENT MARKINGS. (TYP.)
39	COLUMN. (TYP.). (SEE ARCH/STRUCT PLANS FOR DETAILS)
40	CANOPY. (TYP.). (SEE ARCH PLANS)
41	CLEARANCE BAR. COORDINATE WITH OWNER/TENANT FOR SITE SPECIFIC DRIVE-THRU EQUIPMENT REQUIREMENTS.
42	MENU BOARD & SPEAKER POST SYSTEM. COORDINATE WITH OWNER/TENANT FOR FINAL LOCATIONS, FOUNDATION DETAILS, CONDUIT REQUIREMENTS, ETC.
43	CONTRACTOR TO COORDINATE WITH OWNER/TENANT FOR FINAL PLOT LAYOUT. SEE SHEET C1.2 FOR PROPOSED PLOT GRADING/DRAINAGE.
44	6" DRIVE-THRU VERTICAL CURB. (TYP.)
45	6" CURB, SEE SHEET C1.2 FOR PROPOSED GRADES.
46	CONCRETE WALL, SEE ARCH/STRUCT PLANS. PROVIDE THRU-WALL DRAINAGE OPENINGS AS NEEDED TO DRAIN PLOT AREA.
47	APPROXIMATE EXTENT OF UNDERGROUND DETENTION AREA. SEE SHEET C1.1.
48	CURB WITHIN ROW SHALL BE 6" WIDE X18" DEEP STRAIGHT CURB PER LOCAL REQUIREMENTS. (ODOT TYPE 6 CURB)



CIVIL SITE PLAN

PROFESSIONAL SEAL

PRELIMINARY DATES

DEC. 8, 2022
JAN. 10, 2023
JAN. 17, 2023
JAN. 20, 2023
MAR. 24, 2023

NOT FOR CONSTRUCTION

JOB NUMBER

2178020

SHEET NUMBER

C1.1

2021 © EXCEL ENGINEERING, INC.



Always a Better Plan

100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED DEVELOPMENT FOR:
STARBUCKS & PANDA EXPRESS
LINCOLN WAY E • MASSILLON, OH 44646

PROFESSIONAL SEAL

PRELIMINARY DATES

DEC. 19, 2022
JAN. 10, 2023
JAN. 17, 2023
JAN. 20, 2023
MAR. 24, 2023

JOB NUMBER

2178020

SHEET NUMBER

C1.2A

2021 © EXCEL ENGINEERING, INC.

SPECIFICATION NOTE:
SEE SHEET C0.1 FOR PLAN
SPECIFICATIONS AND REQUIREMENTS

NOTES:

- HANDICAP STALL AND ACCESS AISLES SHALL NOT EXCEED A SLOPE OF 1.50% IN ANY DIRECTION. HANDICAP STALL & ACCESS AISLES SHALL CONFORM TO ADA REQUIREMENTS (CURRENT EDITION).
- ALL SIDEWALKS SHALL NOT EXCEED A MAXIMUM CROSS SLOPE OF 1.50% AND RUNNING SLOPE OF 4.50% UNLESS OTHERWISE SPECIFIED.

INLET PROTECTION NOTE:

CONTRACTOR SHALL PROVIDE TEMPORARY INLET PROTECTION FOR ALL CURB INLETS & CATCH BASINS ONSITE & OFFSITE IMMEDIATELY DOWNSTREAM OF THE PROJECT SITE PER LOCAL CODE.

STABILIZED CONSTRUCTION ENTRANCE NOTE:

CONTRACTOR SHALL PROVIDE STABILIZED CONSTRUCTION ENTRANCE AT CONSTRUCTION ENTRANCE FOR PROPOSED IMPROVEMENTS AS REQUIRED PER CODE.

CONCRETE WASHOUT NOTE:

CONTRACTOR SHALL PROVIDE CONCRETE WASHOUT AS REQUIRED PER CODE. FINAL LOCATION TBD BY CONTRACTOR.

EROSION/SEDIMENT CONTROL NOTE:

THE CONTRACTOR SHALL PREVENT AND/OR REDUCE AND CONTROL SOIL EROSION RESULTING FROM THE PROPOSED IMPROVEMENTS. THE USE OF SILT FENCING, JUTE MATTING, TEMPORARY SEEDING, SILT CHECKS, INLET PROTECTION AROUND ALL CATCH BASINS, STABILIZED CONSTRUCTION ENTRANCES, ETC. WILL BE REQUIRED. SEDIMENT CONTROL STRUCTURES/DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL RAINWATER AND LAND DEVELOPMENT - OHIO'S STANDARDS FOR STORMWATER MANAGEMENT, LAND DEVELOPMENT, AND URBAN STREAM PROTECTION. SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUED INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS SET FORTH ON THE APPROVED STORM WATER POLLUTION PREVENTION PLAN IF APPLICABLE, OR AS DETAILED ON THE CONSTRUCTION PLANS, AS SPECIFIED BY THE CITY OF MASSILLON.

SURVEY NOTES

BASIS OF BEARING:

Bearings are based on Ohio State Plane North Zone (NAV88) by GPS observations.

NOTE:

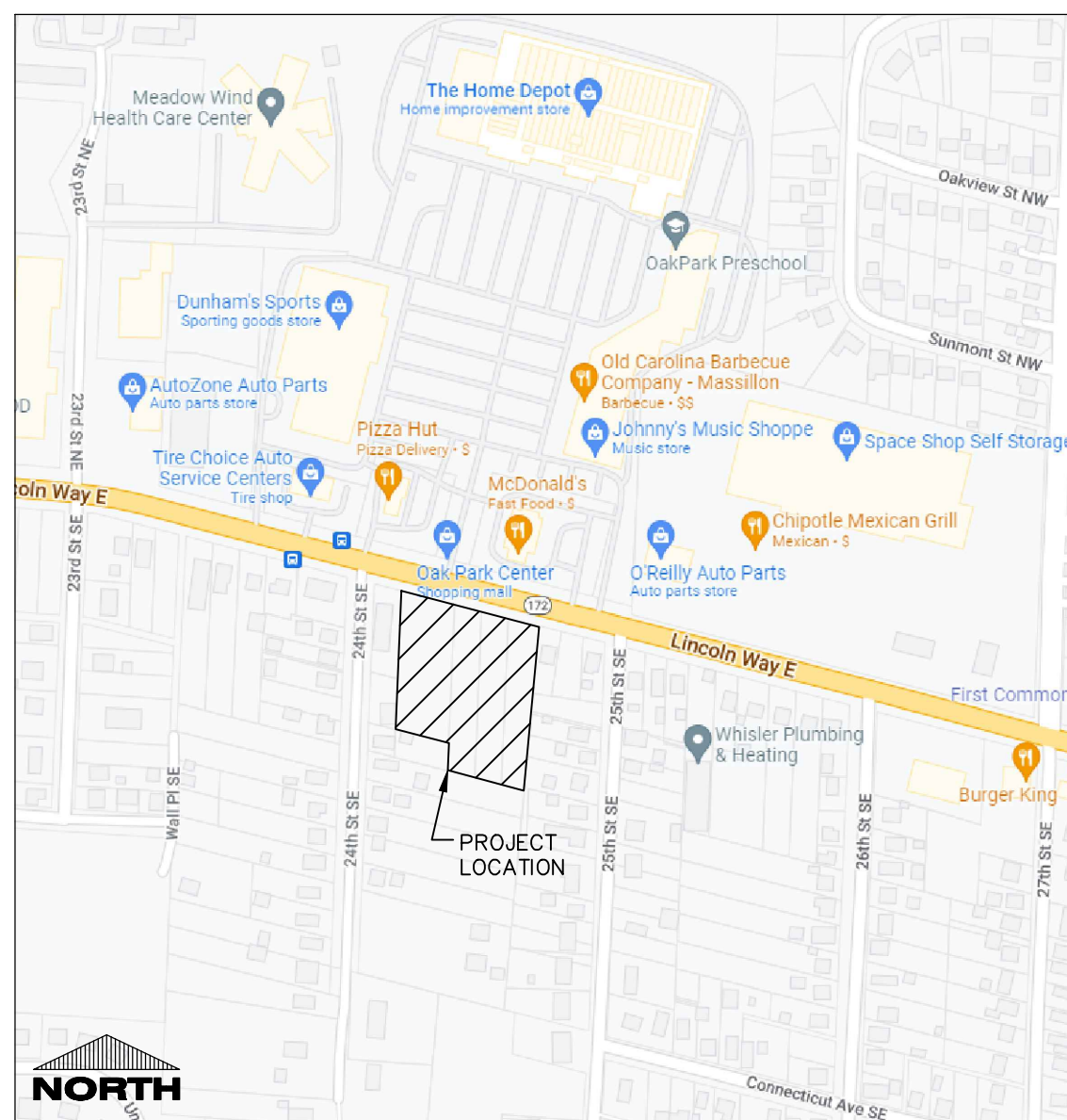
All pins set are 5/8" x 30" rebar with yellow cap marked "J. Alban 7651".

FLOOD ZONE INFORMATION:

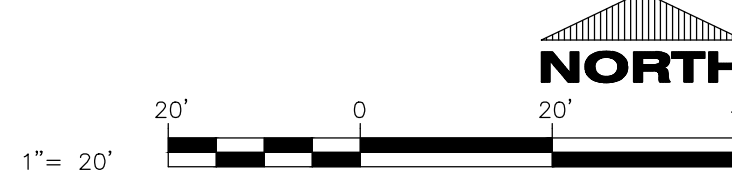
The subject parcel is located in Flood Zone "X", areas determined to be outside of the 0.2% annual chance floodplain, as shown on FEMA #39151C0191F, with an effective date of September 14, 2018.

OVERALL SITE STORMWATER DISCHARGE:

PROJECT SITE WILL DISCHARGE TO CITY STORM SEWER IN 25TH STREET ROW. SITE IS WITHIN OVERALL WATERSHED OF TUSCARAWAS RIVER



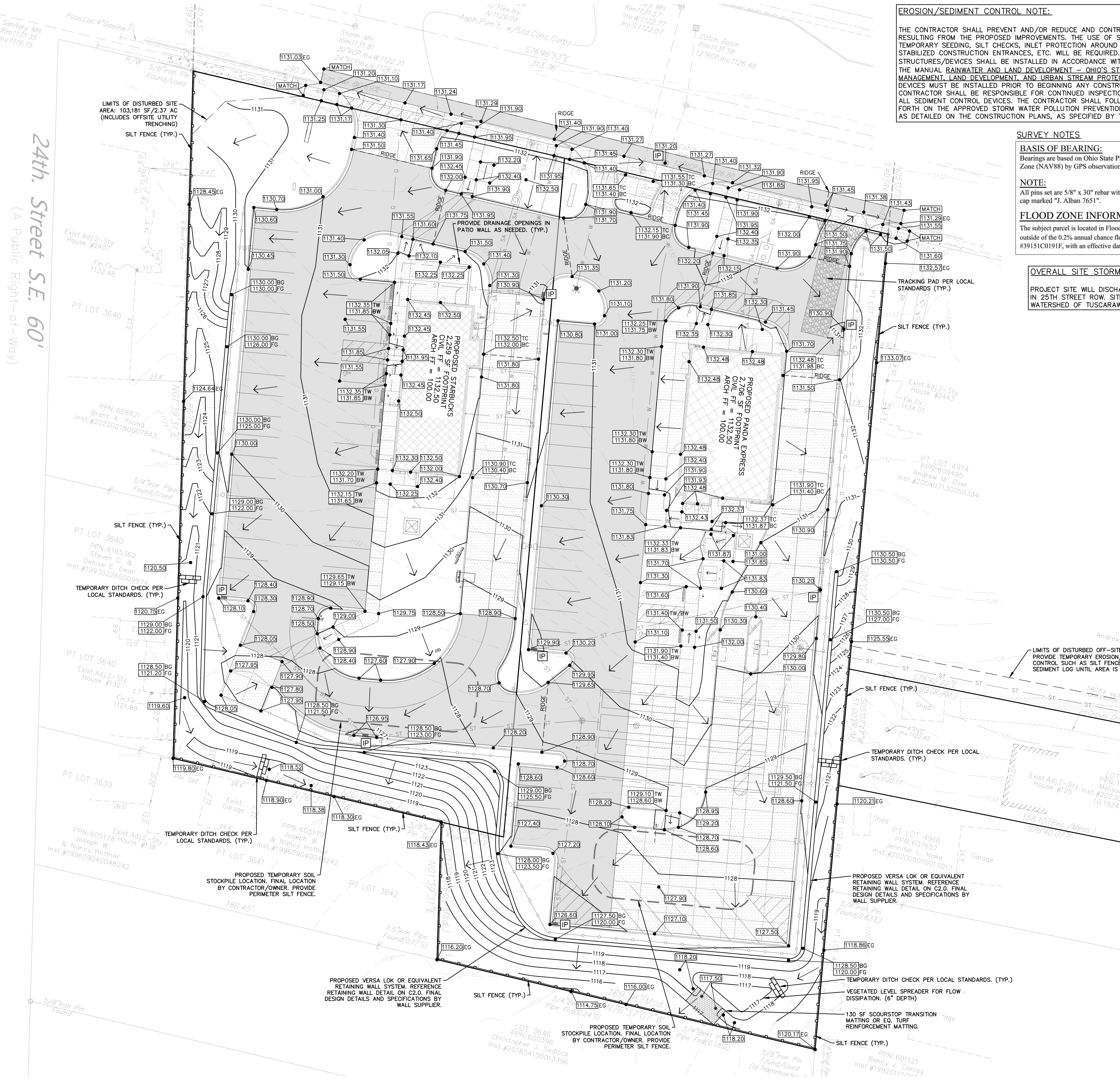
PROJECT LOCATION MAP



CIVIL GRADING AND EROSION CONTROL PLAN

24th. Street S.E. 60'

(A Public Right-of-Way)





SPECIFICATION NOTE:
SEE SHEET C0.1 FOR PLAN
SPECIFICATIONS AND REQUIREMENTS



Always a Better Plan

100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED DEVELOPMENT FOR:
STARBUCKS & PANDA EXPRESS
LINCOLN WAY E • MASSILLON, OH 44646

PROFESSIONAL SEAL

PRELIMINARY DATES

DEC. 19, 2022
JAN. 10, 2023
JAN. 17, 2023
JAN. 20, 2023
MAR. 24, 2023

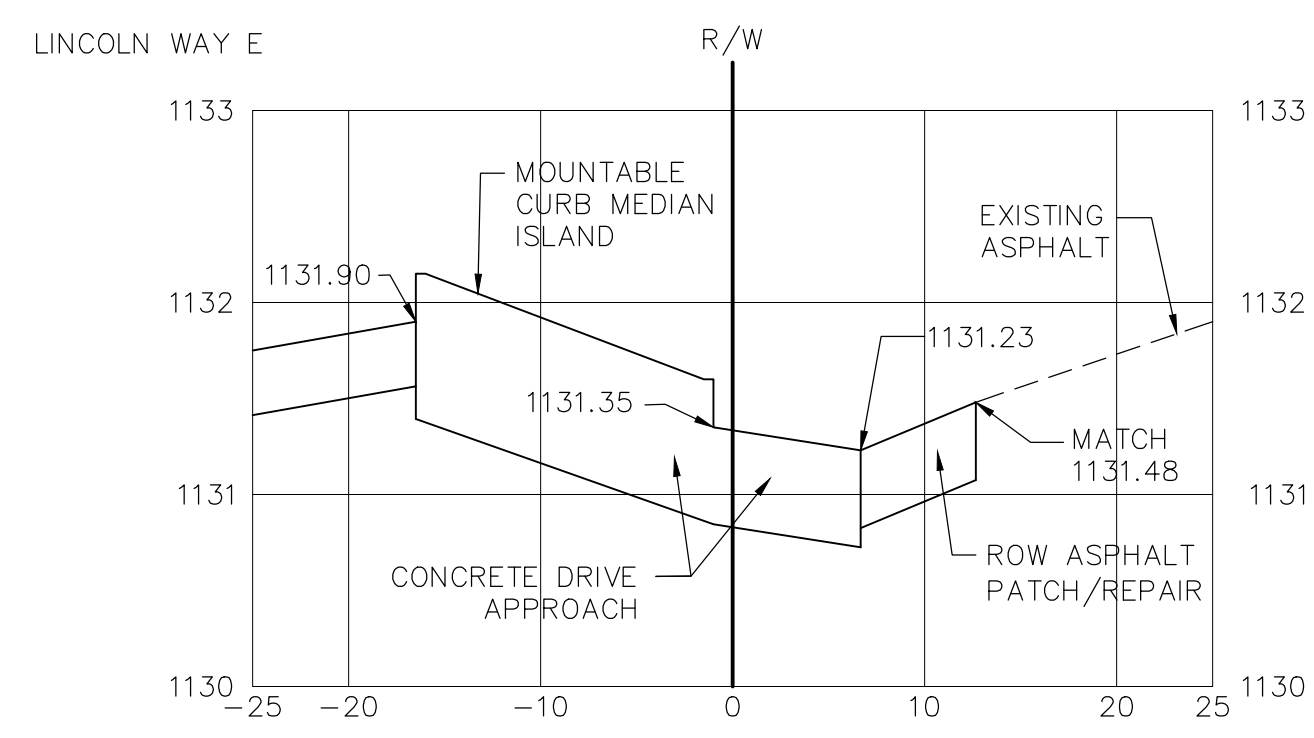
JOB NUMBER

2178020

SHEET NUMBER

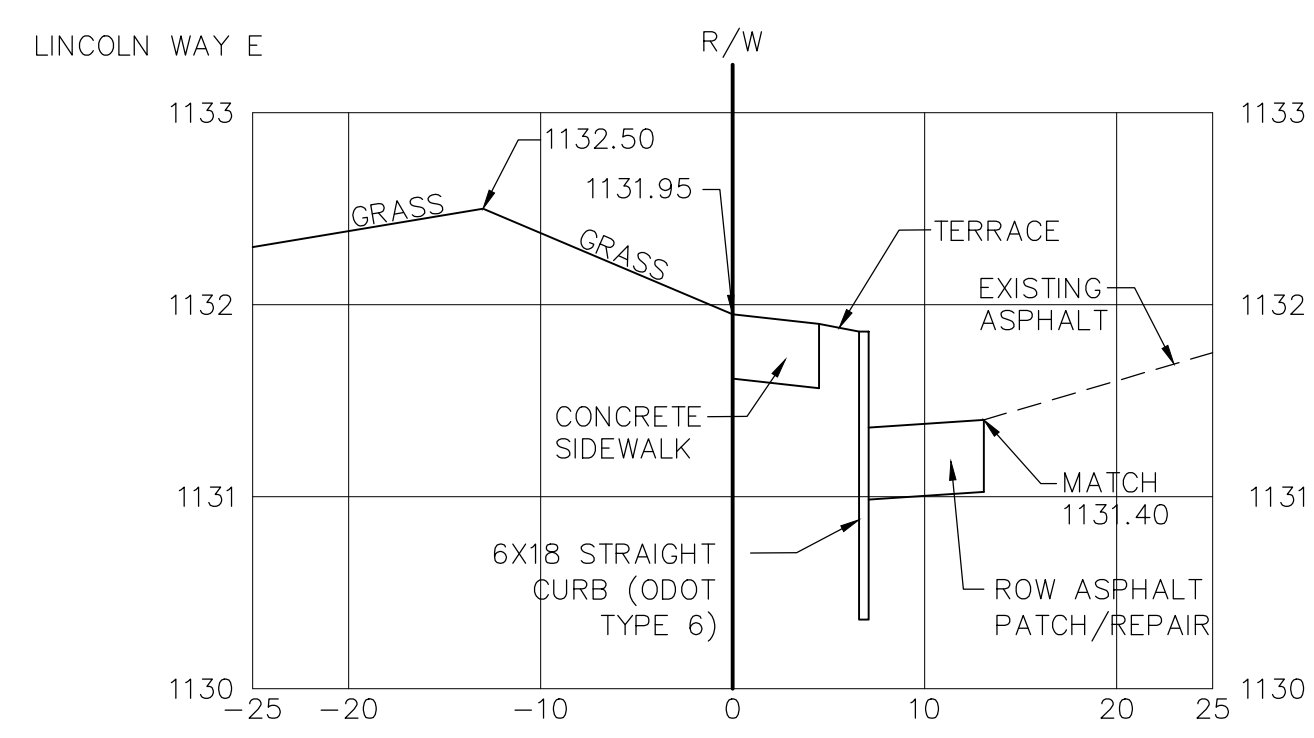
C1.2B

2021 © EXCEL ENGINEERING, INC.



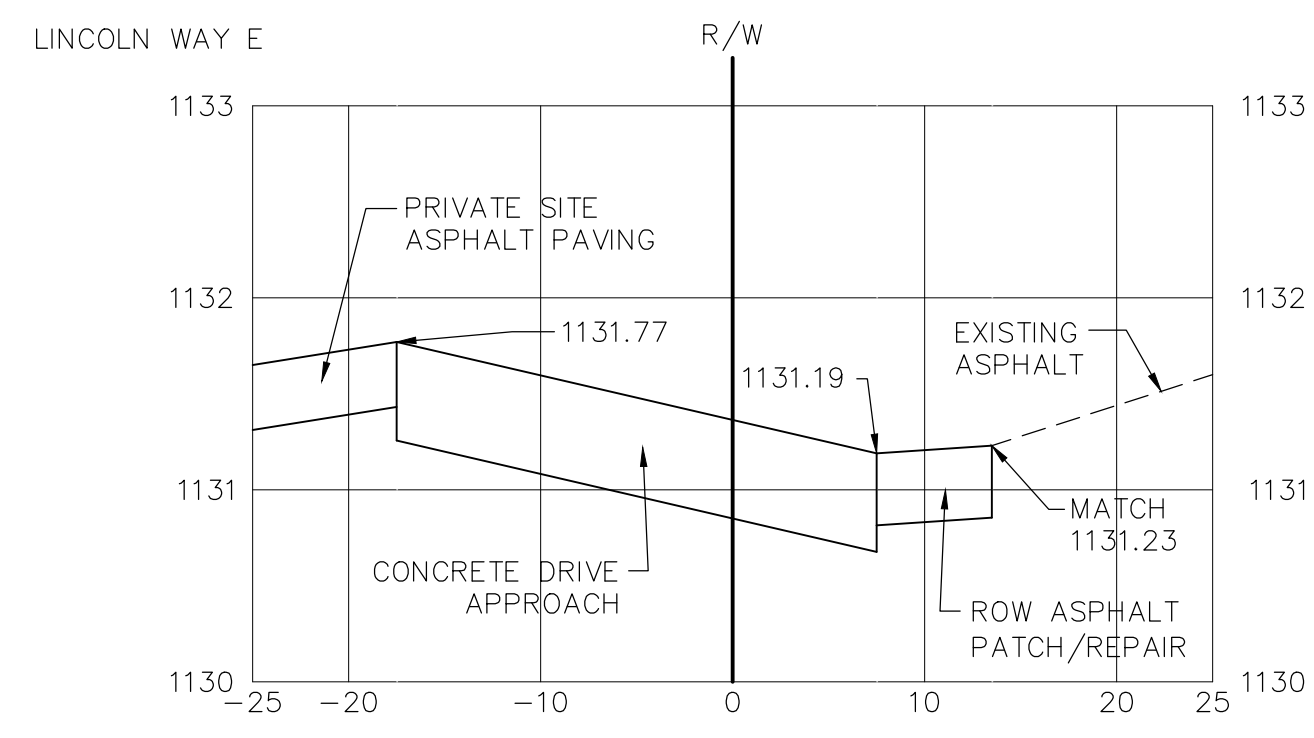
SECTION C

STA 2+00
HORZ.: 1"=10'
VERT.: 1"=1'



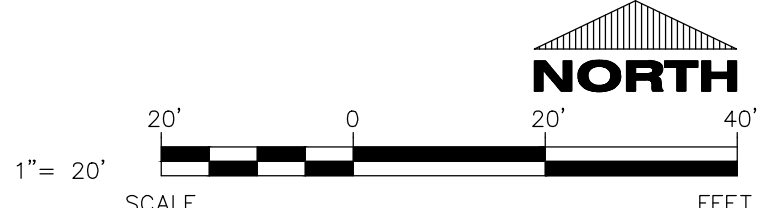
SECTION B

STA 1+50
HORZ.: 1"=10'
VERT.: 1"=1'



SECTION A

STA 1+00
HORZ.: 1"=10'
VERT.: 1"=1'



CIVIL GRADING AND EROSION CONTROL PLAN - CROSS SECTION VIEWS

24th. Street S.E. 60'
(A Public Right-of-Way)

SPECIFICATION NOTE:
SEE SHEET C0.1 FOR PLAN
SPECIFICATIONS AND REQUIREMENTS

DOWNSPOUT NOTE:

DS = DENOTES DOWNSPOUT
LOCATIONS. MAKE CONNECTION TO DS WITH 6"
PVC ABOVE GRADE. ALL DOWNSPOUTS SHALL BE
CONNECTED TO STORM SEWER. SEE ARCH PLANS
FOR FINAL LOCATIONS.

CLEANOUT NOTE:

CO = DENOTES LOCATIONS WHERE
CONTRACTOR SHALL INSTALL CLEANOUTS, SEE
C0.1 FOR SPECIFICATION.

NOTE: EXISTING SANITARY AND WATER LATERALS
FROM PREVIOUS RESIDENTIAL HOMES MAY EXIST
ON THE SUBJECT SITE. IF THESE SERVICES ARE
ENCOUNTERED, CAP/ABANDON SERVICES PER
LOCAL STANDARDS.

UTILITY NOTE:

SITE UTILITY CONTRACTOR SHALL COORDINATE FINAL
UTILITY REQUIREMENTS, LOCATIONS, AND DEPTHS WITH
EACH SPECIFIC OWNER/TENANT'S INTERNAL PLUMBING
PLANS PRIOR TO CONSTRUCTION.

NOTE: CONTRACTOR SHALL COORDINATE WITH LANDLORD
WORK LETTER AND/OR TENANT'S FINAL CONSTRUCTION
DOCUMENT PLAN SET FOR SPECIFIC SITE REQUIREMENTS
RELATING TO THE EACH OWNER/TENANT'S SCOPES OF WORK.

NOTE: PRIOR TO COMMENCING ANY WORK WITHIN CITY ROW
OR PRIOR TO MAKING ANY UTILITY TAPS/CONNECTIONS,
CONTRACTOR SHALL CONTACT APPROPRIATE PUBLIC UTILITY
DEPARTMENTS TO FACILITATE ANY NECESSARY INSPECTIONS,
WORK IN ROW PERMITS, ETC.

NOTE: CONTRACTOR SHALL COORDINATE A PRIVATE LOCATE TO
BE COMPLETED TO LOCATE UNDERGROUND UTILITIES AS
NEEDED. EXISTING UTILITIES SHALL BE FIELD VERIFIED AND
INFORMATION PROVIDED TO THE DESIGN ENGINEER AS
NEEDED. DOWNSTREAM UTILITY CONNECTIONS MUST BE
VERIFIED PRIOR TO CONSTRUCTION. NOTIFY DESIGN ENGINEER
WITH ANY DISCREPANCIES.

CURB INLET UNDERDRAIN NOTE:

ALL ONSITE CURB INLET STRUCTURES SHALL BE PROVIDED
WITH A MINIMUM OF TWO (2) PERFORATED/SOCKED
UNDERDRAINS EXTENDED 20' OUT FROM STRUCTURE BELOW
SITE CURB LINES. UNDERDRAINS SHALL BE 4" DIA AND
SHALL BE PLACED AT AN INVERT ELEVATION OF 2' BELOW
RIM ELEVATION OF EACH STRUCTURE. SLOPE UNDERDRAIN
AT 1% TOWARD INLET. REFER TO PAVING WITH UNDERDRAIN
DETAIL ON C2.0.



Always a Better Plan

100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED DEVELOPMENT FOR:
STARBUCKS & PANDA EXPRESS
LINCOLN WAY E • MASSILLON, OH 44646

PROFESSIONAL SEAL

PRELIMINARY DATES

JAN. 10, 2023
JAN. 17, 2023
JAN. 20, 2023
MAR. 24, 2023

JOB NUMBER

2178020

SHEET NUMBER

C1.3A

2021 © EXCEL ENGINEERING, INC.



CIVIL UTILITY PLAN

NOT FOR CONSTRUCTION



Always a Better Plan

100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED DEVELOPMENT FOR:
STARBUCKS & PANDA EXPRESS
LINCOLN WAY E • MASSILLON, OH 44646

PROFESSIONAL SEAL

PRELIMINARY DATES

JAN. 10, 2023
JAN. 17, 2023
JAN. 20, 2023
MAR. 24, 2023

NOT FOR CONSTRUCTION

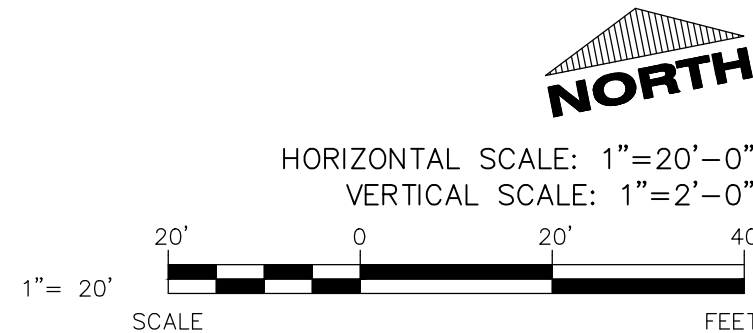
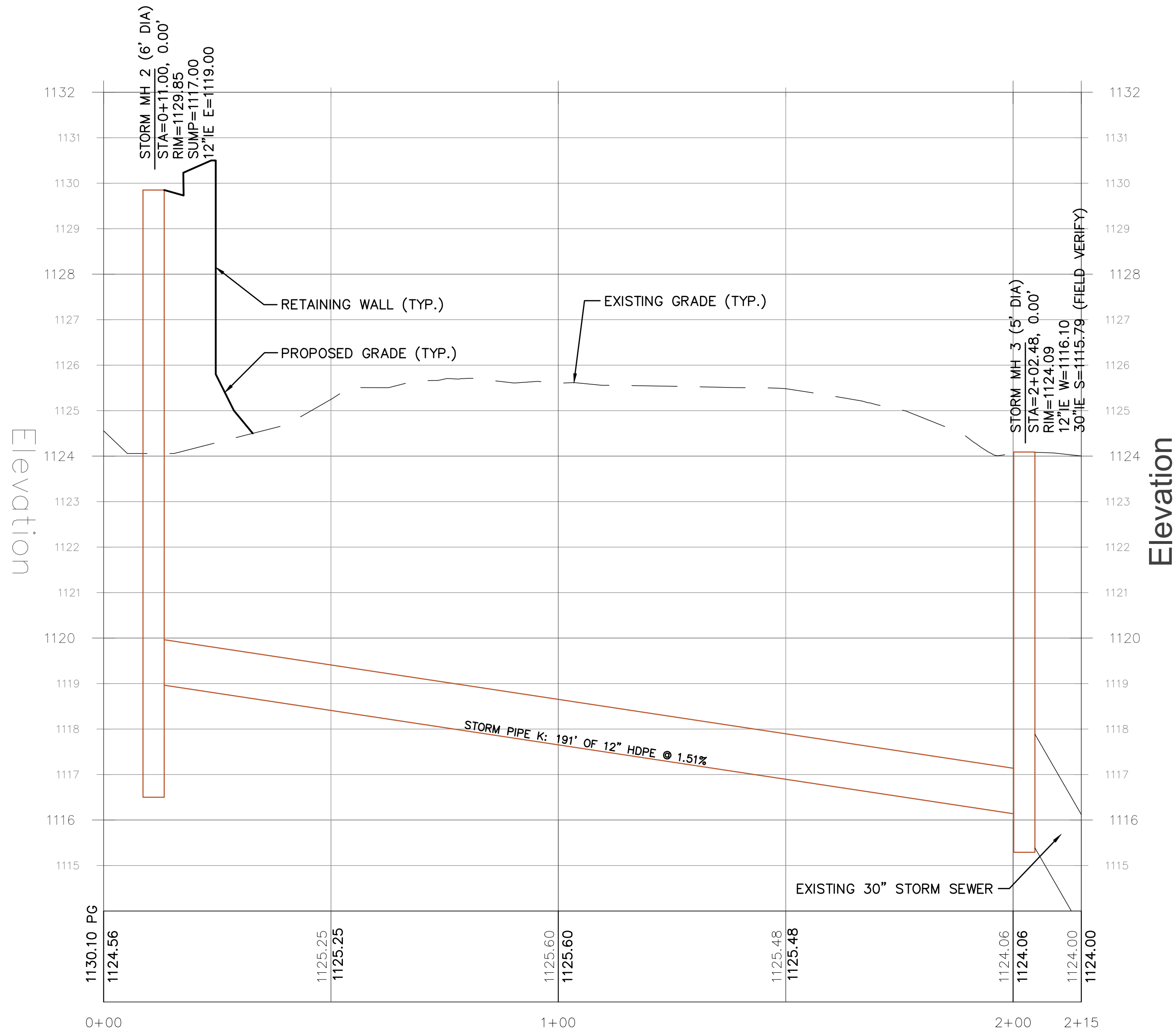
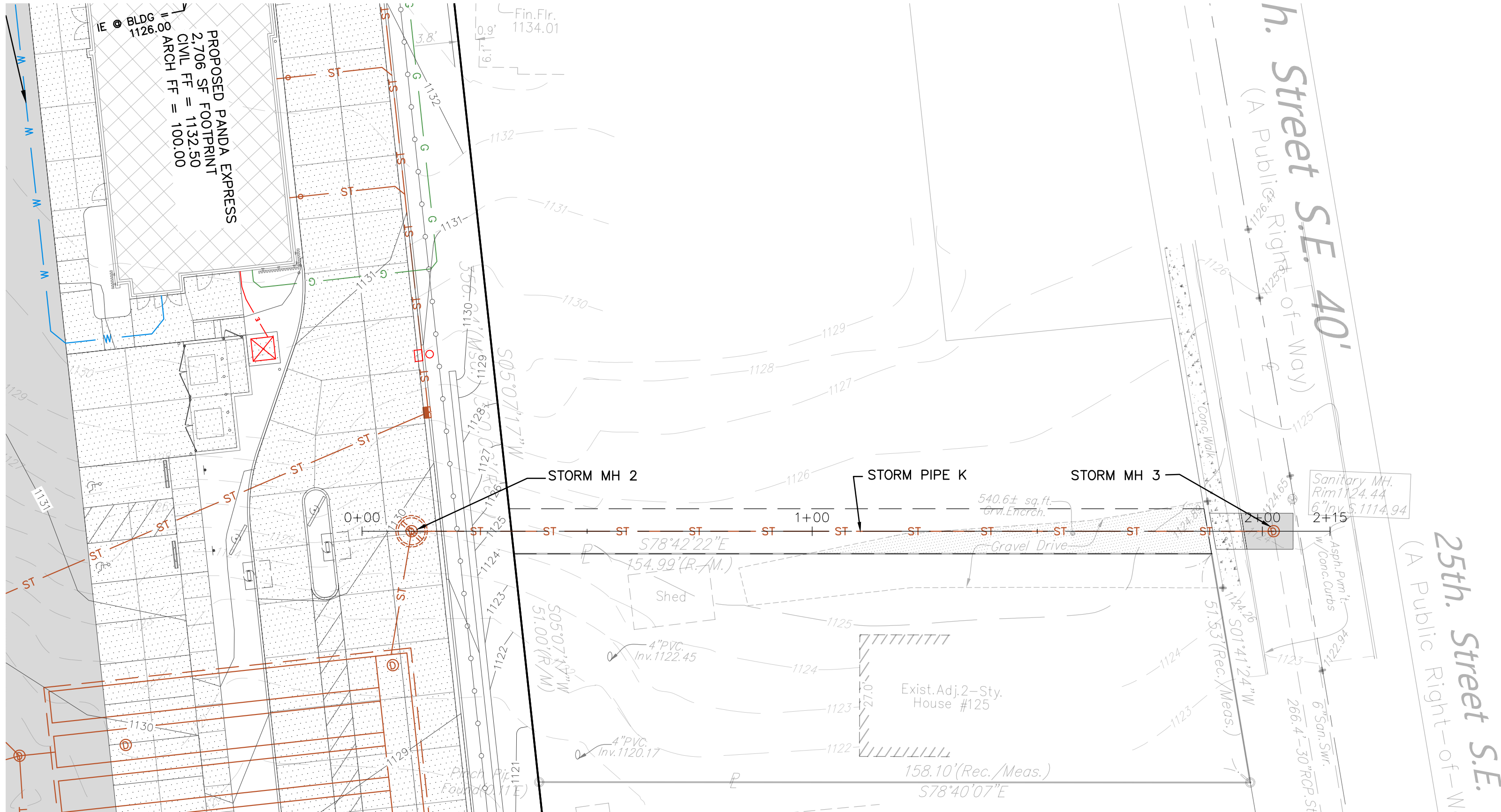
JOB NUMBER

2178020

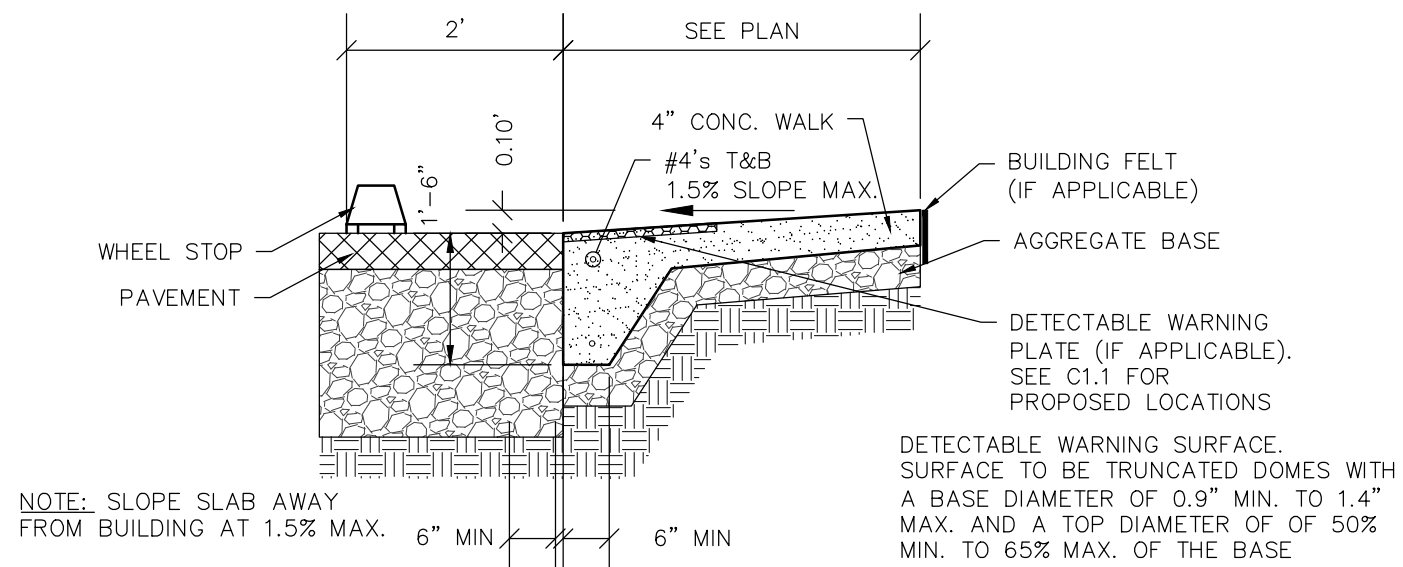
SHEET NUMBER

C1.3B

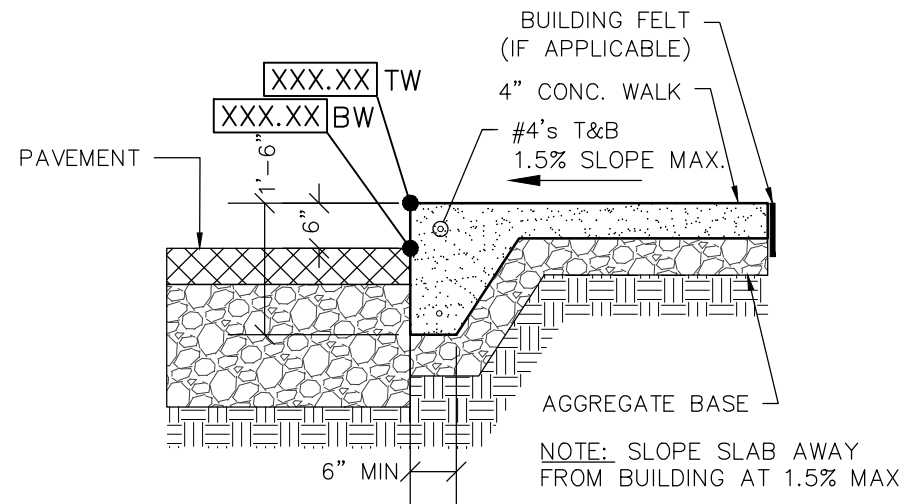
2021 © EXCEL ENGINEERING, INC.



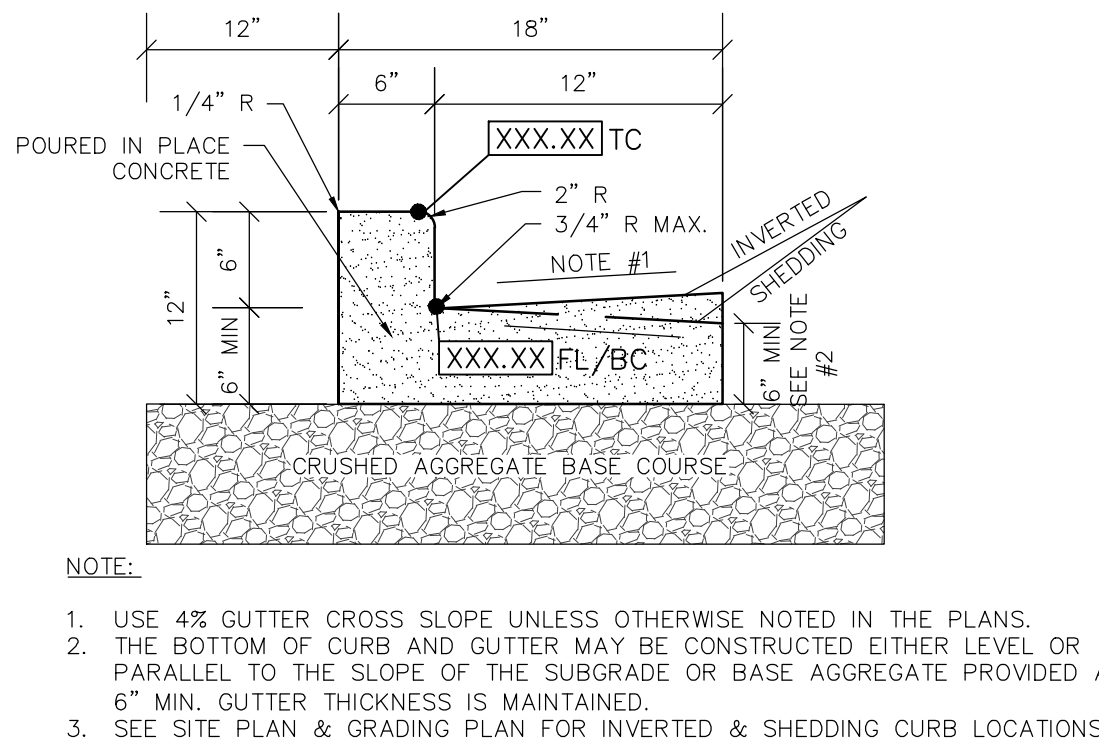
CIVIL UTILITY PLAN - STORM SEWER PLAN/PROFILE



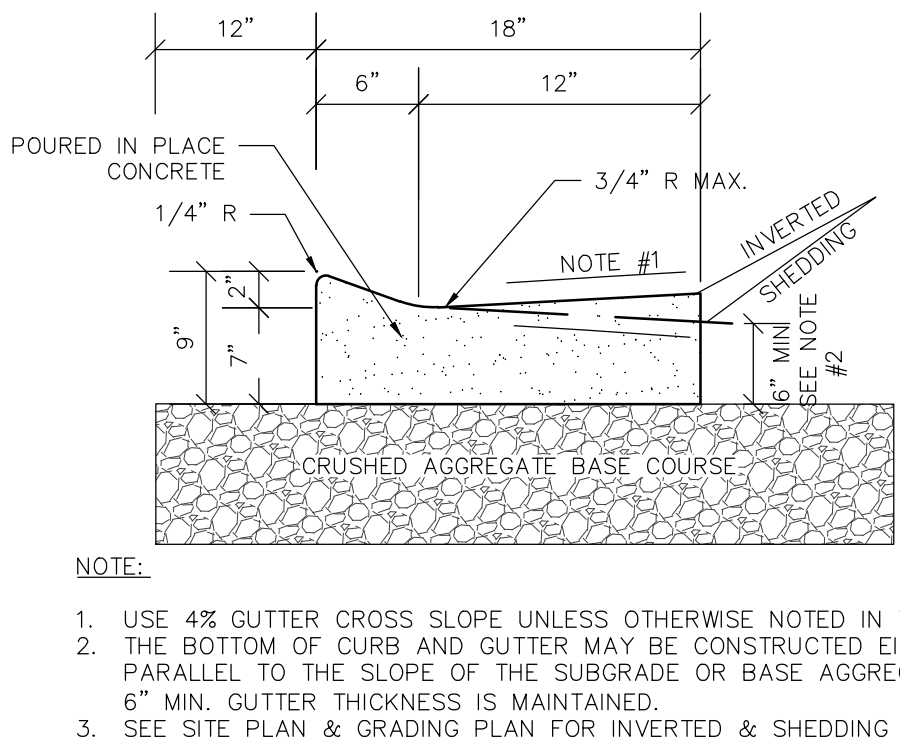
FLUSH WALK DETAIL
NO SCALE



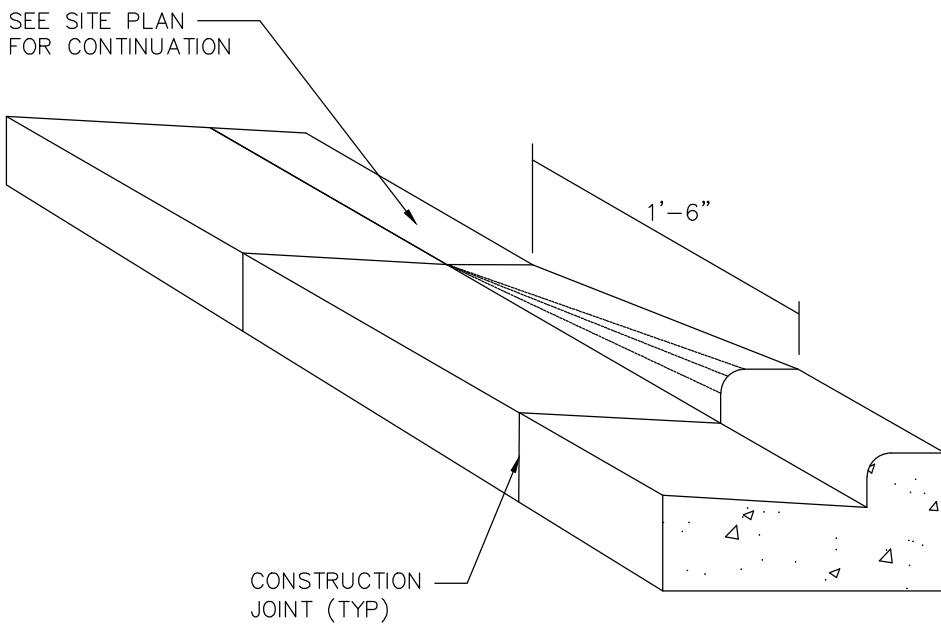
RAISED WALK DETAIL
NO SCALE



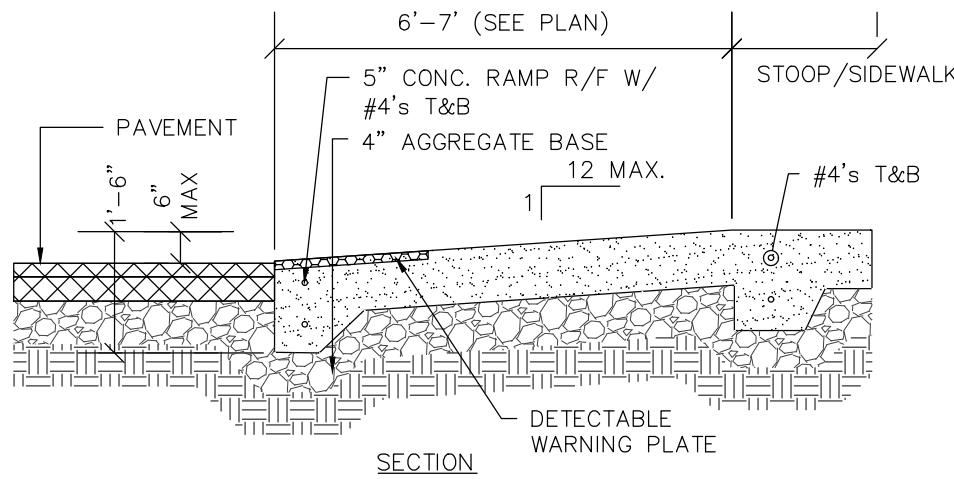
18" CONCRETE CURB & GUTTER DETAIL
NO SCALE



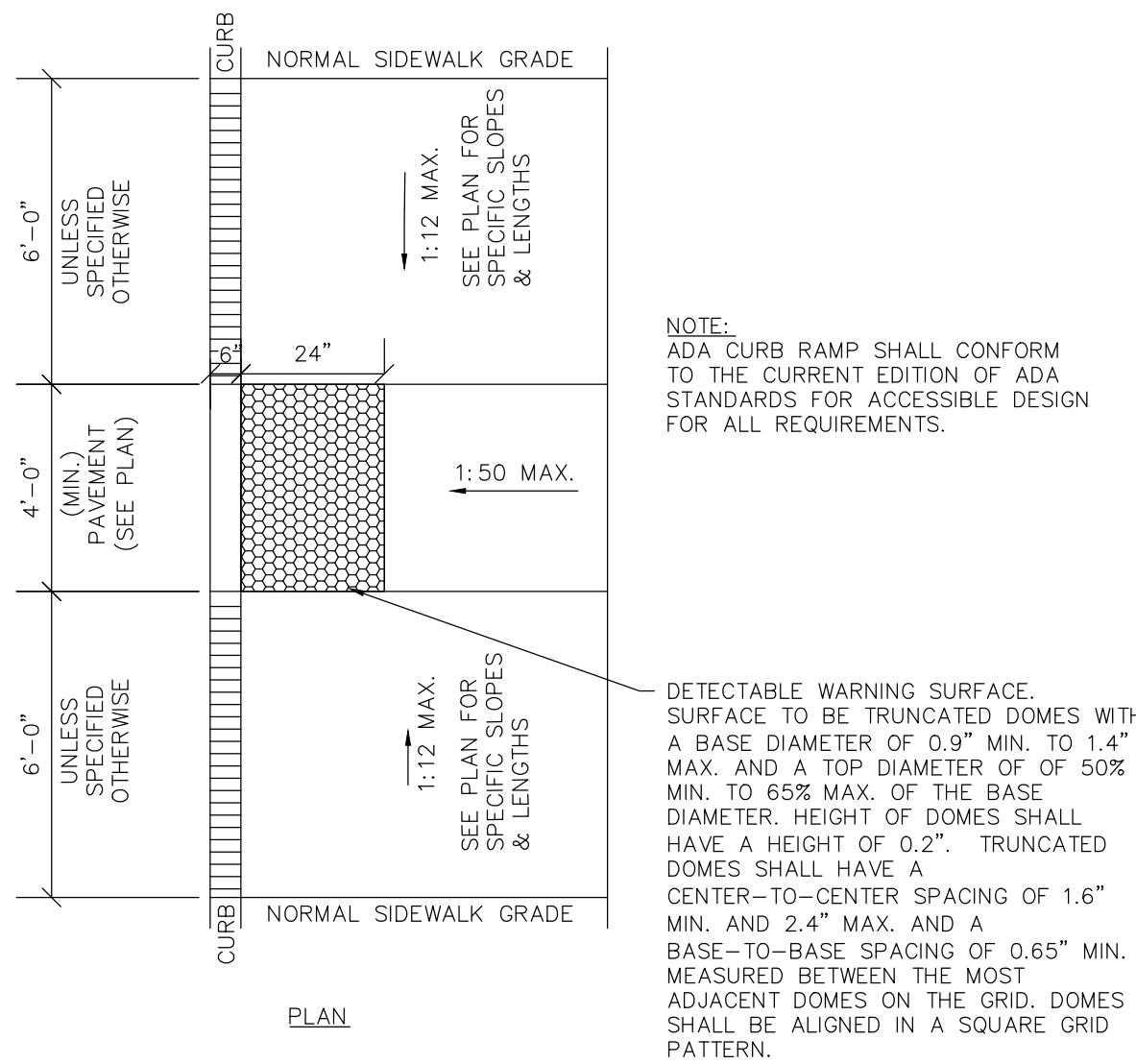
18" MOUNTABLE CURB & GUTTER DETAIL
NO SCALE



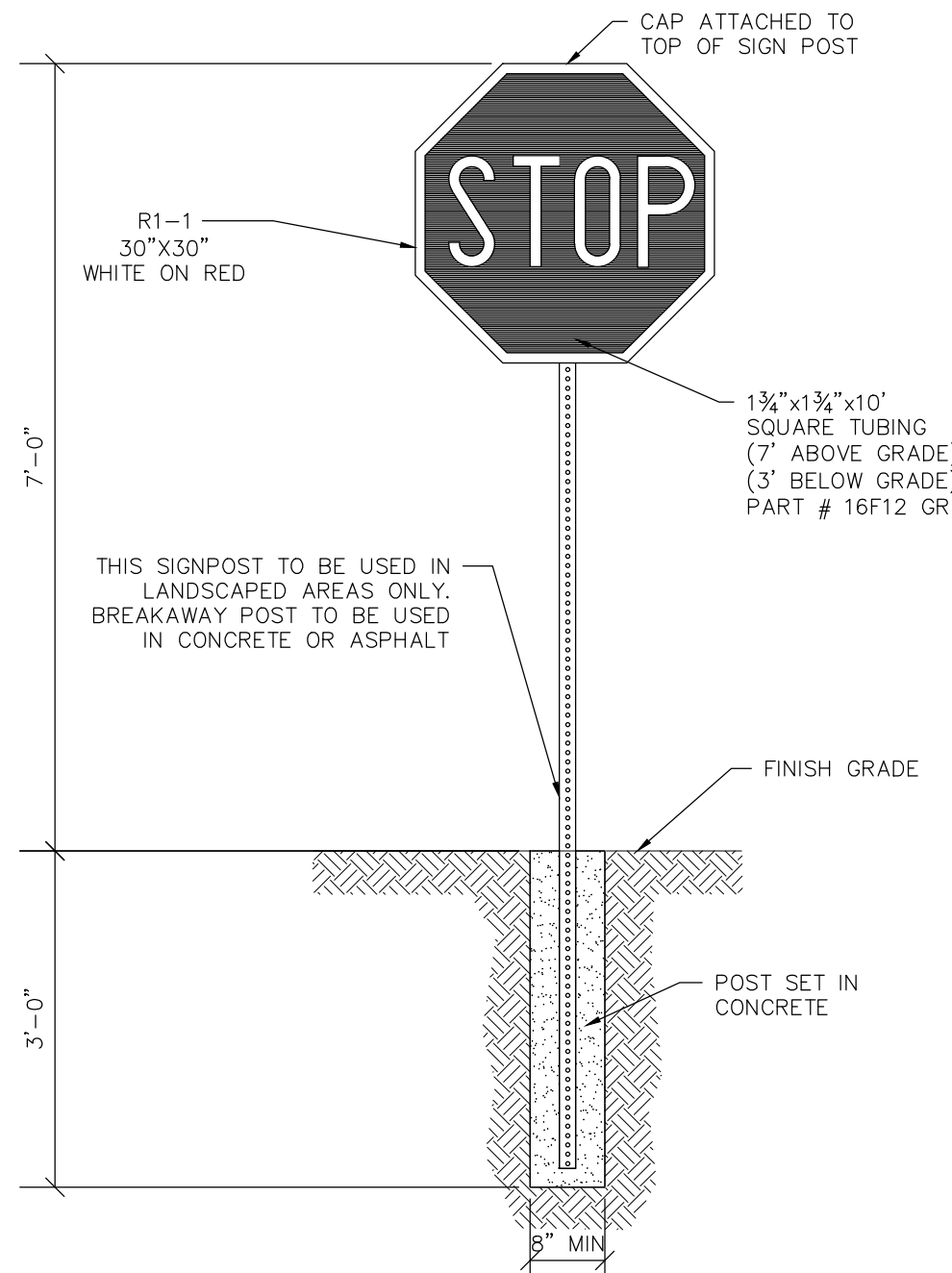
CURB TAPER DETAIL
NO SCALE



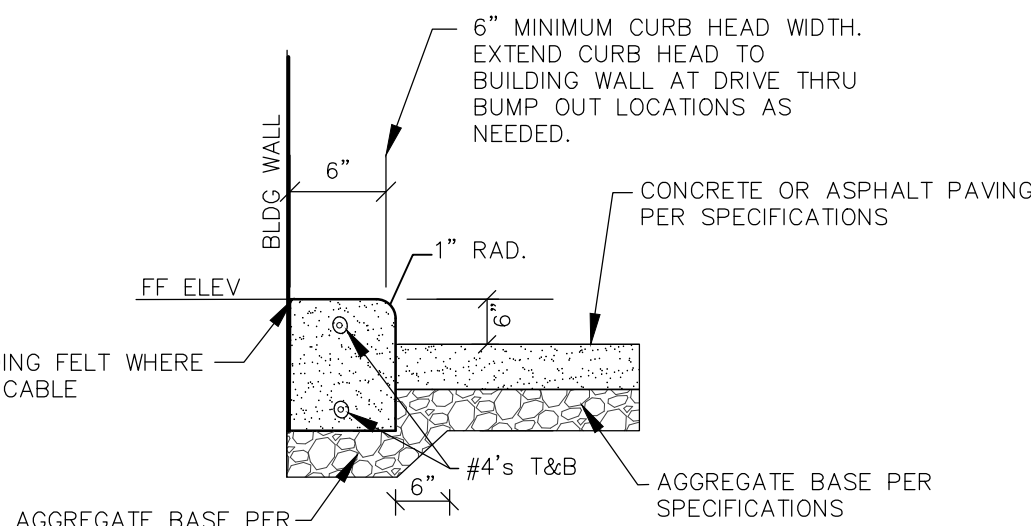
CURB RAMP DETAIL
NO SCALE



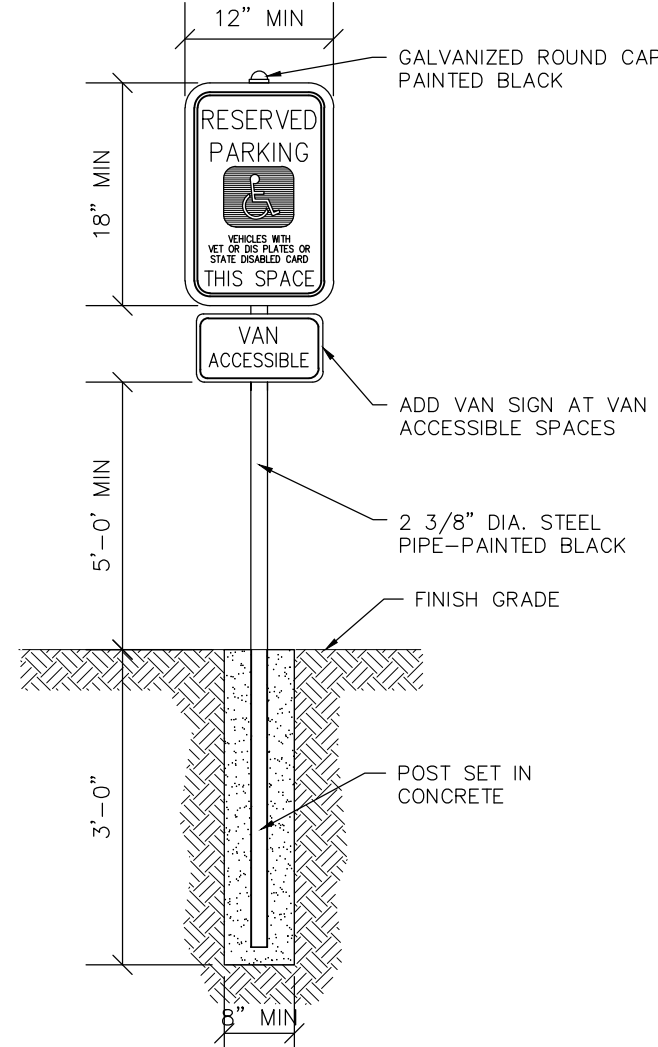
ADA SIDEWALK RAMP DETAIL
NO SCALE



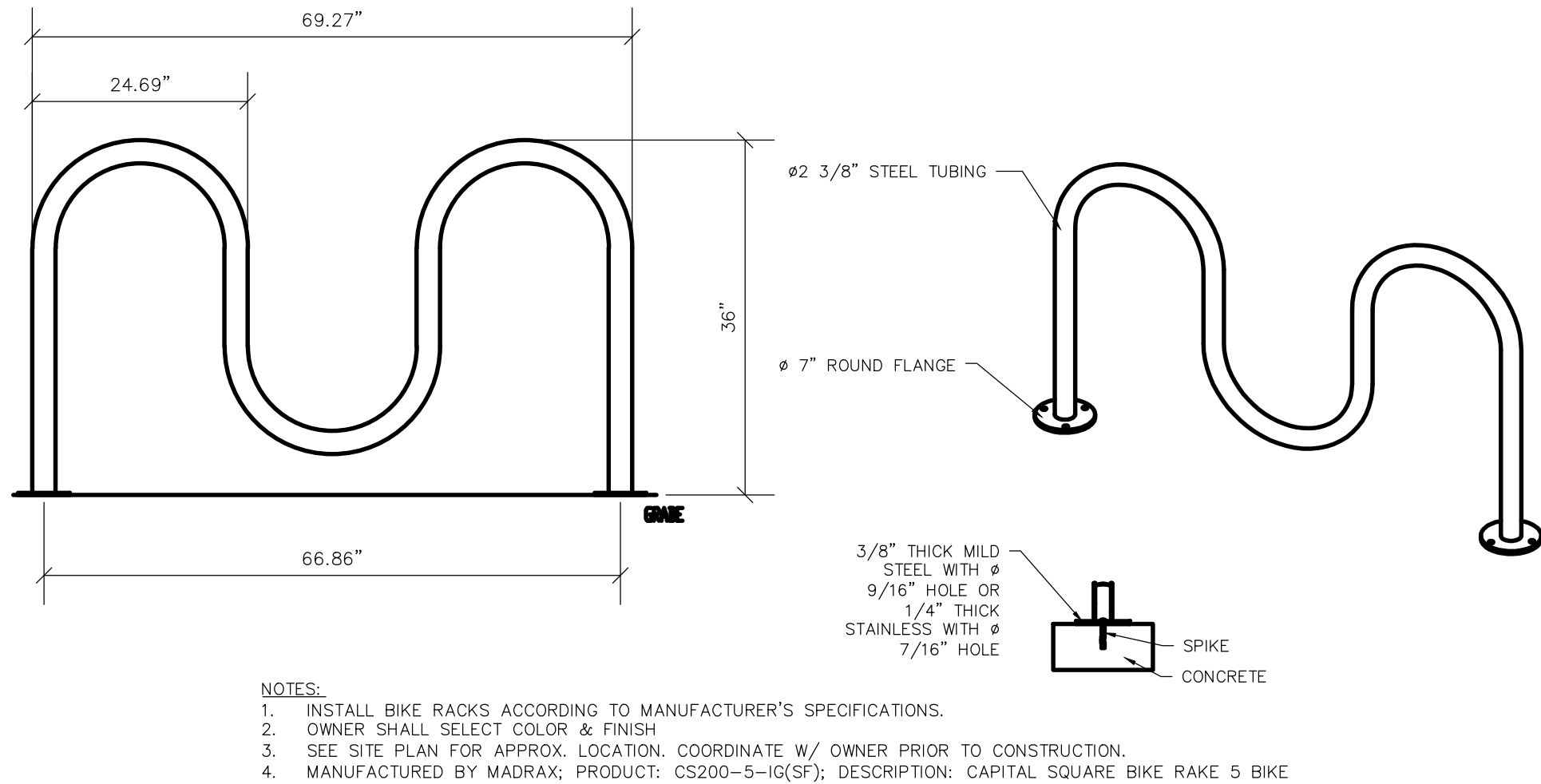
STOP SIGN WITH CONCRETE BASE DETAIL
NO SCALE



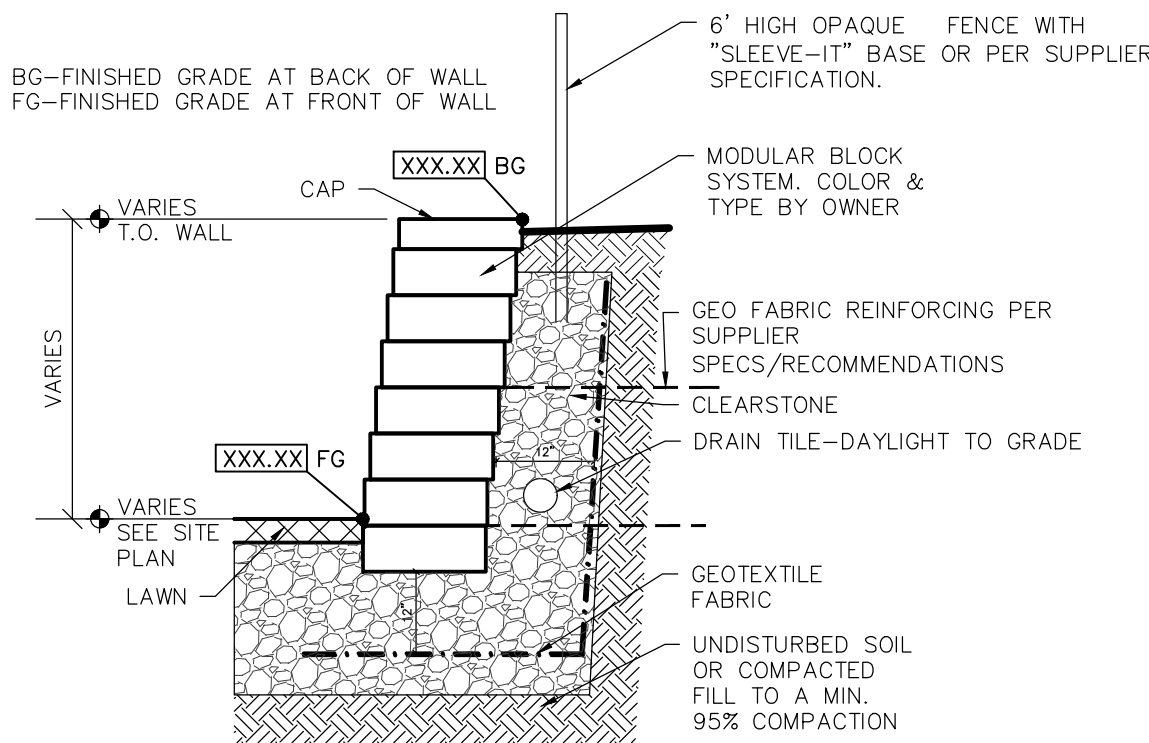
DRIVE THRU VERTICAL CURB DETAIL
NO SCALE



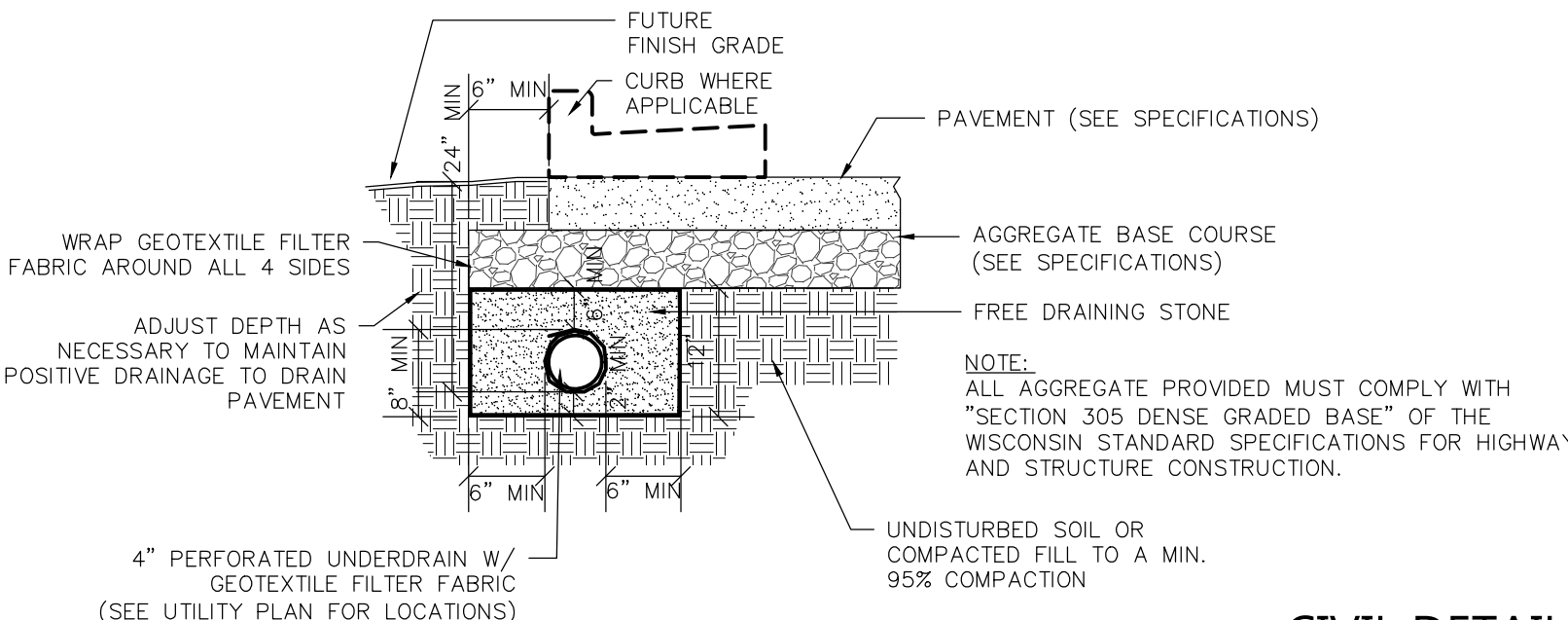
HANDICAP SIGNAGE WITH CONCRETE BASE DETAIL
NO SCALE



5 BIKE RACK DETAIL-WAVE TYPE
NO SCALE



ASPHALT PAVEMENT SECTION REPAIR DETAIL (LINCOLN WAY E)
NO SCALE



PAVING WITH UNDERDRAIN DETAIL
NO SCALE

CIVIL DETAILS



Always a Better Plan

100 Camelot Drive
Fond du Lac, WI 54935
920-926-9800
excelengineer.com

PROJECT INFORMATION

PROPOSED DEVELOPMENT FOR:
STARBUCKS & PANDA EXPRESS
LINCOLN WAY E • MASSILLON, OH 44646

PROFESSIONAL SEAL

PRELIMINARY DATES

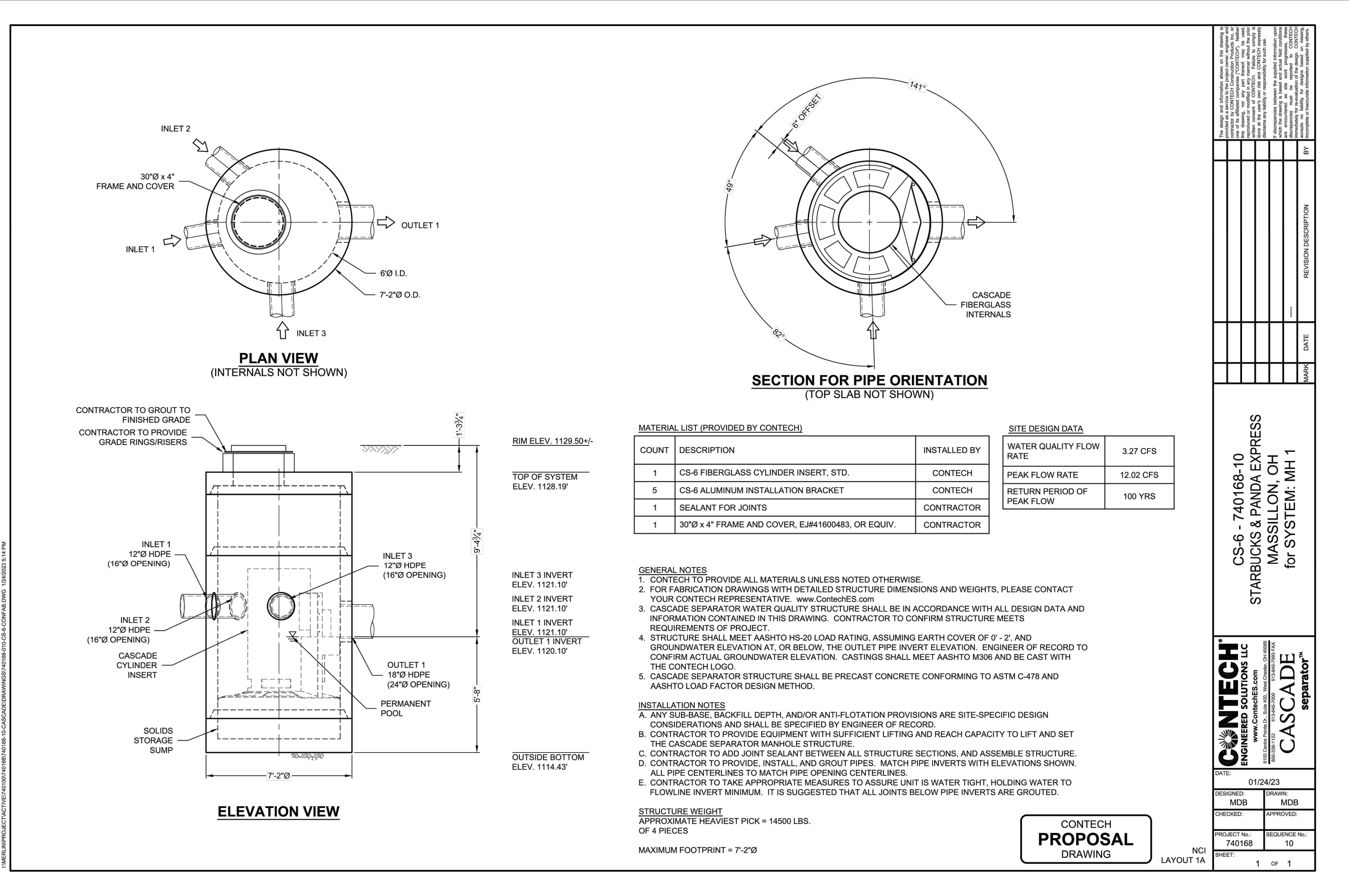
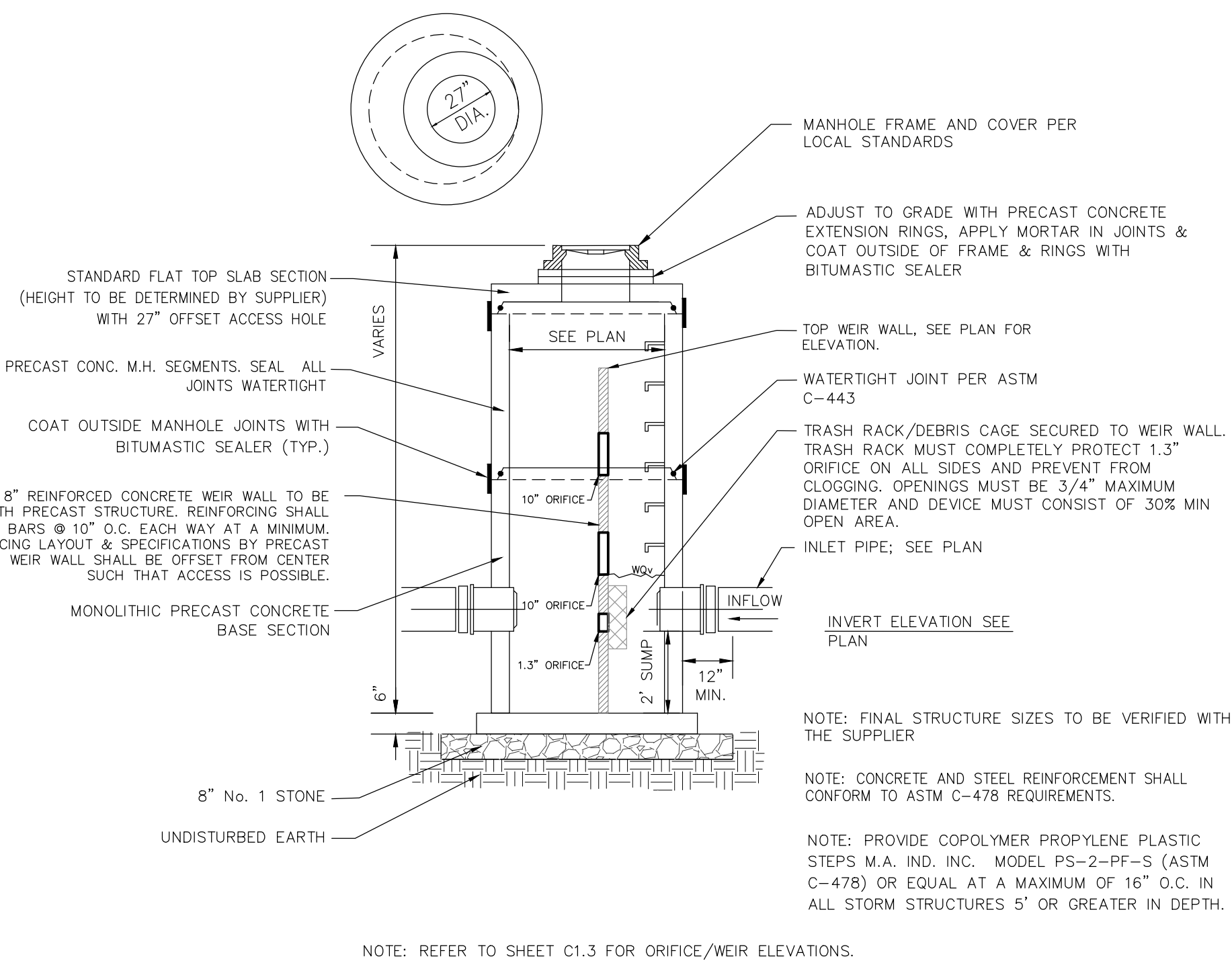
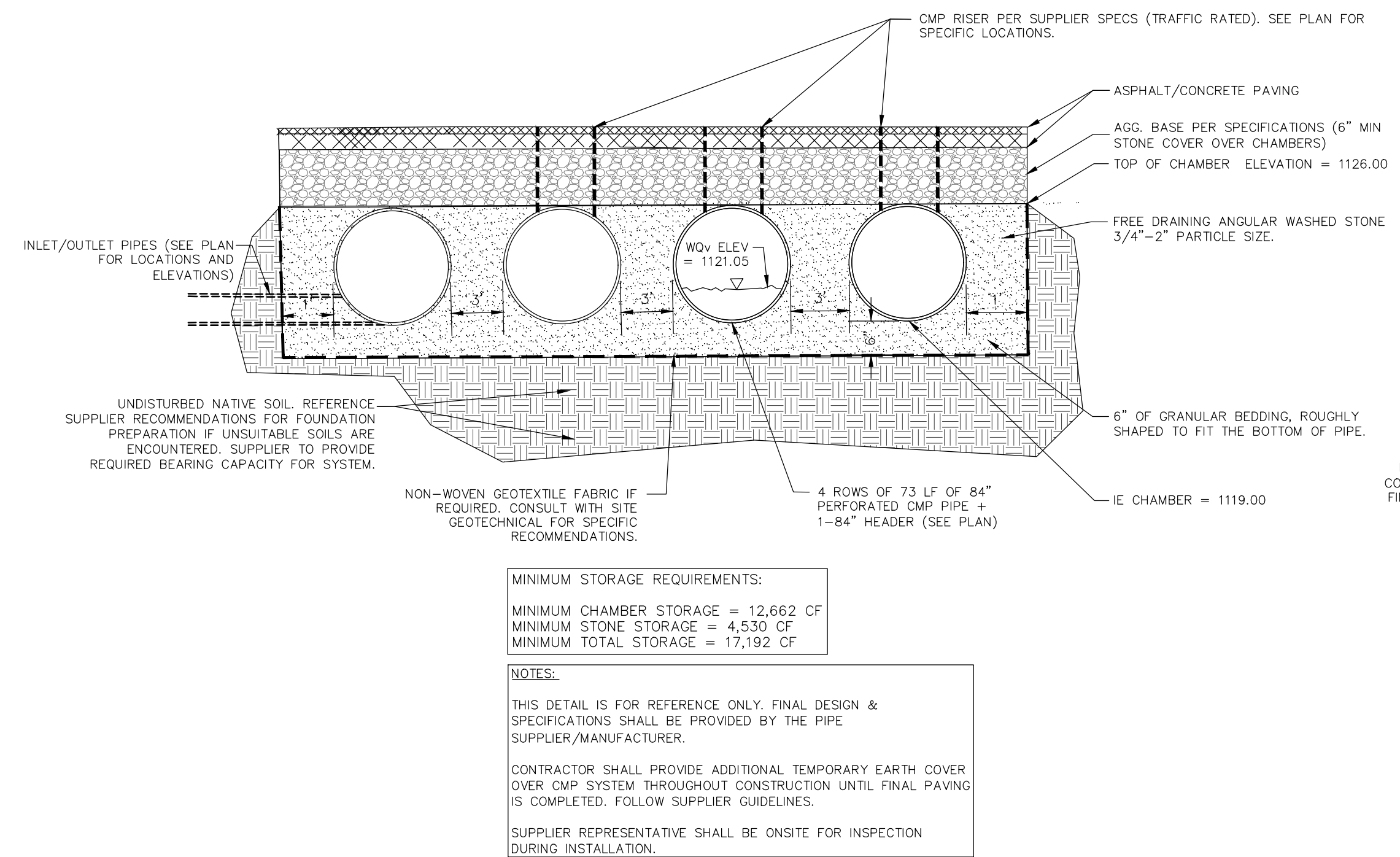
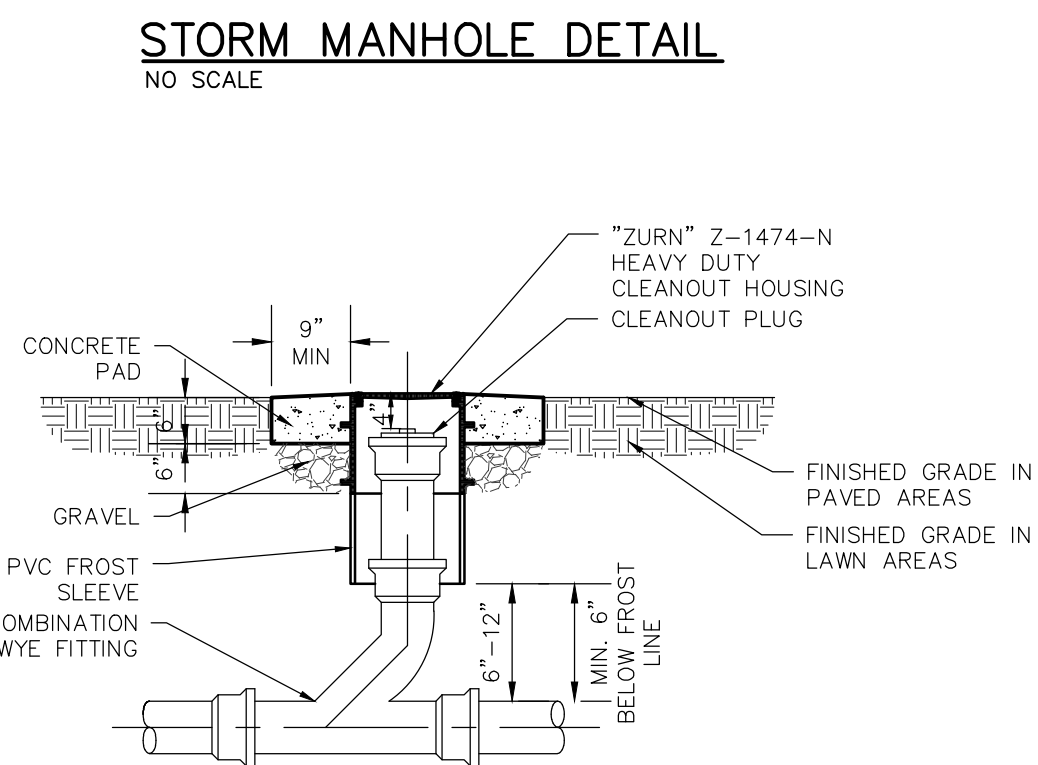
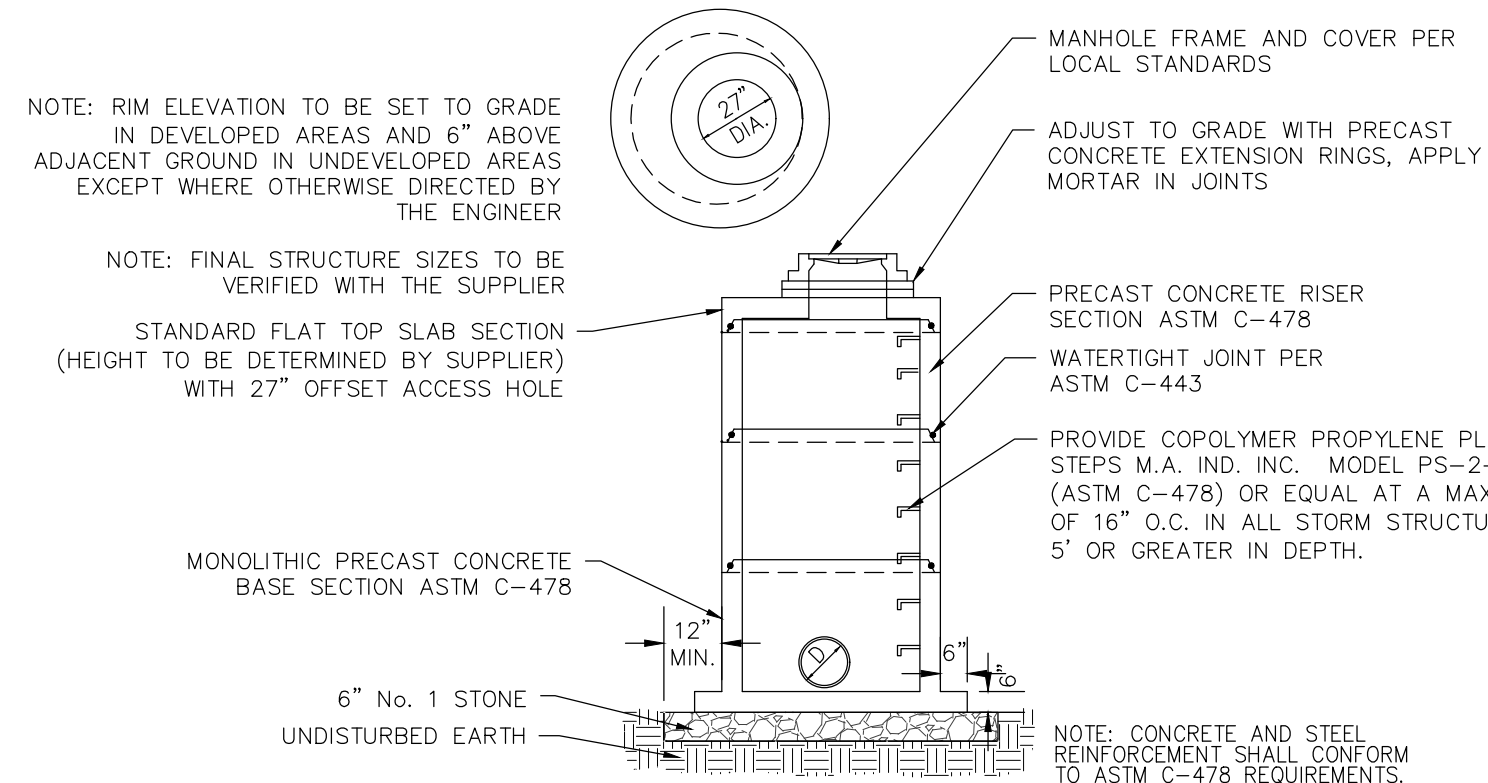
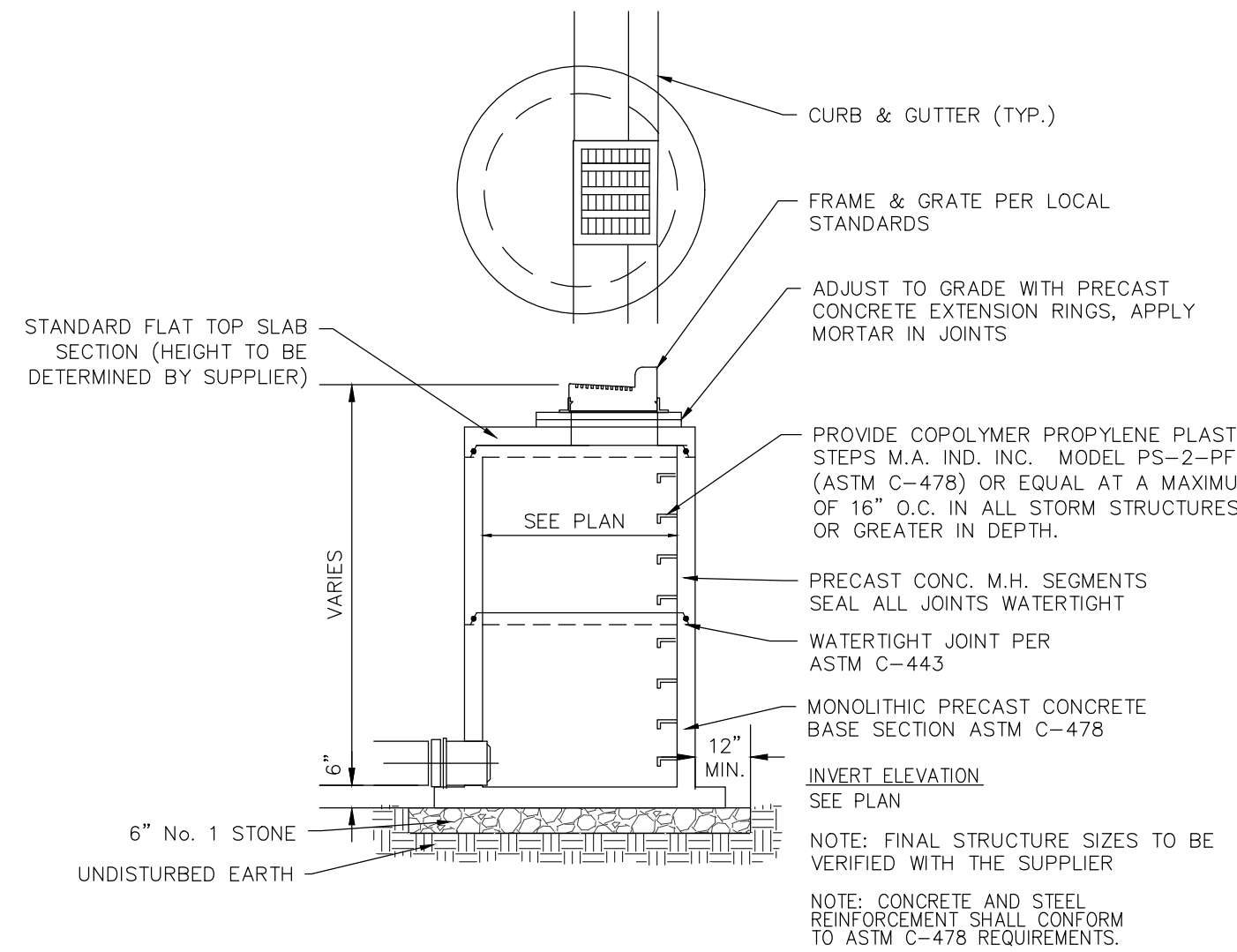
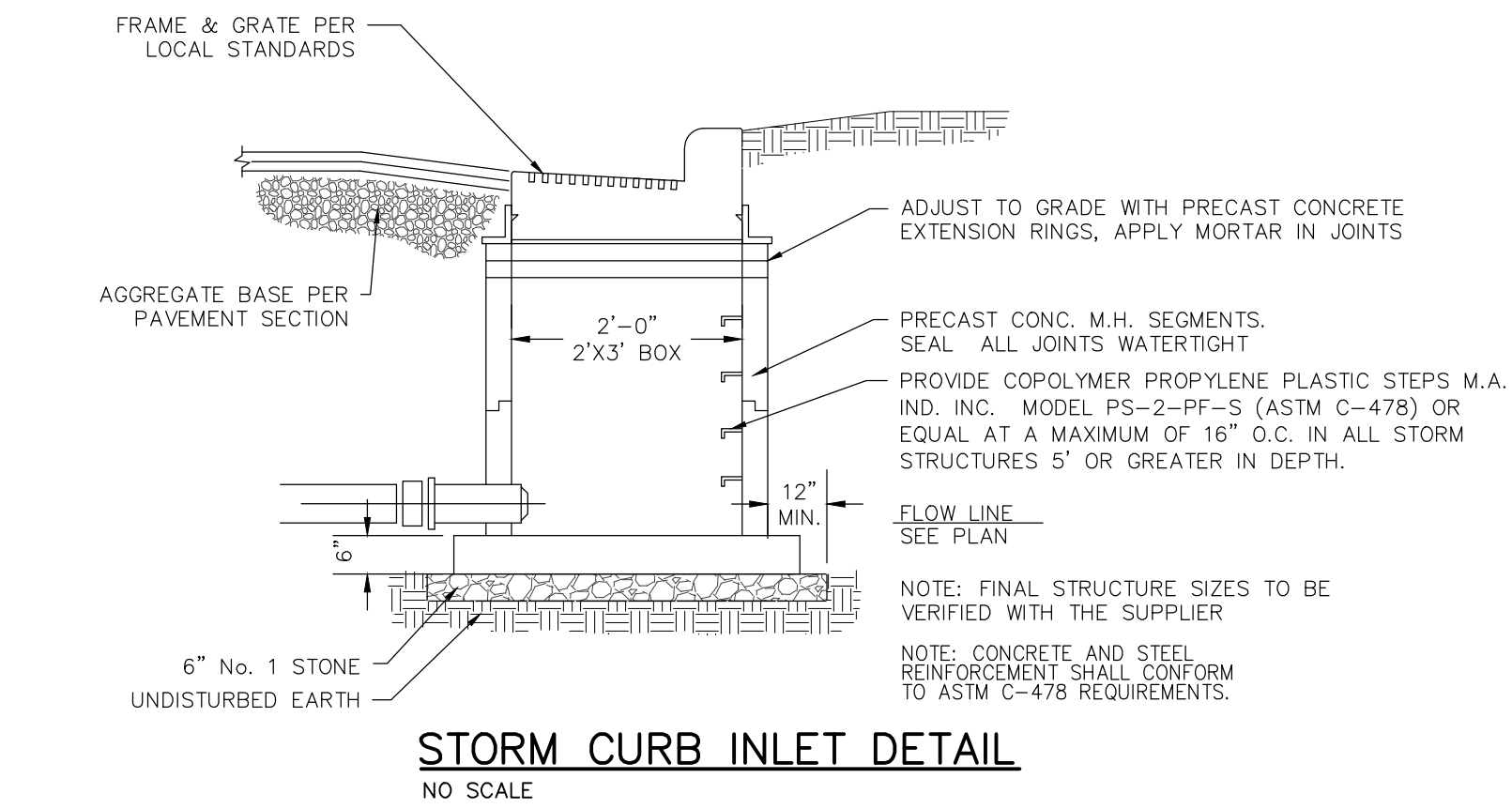
JAN. 20, 2023
MAR. 24, 2023

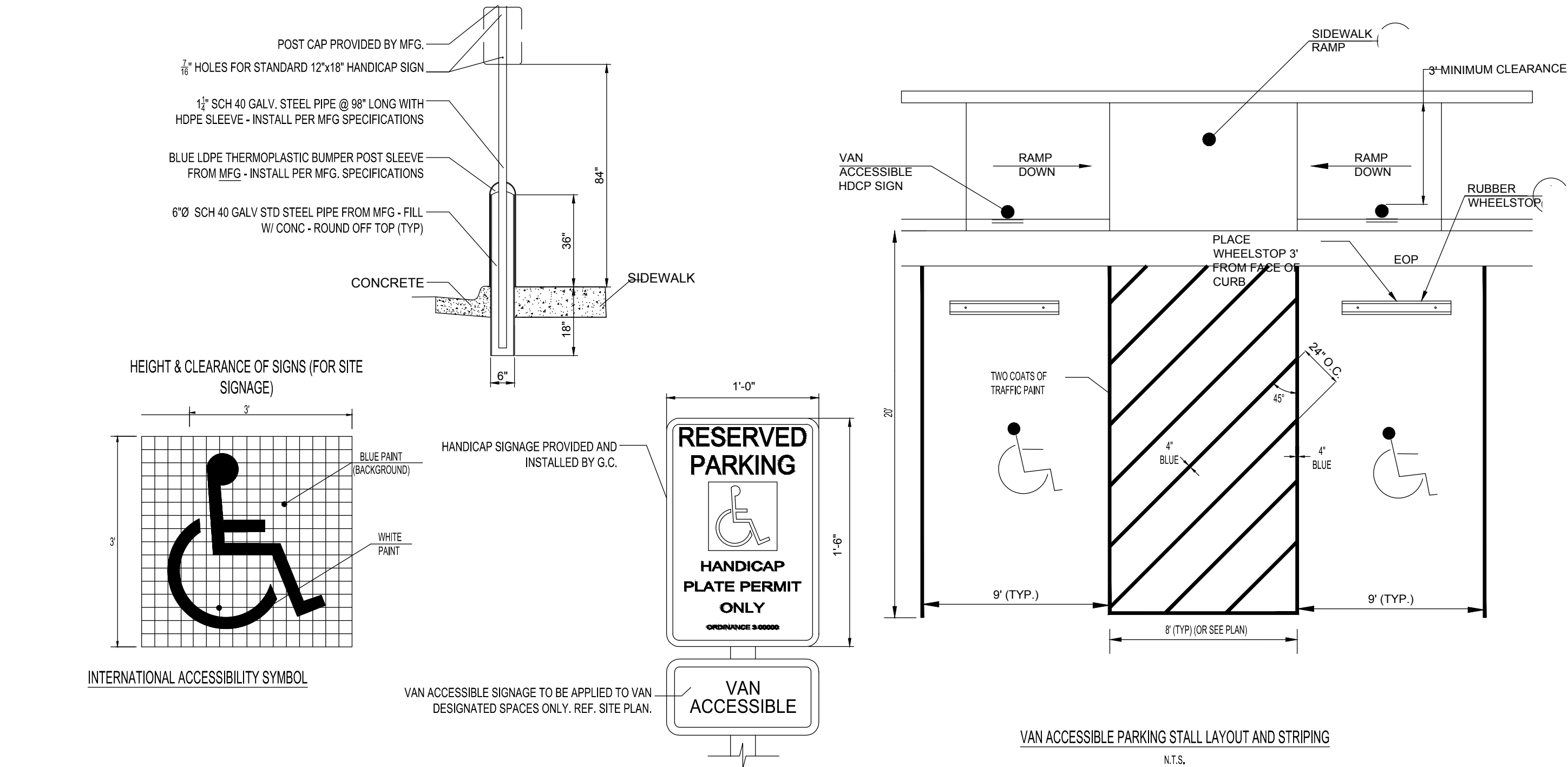
JOB NUMBER

2178020

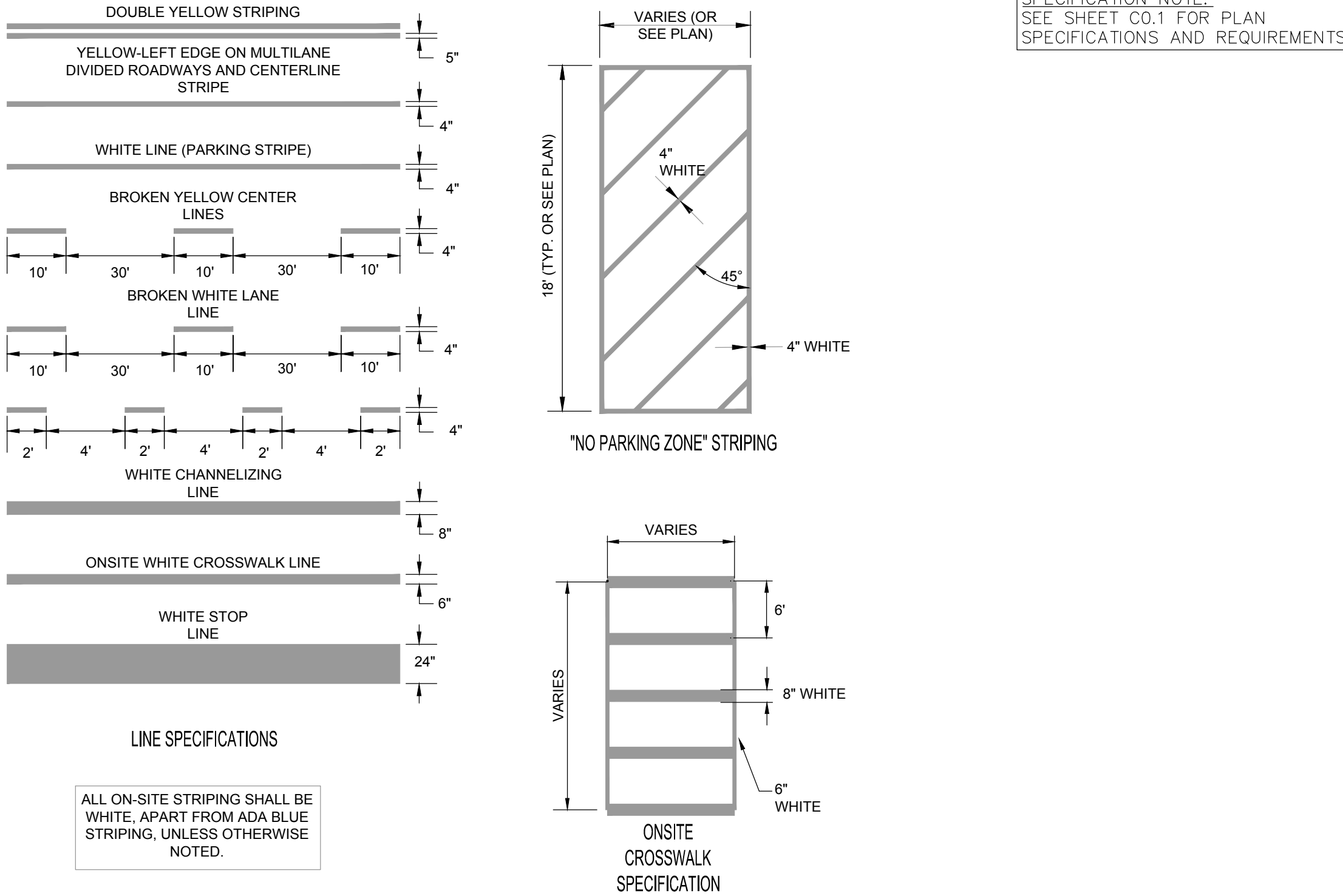
SHEET NUMBER

C2.0





TYPICAL PANDA EXPRESS ACCESSIBLE AREA DETAIL
(REFERENCE PLANS FOR SITE SPECIFIC INFORMATION)
NO SCALE



TYPICAL PANDA EXPRESS PAVEMENT STRIPING AND MARKING
NO SCALE

PANDA EXPRESS GENERAL CONSTRUCTION NOTES:

CONTRACTOR SHALL COORDINATE FINAL LOCATION WITH SIGN COMPANY AND PANDA EXPRESS PM FOR FINAL LOCATION OF DRIVE THRU ELEMENTS (MENU BOARD, ORDER CANOPY, CLEARANCE BAR, AND DIRECTIONAL SIGNAGE) PRIOR TO INSTALLATION. CONTRACTOR SHALL ENSURE THAT PROPOSED UTILITIES, INCLUDING SITE LIGHTING CONDUIT ARE NOT INSTALLED SO THAT THEY WOULD CONFLICT WITH THE PLACEMENT OF THE DRIVE THRU ELEMENTS AND FOOTINGS.

CONTRACTOR SHALL PROVIDE CONCRETE PAVING BETWEEN FACE OF BUILDING AND BACK OF CURB ALONG DRIVE-THRU LANE AND ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING.

CONTRACTOR SHALL COORDINATE AND ADJUST LOCATION OF LOOP DETECTORS TO AVOID UTILITY CONFLICTS PRIOR TO CONSTRUCTION.

CONTRACTOR SHALL INSTALL GENERAL UTILITY CONDUITS TO PLANTERS AROUND BUILDING AND PATIO. SEE ARCHITECTURAL/MEP PLANS FOR CONTINUATION.

CONTRACTOR SHALL ENSURE 100% COVERAGE OF ALL LANDSCAPED AREAS WITHIN LIMITS OF WORK, INCLUDING POTENTIAL OFFSITE AREAS. COVERAGE SHALL INCLUDE BOTH LANDSCAPING AND IRRIGATION.

CONTRACTOR SHALL PROTECT ALL ITEMS OUTSIDE LIMITS OF CONSTRUCTION UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS OR SPECIFICATIONS.

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES (LOCATIONS AND ELEVATIONS) PRIOR TO STARTING CONSTRUCTION AND ALERT ENGINEER TO ANY DISCREPANCIES IMMEDIATELY.

THE GEOTECHNICAL INVESTIGATION AND ANY SUBSEQUENT ADDENDUMS IS CONSIDERED PART OF THE CONTRACT DOCUMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE REPORT'S RECOMMENDATIONS AND FINDINGS WITH THE OWNER, ENGINEER AND ARCHITECT PRIOR TO CONSTRUCTION. IMPLEMENTATION OF THE REPORT'S RECOMMENDATIONS MAY REQUIRE THE CONTRACTOR TO PERFORM ADDITIONAL WORK NOT SHOWN ON THE CIVIL PLANS INCLUDING BUT NOT LIMITED TO EXCAVATION, REMEDIATION, DOWATERING, COMPACTION ETC.

THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL LOCAL, STATE, AND FEDERAL CERTIFICATION AND LICENSING REQUIREMENTS FOR CONSTRUCTION, INCLUDING BUT NOT LIMITED TO: LAND DISTURBANCE PERMITS, BUILDING PERMITS, DEMOLITION PERMITS, NPDES PERMITS, DEWATERING PERMITS, ETC.

PANDA EXPRESS IRRIGATION SPECIFICATIONS

GENERAL

- GENERAL
 - AN AUTOMATIC IRRIGATION SYSTEM SHALL BE INSTALLED AND OPERATIONAL BY THE TIME OF FINAL INSPECTION. THE ENTIRE IRRIGATION SYSTEM SHALL BE INSTALLED BY A LICENSED AND QUALIFIED IRRIGATION CONTRACTOR.
 - THE IRRIGATION SYSTEM WILL OPERATE ON POTABLE WATER, AND THE SYSTEM SHALL HAVE A REDUCED-PRESSURE BACKFLOW PREVENTION DEVICE INSTALLED TO PREVENT CONTAMINATION OF THE POTABLE SOURCE. THE BACKFLOW DEVICE SHALL BE ENCLOSED IN A VANDAL-RESISTANT ENCLOSURE.
 - ALL NON-TURF PLANTED AREAS SHALL BE DRIP IRRIGATED. SODDED AND SEEDED AREAS SHALL BE IRRIGATED WITH SPRAY OR ROTOR HEADS AT 100% HEAD-TO-HEAD COVERAGE.
 - ALL PLANTS SHARING SIMILAR HYDROZONE CHARACTERISTICS (WATER NEEDS, SUN EXPOSURE, ETC.) SHALL BE PLACED ON A VALVE DEDICATED TO PROVIDE THE NECESSARY WATER REQUIREMENTS SPECIFIC TO THAT HYDROZONE. THE PLANTING PLAN SHALL BE THE BASIS OF IRRIGATION DESIGN, AND THE IRRIGATION CONTRACTOR SHALL OBTAIN AND THOROUGHLY REVIEW A COPY OF THE PLANTING PLAN PRIOR TO SUBMITTING A BID FOR IRRIGATION DESIGN/BUILD SERVICES.
 - THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED, TO THE MAXIMUM EXTENT POSSIBLE, TO CONSERVE WATER BY USING THE FOLLOWING DEVICES AND SYSTEMS: MATCHED PRECIPITATION RATE TECHNOLOGY ON ROTOR AND SPRAY HEADS, RAIN SENSORS, AND MULTI-PROGRAM COMPUTERIZED IRRIGATION CONTROLLERS FEATURING SENSORY INPUT CAPABILITIES.
 - IN THE DESIGN OF SPRAY AND ROTOR AREAS SHALL ACHIEVE A DISTRIBUTION UNIFORMITY OF 0.7 OR BETTER.
- SCOPE OF WORK
 - WORK COVERED BY THESE SECTIONS INCLUDES THE FURNISHING AND PAYMENT OF ALL MATERIALS, LABOR, SERVICES, EQUIPMENT, LICENSES, TAXES, FEES, AND ANY OTHER ITEMS THAT ARE NECESSARY FOR THE EXECUTION, INSTALLATION AND COMPLETION OF ALL WORK, SPECIFIED HEREIN AND/OR SHOWN ON THE IRRIGATION PLANS, NOTES, AND DETAILS.
 - ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK, INCLUDING ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN SUPPLY, TRANSPORTATION AND INSTALLATION OF MATERIALS. IN CASE OF CONFLICT BETWEEN THESE PLANS AND LOCAL AND/OR STATE CODES, CODES SHALL PREVAIL.
 - THE INTENT OF THE IRRIGATION SYSTEM IS TO PROVIDE 100% COVERAGE OF ALL LANDSCAPE AREAS. THE IRRIGATION PLAN IS GENERALLY DIAGRAMMATIC; COORDINATE IRRIGATION INSTALLATION WITH UTILITY INSTALLATIONS. ACTUAL LOCATION OF CONTROLLER, BACKFLOW DEVICE, PIPING, VALVES, SPRAY HEADS, DRIP IRRIGATION, AND RELATED EQUIPMENT MAY NEED TO BE ADJUSTED BASED ON ACTUAL SITE CONDITIONS.
- QUALIFICATIONS OF IRRIGATION CONTRACTOR
 - ALL WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY A SINGLE IRRIGATION CONTRACTING FIRM SPECIALIZING IN IRRIGATION SYSTEMS. SEE THE IRRIGATION PLAN FOR SPECIFIC EQUIPMENT AND SYSTEM LAYOUT.
 - THE IRRIGATION CONTRACTOR MUST HAVE ON ITS STAFF A TEXAS LICENSED IRRIGATOR, AS REGULATED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY. A LICENSED IRRIGATOR OR LICENSED IRRIGATION INSTALLER SHALL BE PRESENT AT THE PROJECT SITE AT ALL TIMES AS WORK IS IN PROGRESS. THE OWNER MAY DEMAND THAT WORK STOP UNTIL THE CONTRACTOR PROVIDES FOR A LICENSED IRRIGATOR OR LICENSED IRRIGATION INSTALLER TO BE PRESENT AT THE PROJECT SITE AND SUPERVISING ALL IRRIGATION WORK.
 - A LIST OF SUCCESSFULLY COMPLETED PROJECTS OF THIS TYPE, SIZE AND NATURE MAY BE REQUESTED BY THE OWNER FOR FURTHER QUALIFICATION MEASURES.

PRODUCTS

- ALL MATERIALS SHALL BE NEW AND WITHOUT FLAWS OR DEFECTS OF ANY TYPE AND SHALL BE THE BEST OF THEIR CLASS AND KIND. ALL MATERIALS SHALL HAVE A MINIMUM GUARANTEE OF ONE YEAR AGAINST MATERIAL DEFECTS OR DEFECTIVE WORKMANSHIP. ALL MATERIALS SHALL BE OF THE FOLLOWING BRANDS: RADBURD, TORO, NETAFAM. OTHER MANUFACTURERS MAY BE PROPOSED TO THE OWNER, AS MAY BE APPROPRIATE.
 - THE BACKFLOW PREVENTION DEVICE SHALL BE REDUCED-PRESSURE TYPE, SIZED TO MEET IRRIGATION DEMAND AND MINIMIZE PRESSURE LOSSES. INSTALL BACKFLOW PREVENTION UNITS IN ACCORDANCE WITH IRRIGATION CONSTRUCTION DETAILS AND ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
 - PIPING
 - PRESSURE SUPPLY LINES, DOWNSTREAM OF THE POINT-OF-CONNECTION:
 - SCHEDULE 40 PVC FOR ALL PIPE 1 1/2" OR LESS
 - CLASS 315 PVC FOR ALL PIPE 2" TO 2 1/2"
 - CLASS 200 PVC, GASKETED, FOR ALL PIPE 3" AND LARGER
 - NON-PRESSURE LATERAL LINES (DOWNSTREAM FROM VALVES): CLASS 200 PVC
 - SLEEVES: SCHEDULE 40 PVC
 - FITTINGS: SCH. 40 PVC, EXCEPT AS NOTED OTHERWISE
 - VALVES AND DRIP VALVE ASSEMBLIES: EACH VALVE SHALL BEAR A PRE-MANUFACTURED, NUMBERED WATERPROOF TAG BEARING A NUMBER CORRESPONDING TO ITS VALVE SEQUENCE OF OPERATION ON THE CONTROLLER.
 - VALVES FOR SPRAY AND ROTOR CIRCUITS SHALL BE COMMERCIAL-GRADE, GLOBE-TYPE, NORMALLY CLOSED.
 - VALVES SHALL HAVE A ONE-PIECE SOLENOID DESIGN AND FLOW CONTROL HANDLE.
 - QUICK COUPLERS: 3/4" TWO-PIECE BODY, WITH LATCHING COVER.
 - BACK VALVES:
 - BRASS BALL VALVES SHALL BE INSTALLED WHEREVER PRESSURIZED MAINLINE CROSSES VEHICULAR AREAS, AND INSTALLED ON THE UPSTREAM SIDE OF THE MAINLINE.
 - PVC BALL VALVES SHALL BE INSTALLED AT THE ENDS OF DRIP RUNS, FOR FLUSHING DRIP LINES.
 - ALL BALL VALVES SHALL BE FULL-PORT, LINE SIZE, AND INSTALLED IN THEIR OWN 9" ROUND VALVE BOXES.
 - VALVE BOXES: ALL VALVE BOXES SHALL BE LOCKING BOLT-DOWN TYPE, FURNISHED WITH LIDS AND BOLTS. BOXES SHALL BE OF A SIZE TO CONTAIN THE ENTIRE VALVE AND/OR VALVE ASSEMBLY. THE VALVE BOX LID SHALL HAVE THE VALVE STATION NUMBER HEAT-BRANDED INTO THE LID WITH 2" HIGH LETTERS. ONLY ONE VALVE SHALL BE INSTALLED PER VALVE BOX.
 - FIXED SPRAY HEADS AND ROTORS: PLASTIC BODY POP-UP, WITH A REMOVABLE PLASTIC SPRAY NOZZLE.
- INTEGRAL EMITTER DRIP TUBING: TUBING WITH INTEGRAL EMITTERS WELDED TO THE INSIDE WALL OF THE TUBING AS AN INTEGRAL PART OF THE TUBING ASSEMBLY.
 - IN GENERAL, THE FOLLOWING EMITTER FLOW RATES AND SPACING SHALL BE USED:
 - CLAY AND CLAY LOAM SOILS: 0.6 GPH, EMITTERS SPACED AT 12" O.C., PARALLEL TUBING RUNS SPACED AT 18" O.C.
 - MEDIUM-TEXTURE LOAM SOILS: 0.9 GPH, EMITTERS SPACED AT 12" O.C., PARALLEL TUBING RUNS SPACED AT 18" O.C.
 - SANDY AND SANDY LOAM SOILS: 0.9 GPH, EMITTERS SPACED AT 12" O.C., PARALLEL TUBING RUNS SPACED AT 12" O.C.
 - CONTRACTOR SHALL GUARANTEE A MINIMUM OF TWO EMITTERS PER #1 OR #5 CONTAINER PLANT.

- AUTOMATIC CONTROLLER: COMMERCIAL-GRADE MODULAR CONTROLLER, SIZE AS APPROPRIATE FOR THE NUMBER OF PERMANENT VALVES, PLUS ADDITIONAL MODULES AS NEEDED FOR ANY TEMPORARY IRRIGATED AREAS (SUCH AS NATIVE SEED). PROVIDE LINE VOLTAGE DISCONNECT SWITCH WITH GROUND FAULT PROTECTION.
- 24 VOLT VALVE WIRE SHALL BE A MINIMUM OF #14 GAUGE, U.F. APPROVED FOR DIRECT BURIAL, SINGLE CONDUCTOR IRRIGATION WIRE. EACH CONTROLLER SHALL HAVE A DIFFERENT COLOR STATION AND COMMON WIRE.
 - STATION WIRE - RED
 - COMMON WIRE - WHITE
 - EXTRA COMMON WIRES - BLUE
- WIRE SPLICES SHALL BE ENCASED IN A WATERPROOF COMPOUND OR GEL. ALL FIELD SPLICES SHALL BE LOCATED IN A 6 INCH ROUND VALVE BOX.
- RAIN SENSOR: WIRELESS RAIN/FREEZE SENSOR.

METHODS

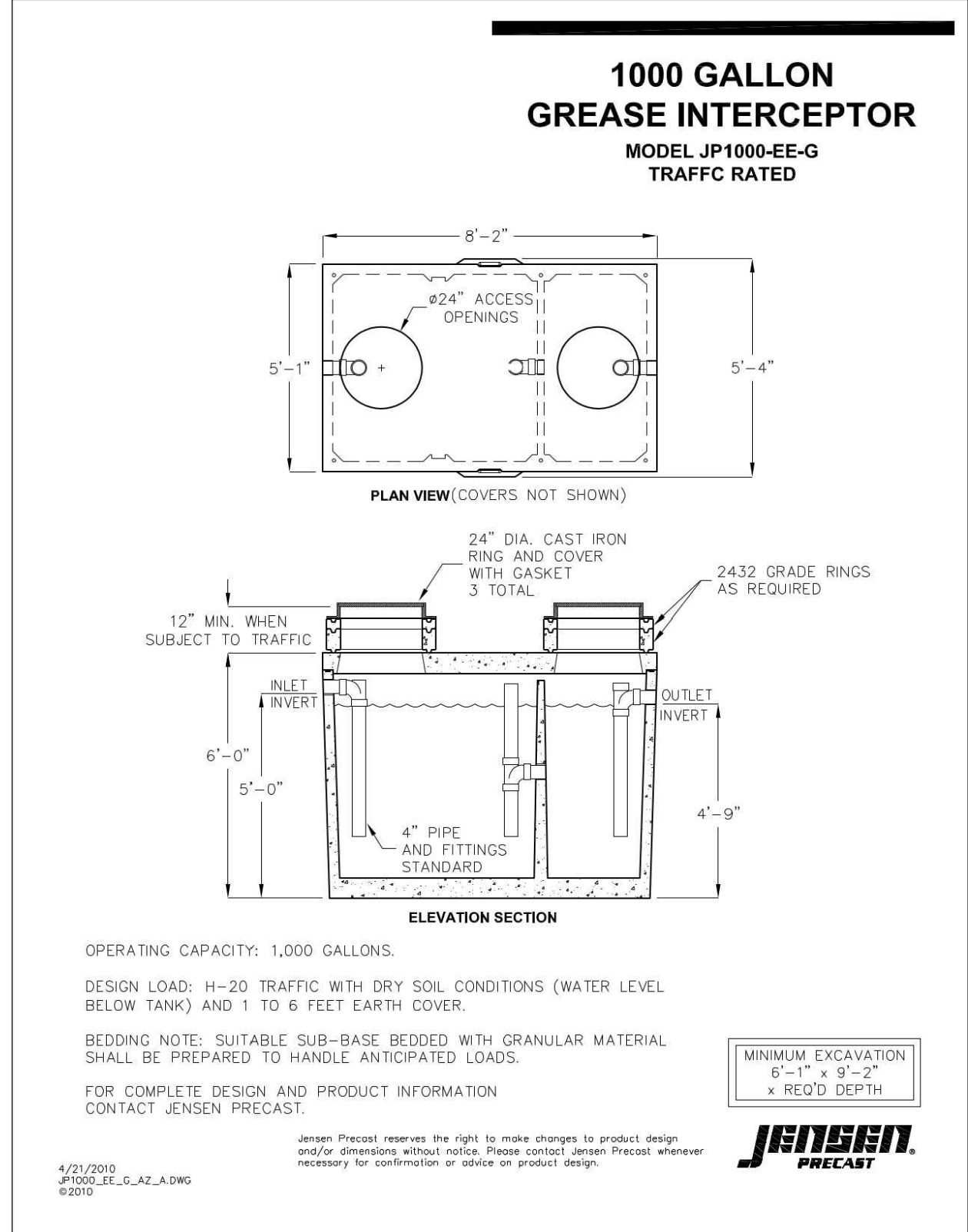
- THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL ABOVE-GRADE IRRIGATION EQUIPMENT WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION, OR IRRIGATION CONTRACTOR MAY BE REQUIRED TO MOVE SUCH ITEMS AT HIS OWN COST. ENSURE FIELD COORDINATION IS MADE EARLY ON IN THE CONSTRUCTION PHASE SO PLACEMENT LOCATION IS CORRECT.
- THE IRRIGATION CONTRACTOR SHALL MEET WITH THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK, AND SHALL OBTAIN ALL ENGINEERING, LANDSCAPE, AND OTHER APPLICABLE PLANS & DOCUMENTS. THE CONTRACTOR SHALL THOROUGHLY REVIEW THE PLANS AND REPORT ANY CONFLICTS OR DISCREPANCIES TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.
- THE IRRIGATION CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY PORTION OF THE IRRIGATION SYSTEM WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS, GRADES OR DIMENSIONS EXIST. SUCH OBSTRUCTIONS OR DIFFERENCES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER. IN THE EVENT THAT THIS NOTIFICATION IS NOT PERFORMED, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS AND NECESSARY CORRECTIONS.
- USE UTILITY PLANS FOR IRRIGATION POINTS OF CONNECTION (TAP) AND DOMESTIC WATER SUPPLY.
- THE IRRIGATION CONTRACTOR SHALL PAY ANY AND ALL FEES AND PERMITS ASSOCIATED WITH THE INSTALLATION OF THE IRRIGATION SYSTEM.
- AT LEAST SEVEN DAYS BEFORE BEGINNING WORK, CONFIRM THE STATIC WATER PRESSURE IS AT LEAST 55 PSI AND LESS THAN 70 PSI. IF STATIC WATER PRESSURE IS OUTSIDE OF THE STATED RANGE, DO NOT PROCEED WITHOUT FIRST NOTIFYING THE OWNER IN WRITING, AND OBTAINING SUBSEQUENT DIRECTION FOR CORRECTIVE MEASURES. SHOULD THE IRRIGATION CONTRACTOR CHOOSE TO BEGIN THE INSTALLATION WITHOUT SUCH NOTIFICATION, THE IRRIGATION CONTRACTOR WILL ASSUME THE RESPONSIBILITY FOR ALL COSTS INCURRED TO ENSURE THE SYSTEM IS WORKING PROPERLY. NO CHANGE ORDERS WILL BE AUTHORIZED IN SUCH CIRCUMSTANCES.
 - SHOULD STATIC WATER PRESSURE BE BELOW 55 PSI, A PUMP MAY BE REQUIRED FOR PROPER OPERATION OF THE IRRIGATION SYSTEM. THE IRRIGATION CONTRACTOR SHALL DISCUSS THE NEED FOR A PUMP WITH THE OWNER, AND PROPOSE OPTIONS FOR THE PROPER FUNCTIONING OF THE IRRIGATION SYSTEM.
- THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES (WATER, SEWER, ELECTRICAL, TELEPHONE, GAS, CABLE, TELEVISION, ETC.) PRIOR TO THE START OF ANY WORK. THE CONTRACTOR SHALL BE FAMILIAR WITH ALL GRADE DIFFERENCES, LOCATIONS OF WALLS, STRUCTURES AND UTILITIES.
- COORDINATE WITH THE OWNER THE PROPOSED LOCATIONS OF THE AUTOMATIC CONTROLLER AND ANY REQUIRED SLEEVES THROUGH THE BUILDING FOR CONTROL WIRES.
- TRENCHING NEAR EXISTING TREES.
 - CONTRACTOR SHALL NOT DISTURB ROOTS 1 1/2" AND LARGER IN DIAMETER WITHIN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES, AND SHALL EXERCISE ALL POSSIBLE CARE AND PRECAUTIONS TO AVOID INJURY TO TREE ROOTS, TRUNKS, AND BRANCHES. THE CRZ IS DEFINED AS A CIRCULAR AREA EXTENDING OUTWARD FROM THE TREE TRUNK, WITH A RADIUS EQUAL TO 1" FOR EVERY 1" OF TRUNK DIAMETER-AT-BREAST-HEIGHT (4.5' ABOVE THE AVERAGE GRADE AT THE TRUNK).
 - ALL EXCAVATION WITHIN THE CRZ SHALL BE PERFORMED USING HAND TOOLS. NO MACHINE EXCAVATION OR TRENCHING OF ANY KIND SHALL BE ALLOWED WITHIN THE CRZ.
 - ALTER ALIGNMENT OF PIPE TO AVOID TREE ROOTS 1 1/2" AND LARGER IN DIAMETER, WHERE TREE ROOTS 1 1/2" AND LARGER IN DIAMETER ARE ENCOUNTERED IN THE FIELD, TUNNEL UNDER SUCH ROOTS. WRAP EXPOSED ROOTS WITH SEVERAL LAYERS OF BURLAP AND KEEP MOIST. CLOSE ALL TRENCHES WITHIN THE CANOPY DRIP LINES WITHIN 24 HOURS.
 - ALL SEVERED ROOTS SHALL BE HAND PRUNED WITH SHARP TOOLS AND ALLOWED TO AIR-DRY. DO NOT USE ANY SORT OF SEALERS OR WOUND PAINTS.

BACKFILL

- ALL BACKFILL MATERIAL SHALL BE SUBJECT TO APPROVAL BY THE OWNER. BACKFILL MATERIAL SHALL BE FREE FROM RUBBISH, ROCK LARGER THAN 1", LARGE STONES, BRUSH, SOIL, FROZEN MATERIAL OR OTHER UNSUITABLE SUBSTANCES THAT MAY DAMAGE PIPE DURING THE BACKFILLING OPERATIONS. SEPARATE OUT ROCKS LARGER THAN 1 INCH IN ANY DIRECTION FROM EXCAVATED MATERIAL, AND REMOVE FROM AREAS TO RECEIVE LANDSCAPING. COVER FOR BOTH TOP AND SIDES OF PIPE SHALL BE A MINIMUM OF 2 INCHES OF ROCK-FREE SAND, OR OTHER APPROVED MATERIAL, CONSISTING OF EARTH, LOAM, SANDY CLAY, SAND OR OTHER APPROVED MATERIALS FREE OF DEBRIS.
- IN THE EVENT THAT THE MATERIAL FROM THE EXCAVATION OR TRENCHING IS FOUND TO BE UNSUITABLE FOR USE IN BACKFILL, IT SHALL BE REMOVED FROM THE SITE AND PROPERLY AND LEGALLY DISPOSED OF BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL THEN PURCHASE AND FURNISH SUITABLE BACKFILL MATERIAL, CONSISTING OF EARTH, LOAM, SANDY CLAY, SAND OR OTHER APPROVED MATERIALS FREE OF DEBRIS.
- BACKFLOW PREVENTER INSTALLATION: CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING WATER SOURCES AT LOCATIONS SHOWN ON PLANS AND AS APPROVED BY THE OWNER, AND SHALL MAKE ANY MINOR CHANGES IN LOCATION AS MAY BE NECESSARY DUE TO ACTUAL SITE CONDITIONS. BACKFLOW PREVENTER HEIGHT SHALL BE AS PER LOCAL CODES AND MANUFACTURER'S INSTRUCTIONS. INSTALL A BRASS BALL VALVE IMMEDIATELY UPSTREAM OF THE PREVENTER TO SERVE AS AN ISOLATION VALVE. TO EVERY EXTENT POSSIBLE, INSTALL BACKFLOW PREVENTER IN A LOCATION SCREENED FROM PUBLIC VIEW (SUCH AS BEHIND A SHRUB ROW).
- PIPING
 - PIPE SIZE SHALL CONFORM TO THE STANDARD OF CARE FOR PIPE SIZES. THE IRRIGATION CONTRACTOR SHALL ENSURE THAT THE FLOW THROUGH ANY PIPE DOES NOT EXCEED 5 FPS.
 - MAINLINE PIPE AND WIRES SHALL BE INSTALLED WITH A MINIMUM COVER OF 18 INCHES. LATERAL PIPE SHALL BE INSTALLED WITH A MINIMUM COVER OF 12 INCHES.
 - ASSEMBLE ALL THREADED FITTINGS WITH TEFLON TAPE, WHICH SHALL BE APPLIED TO MALE THREADS ONLY.
 - ALL SOLVENT-WELD CONNECTIONS SHALL BE MADE WITH APPROVED SOLVENT-WELD PRIMER AND GLUE. PIPE SHALL BE INSTALLED WITH A MINIMUM OF 4" HORIZONTAL CLEARANCE FROM ANY OTHER PIPE AND 2" VERTICAL CLEARANCE FROM ANY PIPES THAT CROSS OVER OR UNDER.

- VALVES
 - VALVES SHALL BE INSTALLED PER MANUFACTURER'S DIRECTIONS.
 - VALVE BOXES SHALL BE INSTALLED FLUSH WITH THE GRADE, WITH CLEAN PEA GRAVEL LOCATED BELOW THE VALVE. LOCATE BOXES WITHIN 12 TO 24" OF SIDEWALKS OR LANDSCAPE EDGES, WITH TOPS OF BOXES 1" ABOVE FINISH GRADE IN TURF, AND 3" ABOVE FINISH GRADE IN SHRUB AREAS (TO AVOID BEING COVERED BY MULCH).
 - EACH VALVE BOX COVER SHALL BE HEAT-BRANDED WITH THE CONTROLLER STATION NUMBER.
- DRIP IRRIGATION EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S DIRECTIONS.
 - DRIP LINES IN AREAS WITH ORGANIC MULCH, SUCH AS SHREDDED WOOD, SHALL BE BURIED, NO MORE THAN 2" BELOW FINISH GRADE.
 - DRIP LINES IN AREAS WITH ROCK MULCH SHALL BE MOUNTED ON GRADE AND BENEATH LANDSCAPE FABRIC, AND SECURED IN PLACE WITH WIRE STAPLES AT A MAXIMUM OF 48" ON CENTER.
- SPRAY, ROTOR, AND BUBBLER HEADS.
 - ALL SPRAY AND ROTOR HEAD LOCATIONS SHALL BE STAKED, FLAGGED AND/OR OTHERWISE CLEARLY MARKED ON THE GROUND PRIOR TO INSTALLATION. SPRINKLER HEAD STAKING SHALL BE INSPECTED AND APPROVED BY THE OWNER'S REPRESENTATIVE BEFORE INSTALLATION.
 - ALL SPRAY HEADS SHALL BE CONNECTED WITH A 12 INCH MINIMUM LENGTH OF 1/2 INCH FLEX PVC. THE FLEX PVC SHALL BE SOLVENT WELDED TO SCHEDULE 40 PVC FITTINGS WITH SLOTTED-ON #755 SOLVENT AND #P-70 PRIMER. ALL ROTORS SHALL BE CONNECTED TO LATERAL LINES WITH PRE-MANUFACTURED SWING JOINTS.
 - ALL ROTOR, SPRAY AND BUBBLER HEADS SHALL BE SET PERPENDICULAR AND FLUSH TO FINISH GRADE AND WITH A CLEARANCE OF FOUR INCHES (MINIMUM) FROM THE EDGE OF ANY BUILDINGS, WALLS, BOULDERS, AND HARDSCAPE, UNLESS OTHERWISE SPECIFIED.
 - ALL ROTOR, SPRAY AND BUBBLER HEADS SHALL BE FLUSHED AND ADJUSTED FOR OPTIMUM COVERAGE WITH MINIMUM OVERSPRAY ON WALKS, STREETS, WALLS, ETC.
- AUTOMATIC CONTROLLER:
 - INSTALL THE CONTROLLER AT THE LOCATION INDICATED BY THE OWNER. INSTALL CONTROLLER WITH A BACKUP BATTERY AS RECOMMENDED BY THE MANUFACTURER.
 - THE IRRIGATION CONTRACTOR SHALL COORDINATE 120 V.A.C. ELECTRICAL POWER TO CONTROLLER AND DEDICATE ONE (1) 20-AMP BREAKER FOR EACH CONTROLLER. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO MAKE THE FINAL HOOK-UP FROM THE ELECTRICAL SOURCE TO THE CONTROLLER UNIT ONLY.
 - NO WIRE SPLICES SHALL BE ALLOWED EXCEPT AT VALVES AND CONTROLLER, WHERE SPLICES MAY BE NECESSARY DUE TO EXCESSIVELY LONG WIRE RUNS, THE CONTRACTOR SHALL MAKE ALL SPLICES IN 6" ROUND VALVE BOXES WITH 3M'S "DRY-DIRECT BURIAL SPLICE KIT". THE CONTRACTOR SHALL LABEL ALL WIRES WITH WATERPROOF TAGS AND MARKERS AT ALL SPLICES AND VALVE MANIFOLDS, AND SHALL LEAVE A 24" COIL OF EXCESS WIRE AT EACH CONNECTION.
 - PROVIDE #10 COMMON WIRE, DIRECT BURIAL, TO ALL REMOTE CONTROL VALVES.
 - CONNECT ALL DIRECT BURIAL WIRES TO VALVES USING 3M'S "DRY-DIRECT BURIAL SPLICE KIT" (UNLESS OTHERWISE SPECIFIED).
 - PROVIDE THREE ADDITIONAL IRRIGATION CONTROL WIRES ALONG EACH BRANCH OF MAINLINE FOR FUTURE EXPANSION. STUB ADDITIONAL CONTROL WIRES INTO BACK OF IRRIGATION CONTROLLERS.
 - THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL CONTROL WIRE SLEEVES AND PIPE SLEEVES UNDER PAVED AREAS PRIOR TO PAVING - SEE SLEEVING NOTES.
 - INSTALL THE RAIN SENSOR IN THE VICINITY OF THE CONTROLLER, AND COORDINATE LOCATION WITH THE OWNER. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO ENSURE THE RAIN SENSOR IS PLACED IN A LOCATION WHERE IT CAN RECEIVE ADEQUATE RAINFALL WITHOUT OBSTRUCTIONS. IF IT IS PLACED IN AN INADEQUATE LOCATION, THE IRRIGATION CONTRACTOR MAY BE REQUIRED TO RELOCATE IT AT NO ADDITIONAL COST TO THE OWNER.
 - ALL IRRIGATION EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
- QUALITY CONTROL
 - PERFORM COVERAGE TESTS AFTER IRRIGATION SYSTEM IS COMPLETED, BUT PRIOR TO ANY PLANTING AND PERFORM TESTING IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE.
 - TEST SYSTEM TO ASSURE THAT ALL PLANTING AREAS ARE WATERED COMPLETELY AND UNFORMLY.
 - MAKE ALL NECESSARY ADJUSTMENTS TO PROVIDE COMPLETE COVERAGE, INCLUDING REALIGNMENT OF HEADS AND REPLACEMENT OF NOZZLES.
- CLEAN UP
 - DURING IRRIGATION EXCAVATION AND INSTALLATION, KEEP ALL PAVEMENT CLEAN AND ALL WORK AREAS IN A NEAT, ORDERLY CONDITION.
 - DISPOSED LEGALLY OF ALL EXCAVATED MATERIALS OFF THE PROJECT SITE.
- INSPECTION AND ACCEPTANCE
 - UPON COMPLETION OF THE WORK, THE IRRIGATION CONTRACTOR SHALL PROVIDE THE SITE CLEAN, FREE OF DEBRIS AND TRASH, AND SUITABLE FOR USE AS INTENDED. THE IRRIGATION CONTRACTOR SHALL THEN REQUEST AN INSPECTION BY THE OWNER TO DETERMINE FINAL ACCEPTABILITY.
 - WHEN THE INSPECTED WORK DOES NOT COMPLY WITH THESE REQUIREMENTS, THE CONTRACTOR SHALL REPLACE AND/OR REPAIR THE REJECTED WORK TO THE OWNER'S SATISFACTION WITHIN 24 HOURS.
 - THE MAINTENANCE PERIOD WILL NOT COMMENCE UNTIL THE WORK HAS BEEN RE-INSPECTED BY THE OWNER AND FOUND TO BE ACCEPTABLE. AT THAT TIME, A WRITTEN NOTICE OF FINAL ACCEPTANCE WILL BE ISSUED BY THE OWNER, AND THE MAINTENANCE AND GUARANTEE PERIODS WILL COMMENCE.
 - CONTROLLER CHART: THE IRRIGATION CONTRACTOR SHALL PROVIDE A 11" X 17" COLOR-CODED LAMINATED COPY OF THE IRRIGATION LAYOUT AND PLACE IT IN THE CONTROLLER'S COVER. THE CONTROLLER CHART SHALL CLEARLY DELINEATE THE AREAS COVERED BY EACH VALVE, USING A SEPARATE COLOR FOR EACH ZONE.
- TURN THE FOLLOWING ITEMS IN TO THE OWNER UPON COMPLETION OF THE INSTALLATION:
 - QUICK COUPLER KEYS (2)
 - CONTROLLER MANUAL (1)
 - CONTROLLER KEYS (2)
 - A MINIMUM OF (2) COPIES OF RECORD DRAWINGS. A RECORD DRAWING IS A RECORD OF ALL CHANGES THAT OCCURRED IN THE FIELD AND THAT ARE DOCUMENTED THROUGH CHANGE ORDERS, ADDENDA, OR CONTRACTOR/CONSULTANT DRAWING MARKUPS.
- REFER TO THE PLANTING SPECIFICATIONS FOR ADDITIONAL CONDITIONS OF FINAL ACCEPTANCE AND START OF THE MAINTENANCE PERIOD, AS MAY BE APPROPRIATE.
- WARRANTY
 - THE IRRIGATION SYSTEM SUPPLIED AND INSTALLED SHALL BE WARRANTED (LABOR AND MATERIALS) TO REMAIN OPERATIONAL FOR A PERIOD OF 12 MONTHS AFTER THE DATE OF FINAL ACCEPTANCE. DURING THIS PERIOD, THE CONTRACTOR SHALL REPAIR ANY SETTLEMENT OF THE IRRIGATION TRENCHES BY THE END OF THE WARRANTY PERIOD, ANY IRRIGATION PART THAT IS EITHER NON-OPERATIONAL OR THAT IS OPERATING BELOW STANDARDS AS DETERMINED BY THE OWNER, SHALL BE REMOVED FROM THE SITE AND PARTS BE REPLACED. REPLACEMENTS SHALL BE OF THE SAME KIND AS SPECIFIED IN THE IRRIGATION LEGEND, AND SHALL BE INSTALLED AS ORIGINALLY SPECIFIED.
 - IRRIGATION PARTS DAMAGED OR IMPAIRED DUE TO ACTS OF GOD, VANDALISM, AND/OR THE OWNER'S IMPROPER MAINTENANCE SHALL NOT BE COVERED BY THIS WARRANTY.
 - SHOULD THE PERMITTING JURISDICTION REQUIRE AN IRRIGATION AUDIT, THE IRRIGATION CONTRACTOR SHALL RETAIN THE SERVICES OF A THIRD-PARTY CERTIFIED LANDSCAPE IRRIGATION AUDITOR, AT NO ADDITIONAL COST TO THE OWNER.

PANDA EXPRESS SITE NOTES & DETAILS



1000 GAL GREASE TRAP

NO SCALE

PROJECT INFORMATION

PROPOSED DEVELOPMENT FOR: STARBUCKS & PANDA EXPRESS LINCOLN WAY E • MASSILLON, OH 44646

PROFESSIONAL SEAL

PRELIMINARY DATES

JAN. 20, 2023
MAR. 24, 2023

NOT FOR CONSTRUCTION

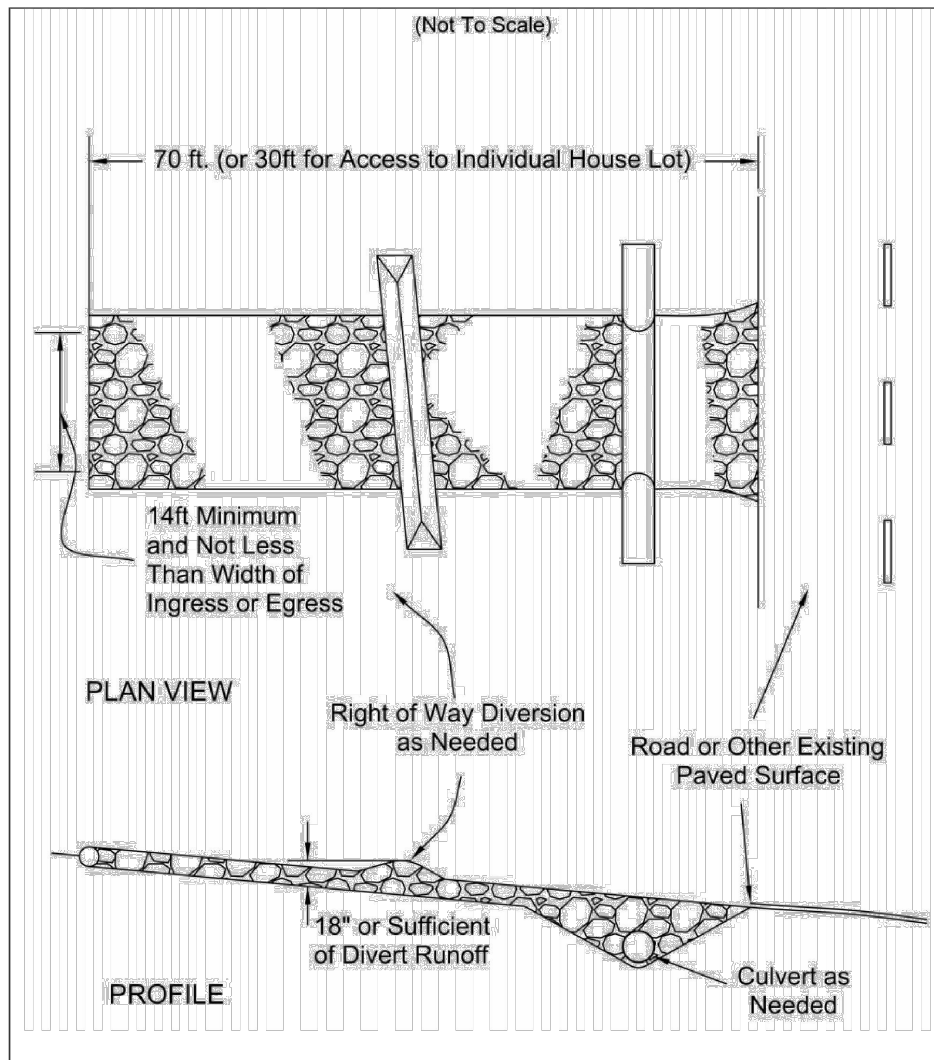
JOB NUMBER

2178020

SHEET NUMBER

C2.2

Specifications
for
Construction Entrance



CHAPTER 7 Soil Stabilization 19

Specifications
for
Construction Entrance

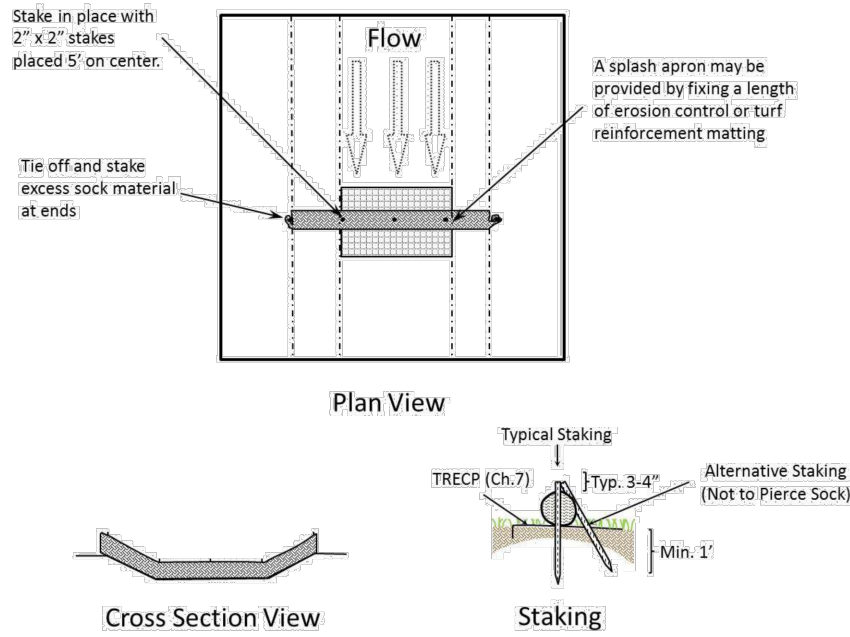
- Stone Size—DOT # 2 (1.5-2.5 inch) stone shall be used, or recycled concrete equivalent.
- Length—The Construction entrance shall be as long as required to stabilize high traffic areas but not less than 70 ft. (exception: apply 30 ft. minimum to single residence lots).
- Thickness -The stone layer shall be at least 6 inches thick for light duty entrances or at least 10 inches for heavy duty use.
- Width -The entrance shall be at least 14 feet wide, but not less than the full width at points where ingress or egress occurs.
- Geotextile -A geotextile shall be laid over the entire area prior to placing stone. It shall be composed of strong rot-proof polymeric fibers and meet the following specifications:
- Timing—The construction entrance shall be installed as soon as is practicable before major grading activities.
- Culvert -A pipe or culvert shall be constructed under the entrance if needed to prevent surface water from flowing across the entrance or to prevent runoff from being directed onto paved surfaces.
- Water Bar -A water bar shall be constructed as part of the construction entrance if needed to prevent surface runoff from flowing the length of the construction entrance and out onto paved surfaces.
- Maintenance -Top dressing of additional stone shall be applied as conditions demand. Mud spilled, dropped, washed or tracked onto public roads, or any surface where runoff is not checked by sediment controls, shall be removed immediately. Removal shall be accomplished by scraping or sweeping.
- Construction entrances shall not be relied upon to remove mud from vehicles and prevent off-site tracking. Vehicles that enter and leave the construction-site shall be restricted from muddy areas.
- Removal—the entrance shall remain in place until the disturbed area is stabilized or replaced with a permanent roadway or entrance.

Figure 7.4.1

Geotextile Specification for Construction Entrance		
Minimum Tensile Strength	200 lbs.	
Minimum Puncture Strength	80 psi.	
Minimum Tear Strength	50 lbs.	
Minimum Burst Strength	320 psi.	
Minimum Elongation	20%	
Equivalent Opening Size	E05 < 0.6 mm.	
Permittivity	1x10-3 cm/sec.	

20 CHAPTER 7 Soil Stabilization

Specifications
for
Compost Sock Check Dam

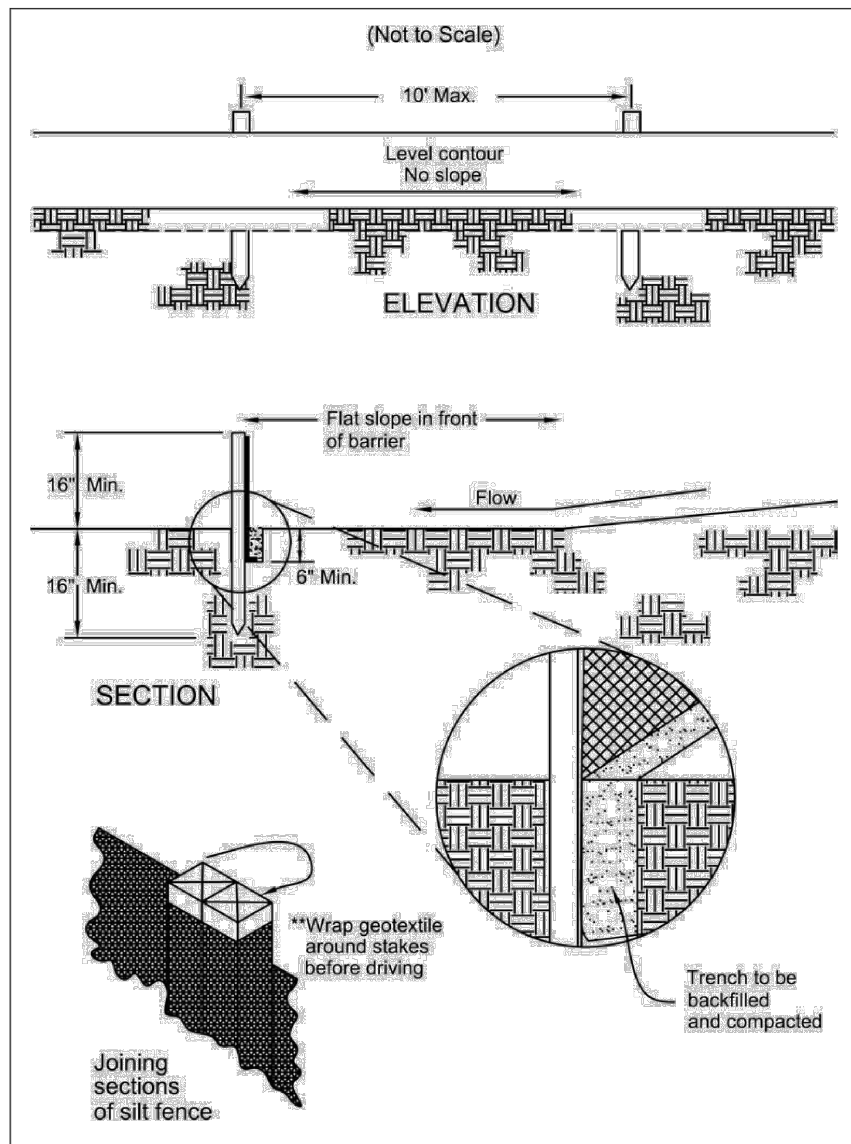


- Compost sock netting shall use a knitted mesh fabric with 1/8-3/8 inch openings, and compost media with particle sizes 90% < 3 inches, and 60% > 3/8 inches (conforming to media described in Chapter 6 Filter Sock).
- Compost sock check dams shall be used in areas that drain 5 acres or less.
- Sediment shall be removed from behind the sock when it reaches 1/2 the height of the check dam.
- Compost sock check dams shall be constructed with 12, 18, or 24 inch diameter compost socks, and shall completely cover the width of the channel. The midpoint of the compost sock check dam shall be a minimum of 6 inches lower than the sides in order to direct flow across the center and away from the channel sides. Filter sock check dams shall be filled to a density such that they shall reach their intended height (diameter). After installation and use, they shall be considered unsuitable and in need of replacement after failing below 80% of their minimum required height (diameter).
- Although no trenching is necessary, compost sock check dams shall be placed on a graded surface where consistent contact with the soil surface is made without bridging over gaps, rills, gullies, stones or other irregularities.
- Place compost sock check dams so that the ends extend to the top of bank. Staking for compost sock check dams shall use 2 inch x 2 inch wooden stakes, placed 5 foot on center. Stake length shall allow them to be driven 12 inches into existing soil and allow at least 2 inches above the sock.
- Space compost sock check dams so that the toe of the upstream dam is at the same elevation or lower elevation as the top of the downstream compost sock check dam (at the center of the channel). This will be influenced by the height of the sock and gradient of the waterway.
- A splash apron may be needed where flows over the sock may erode the channel and undercut the compost sock check dam. Create the apron by fixing a length of Temporary Rolled Erosion Control Product (Erosion Control Matting) or Turf Reinforcement Matting starting upstream of the sock a distance equal to the sock height and extending a length two times the height of the compost sock check dam. See Chapter 7 for information regarding these materials. Materials used should be able to be left in place (e.g. biodegradable/photodegradable TREC) without creating problems for future mowing or maintenance of the channel.

Page updated on 3-3-14

6 CHAPTER 5 Temporary Runoff Control

Specifications
for
Silt Fence



CHAPTER 6 Sediment Controls 33

Specifications
for
Silt Fence

- Silt fence shall be constructed before upslope land disturbance begins.
- All silt fence shall be placed as close to the contour as possible so that water will not concentrate at low points in the fence and so that small swales or depressions that may carry small concentrated flows to the silt fence are dissipated along its length.
- Ends of the silt fences shall be brought upslope slightly so that water ponded by the silt fence will be prevented from flowing around the ends.
- Silt fence shall be placed on the flattest area available.
- Where possible, vegetation shall be preserved for 5 feet (or as much as possible) upslope from the silt fence. If vegetation is removed, it shall be reestablished within 7 days from the installation of the silt fence.
- The height of the silt fence shall be a minimum of 16 inches above the original ground surface.
- The silt fence shall be placed in an excavated or sliced trench cut a minimum of 6 inches deep. The trench shall be made with a trencher, cable laying machine, slicing machine, or other suitable device that will ensure an adequately uniform trench depth.
- The silt fence shall be placed with the stakes on the downslope side of the geotextile. A minimum of 8 inches of geotextile must be below the ground surface. Excess material shall lay on the bottom of the 6-inch deep trench. The trench shall be backfilled and compacted on both sides of the fabric.
- Seams between sections of silt fence shall be spliced together only at a support post with a minimum 6-in. overlap prior to driving into the ground, (see details).
- Maintenance—Silt fence shall allow runoff to pass only as diffuse flow through the geotextile. If runoff over-tops the silt fence, flows under the fabric or around the fence ends, or in any other way allows a concentrated flow discharge, one of the following shall be performed, as appropriate: 1) the layout of the silt fence shall be changed, 2) accumulated sediment shall be removed, or 3) other practices shall be installed.

Silt fences shall be inspected after each rainfall and at least daily during a prolonged rainfall. The location of existing silt fence shall be reviewed daily to ensure its proper location and effectiveness. If damaged, the silt fence shall be repaired immediately.

Criteria for silt fence materials

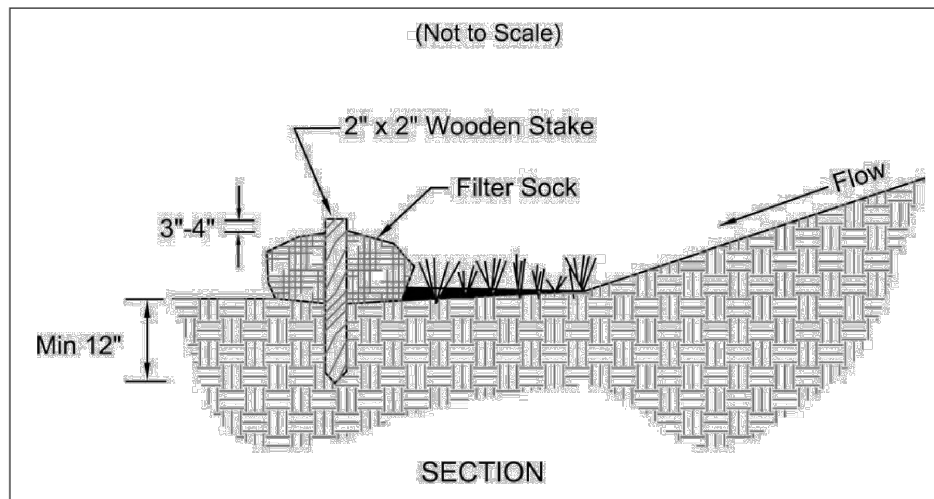
- Fence post – The length shall be a minimum of 32 inches. Wood posts will be 2-by-2-in. nominal dimensioned hardwood of sound quality. They shall be free of knots, splits and other visible imperfections, that will weaken the posts. The maximum spacing between posts shall be 10 ft. Posts shall be driven a minimum 16 inches into the ground, where possible. If not possible, the posts shall be adequately secured to prevent overturning of the fence due to sediment/water loading.
- Silt fence fabric – See chart below.

Table 6.3.2 Minimum criteria for Silt Fence Fabric (DOT 2002)

FABRIC PROPERTIES	VALUES	TEST METHOD
Minimum Tensile Strength	120 lbs. (535 N)	ASTM D 4632
Maximum Elongation at 60 lbs	50%	ASTM D 4632
Minimum Puncture Strength	50 lbs (220 N)	ASTM D 4633
Minimum Tear Strength	40 lbs (180 N)	ASTM D 4533
Apparent Opening Size	≤ 0.84 mm	ASTM D 4751
Minimum Permittivity	1X10-2 sec-1	ASTM D 4491
UV Exposure Strength Retention	70%	ASTM G 4355

34 CHAPTER 6 Sediment Controls

Specifications
for
Filter Sock



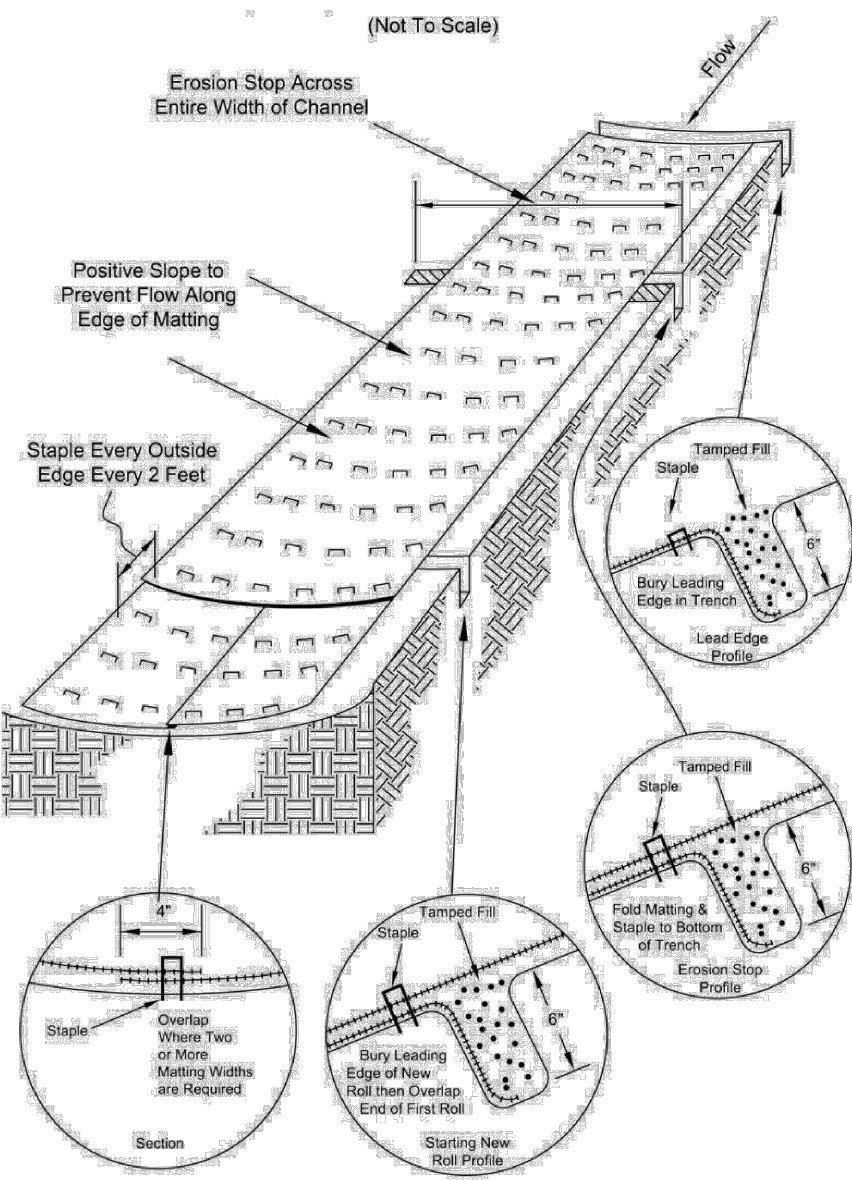
- Materials – Compost used for filter socks shall be weed, pathogen and insect free and free of any refuse, contaminants or other materials toxic to plant growth. They shall be derived from a well-decomposed source of organic matter and consist of a particles ranging from 3/8" to 2".
- Filter Socks shall be 3 or 5 mil continuous, tubular, HDPE 3/8" knitted mesh netting material, filled with compost passing the above specifications for compost products.
- Filter socks will be placed on a level line across slopes, generally parallel to the base of the slope or other affected area. On slopes approaching 2:1, additional socks shall be provided at the top and as needed mid-slope.
- Filter socks intended to be left as a permanent filter or part of the natural landscape, shall be seeded at the time of installation for establishment of permanent vegetation.
- Filter Socks are not to be used in concentrated flow situations or in runoff channels.

MAINTENANCE:

- Routinely inspect filter socks after each significant rain, maintaining filter socks in a functional condition at all times.
- Remove sediments collected at the base of the filter socks when they reach 1/3 of the exposed height of the practice.
- Where the filter sock deteriorates or fails, it will be repaired or replaced with a more effective alternative.
- Removal – Filter socks will be dispersed on site when no longer required in such as way as to facilitate and not obstruct seedings.

50 CHAPTER 6 Sediment Controls

Specifications
for
Temporary Rolled Erosion Control Product



54 CHAPTER 7 Soil Stabilization

Specifications
for
Temporary Rolled Erosion Control Product

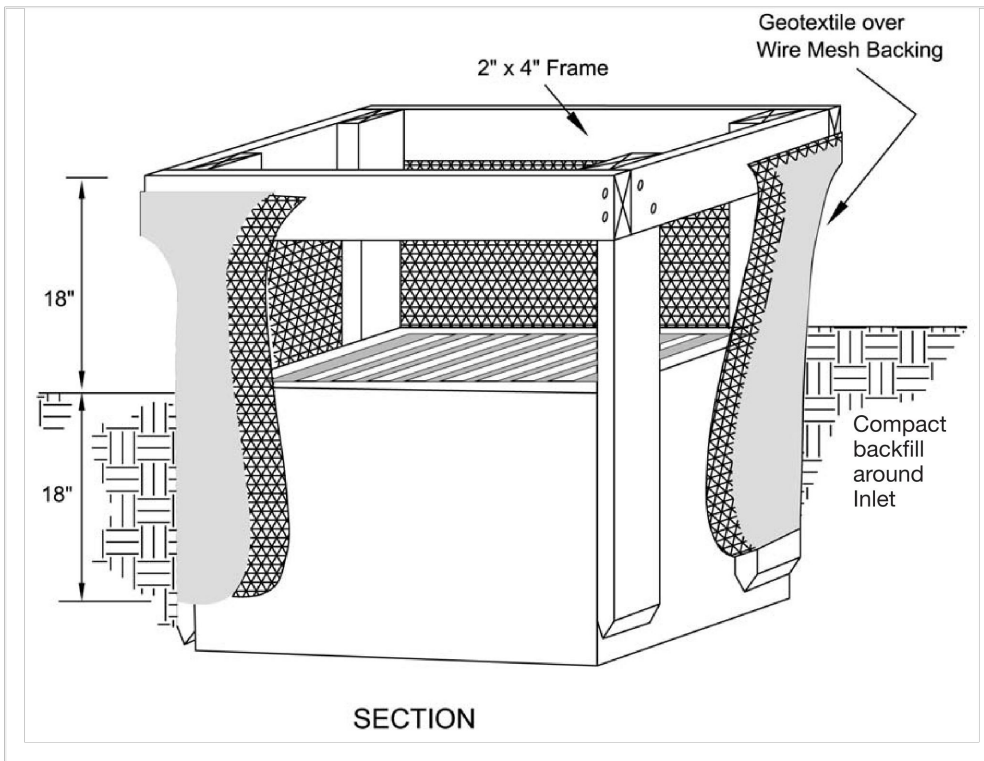
1. Channel/Slope Soil Preparation Grade and compact area of installation, preparing seedbed by loosening 2"-3" of topsoil above final grade. Incorporate amendments such as lime and fertilizer into soil. Remove all rocks, clods, vegetation or other debris so that installed RECP will have direct contact with the soil surface.
2. Channel/Slope Seeding Apply seed to soil surface prior to installation. All check slots, anchor trenches, and other disturbed areas must be reseeded. Refer to the Permanent Seeding specification for seeding recommendations.

Slope Installation

3. Excavate top and bottom trenches (12"x6"). Intermittent erosion check slots (6"x6") may be required based on slope length. Excavate top anchor trench 2' x 3' over crest of the slope.
4. If intermittent erosion check slots are required, install RECP in 6"x6" slot at a maximum of 30' centers or the mid point of the slope. RECP should be stapled into trench on 12" centers.
5. Install RECP in top anchor trench, anchor on 12" spacings, backfill and compact soil.
6. Unroll RECP down slope with adjacent rolls overlapped a minimum of 3". Anchor the seam every 18". Lay the RECP loose to maintain direct soil contact, do not pull taught.
7. Overlap roll ends a minimum of 12" with upslope RECP on top for a shingle effect. Begin all new rolls in an erosion check slot if required, double anchor across roll every 12".
8. Install RECP in bottom anchor trench (12"x6"), anchor every 12". Place all other staples throughout slope at 1 to 2.5 per square yard dependant on slope. Refer to manufacturer's anchor guide.

CHAPTER 7 Soil Stabilization 55

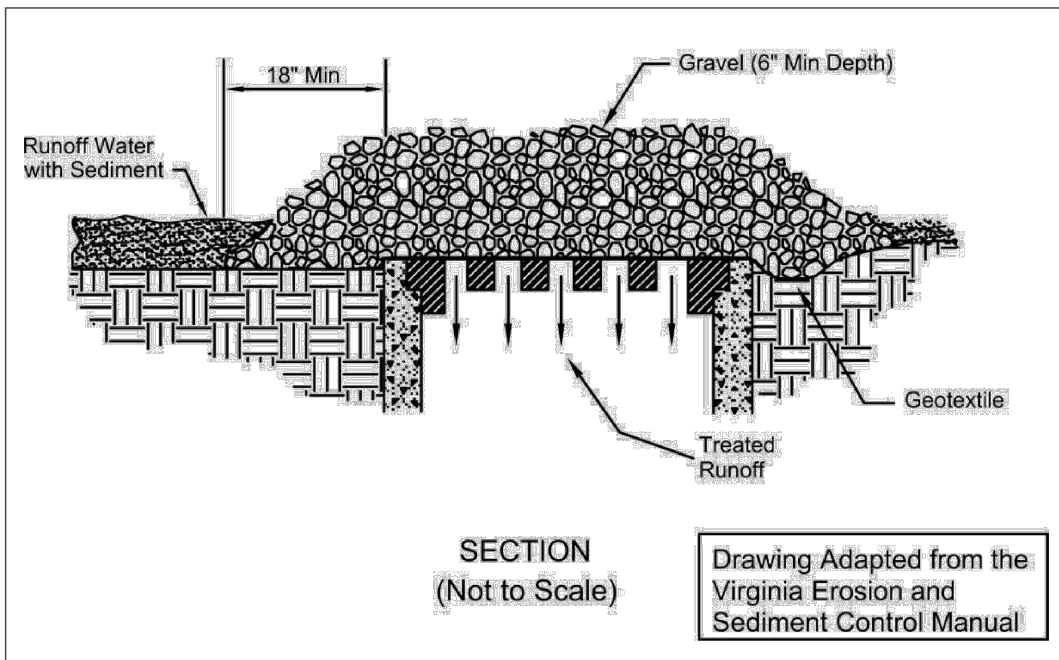
Specifications
for
Geotextile Inlet Protection



1. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. The earth around the inlet shall be excavated completely to a depth at least 18 inches.
3. The wooden frame shall be constructed of 2-inch by 4-inch construction grade lumber. The 2-inch by 4-inch posts shall be driven one (1) ft. into the ground at four corners of the inlet and the top portion of 2-inch by 4-inch frame assembled using the overlap joint shown. The top of the frame shall be at least 6 inches below adjacent roads if ponded water will pose a safety hazard to traffic.
4. Wire mesh shall be of sufficient strength to support fabric with water fully impounded against it. It shall be stretched tightly around the frame and fastened securely to the frame.
5. Geotextile material shall have an equivalent opening size of 20-40 sieve and be resistant to sunlight. It shall be stretched tightly around the frame and fastened securely. It shall extend from the top of the frame to 18 inches below the inlet notch elevation. The geotextile shall overlap across one side of the inlet so the ends of the cloth are not fastened to the same post.
6. Backfill shall be placed around the inlet in compacted 6-inch layers until the earth is even with notch elevation on ends and top elevation on sides.
7. A compacted earth dike or check dam shall be constructed in the ditch line below the inlet if the inlet is not in a depression. The top of the dike shall be at least 6 inches higher than the top of the frame.

CHAPTER 6 Sediment Controls 39

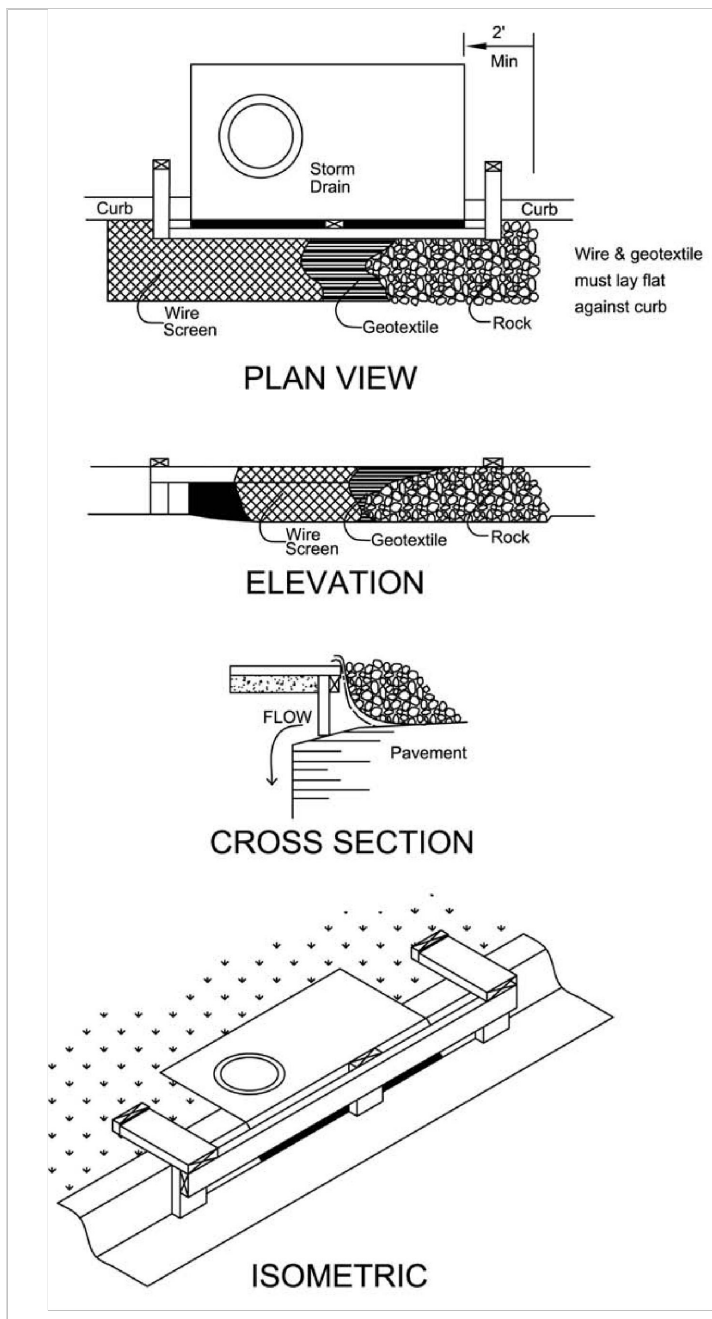
Specifications
for
Geotextile-Stone Inlet Protection



1. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. Geotextile and/or wire material shall be placed over the top of the storm sewer and approximately six (6) inches of 2-inch or smaller clean aggregate placed on top. Extra support for geotextile is provided by placing hardware
- cloth or wire mesh across the inlet cover. The wire should be no larger than 1/2" mesh and should extend an extra 12 inches across the top and sides of the inlet cover.
3. Maintenance must be performed regularly, especially after storm events. When clogging of the stone or geotextile occurs, the material must be removed and replaced.

40 CHAPTER 6 Sediment Controls

Specifications
for
Geotextile - Stone Inlet Protection for Curb Inlets



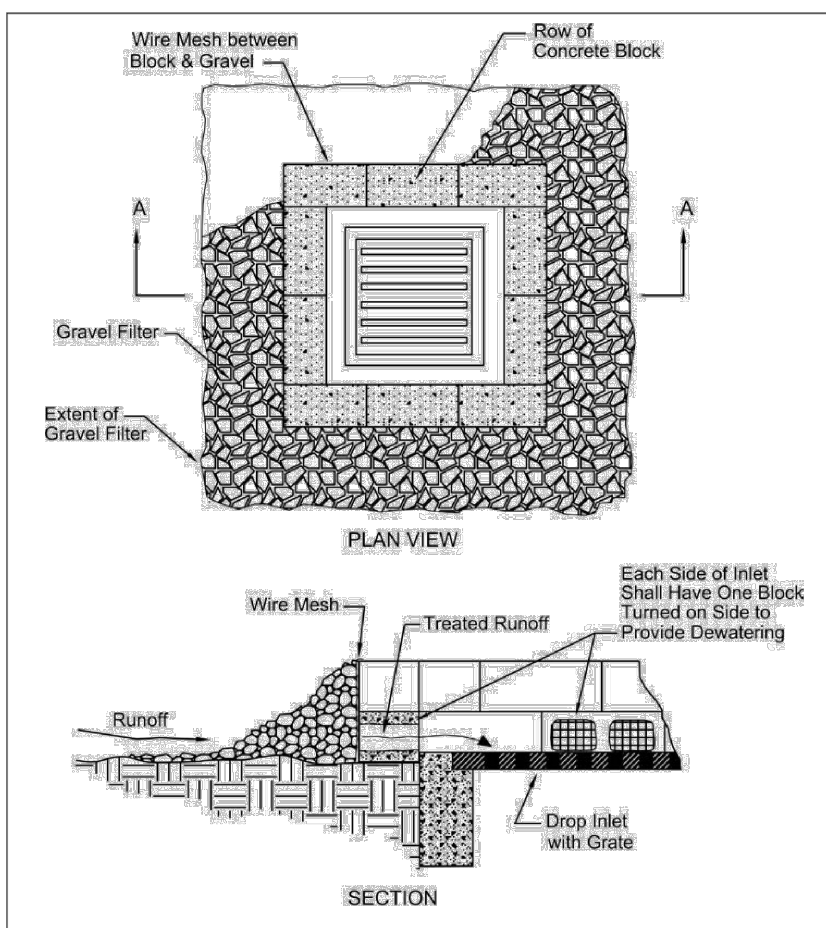
CHAPTER 6 Sediment Controls 41

Specifications
for
Geotextile-Stone Inlet Protection for Curb Inlets

1. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. Construct a wooden frame of 2-by-4-in. construction-grade lumber. The end spacers shall be a minimum of 1 ft. beyond both ends of the throat opening. The anchors shall be nailed to 2-by-4-in. stakes driven on the opposite side of the curb.
3. The wire mesh shall be of sufficient strength to support fabric and stone. It shall be a continuous piece with a minimum width of 30 in. and 4 ft. longer than the throat length of the inlet, 2 ft. on each side.
4. Geotextile cloth shall have an equivalent opening size (EOS) of 20-40 sieve and be resistant to sunlight. It shall be at least the same size as the wire mesh.
5. The wire mesh and geotextile cloth shall be formed to the concrete gutter and against the face of the curb on both sides of the inlet and securely fastened to the 2-by-4-in. frame.
6. Two-inch stone shall be placed over the wire mesh and geotextile in such a manner as to prevent water from entering the inlet under or around the geotextile cloth.
7. This type of protection must be inspected frequently and the stone and/or geotextile replaced when clogged with sediment.

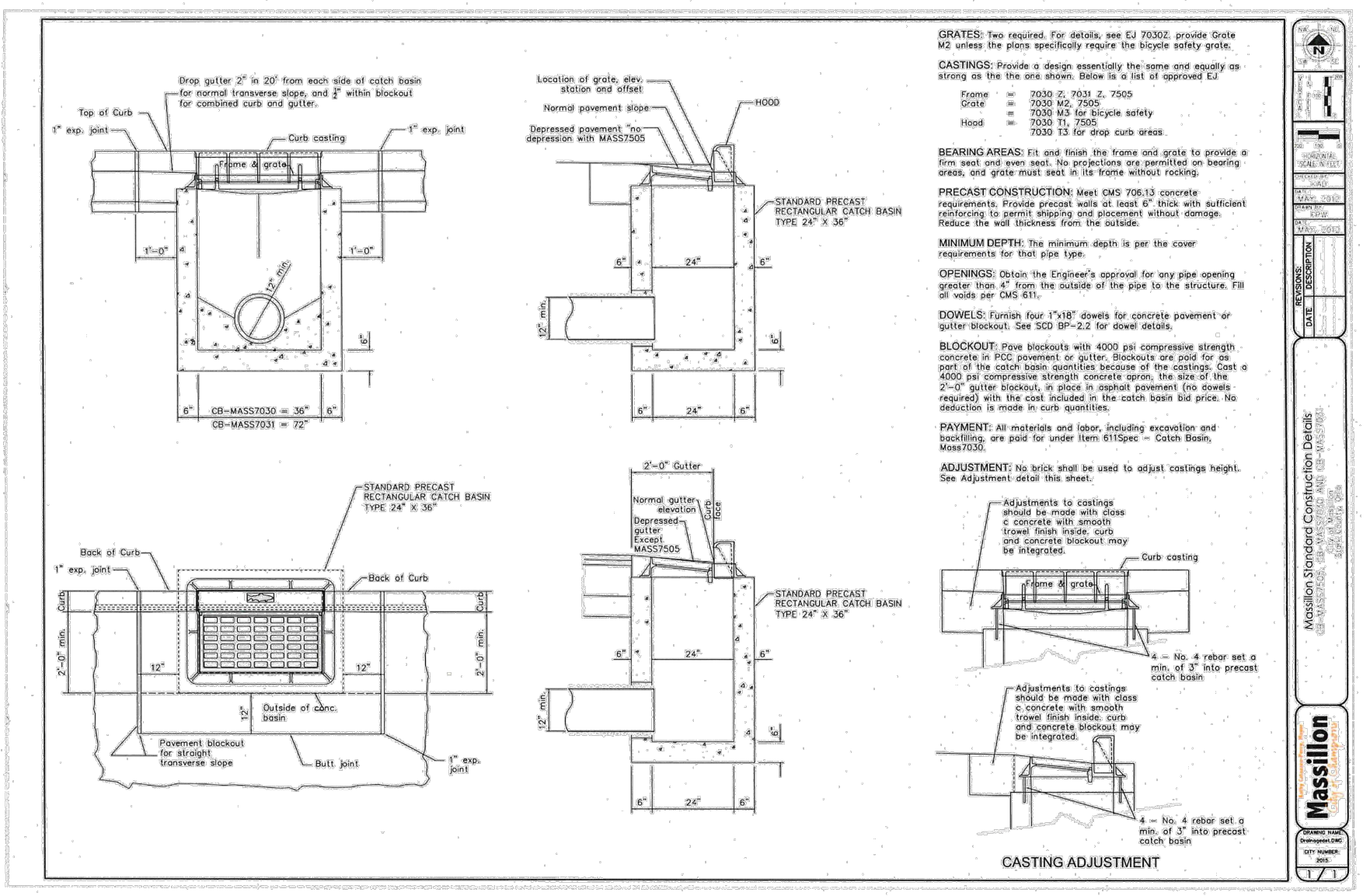
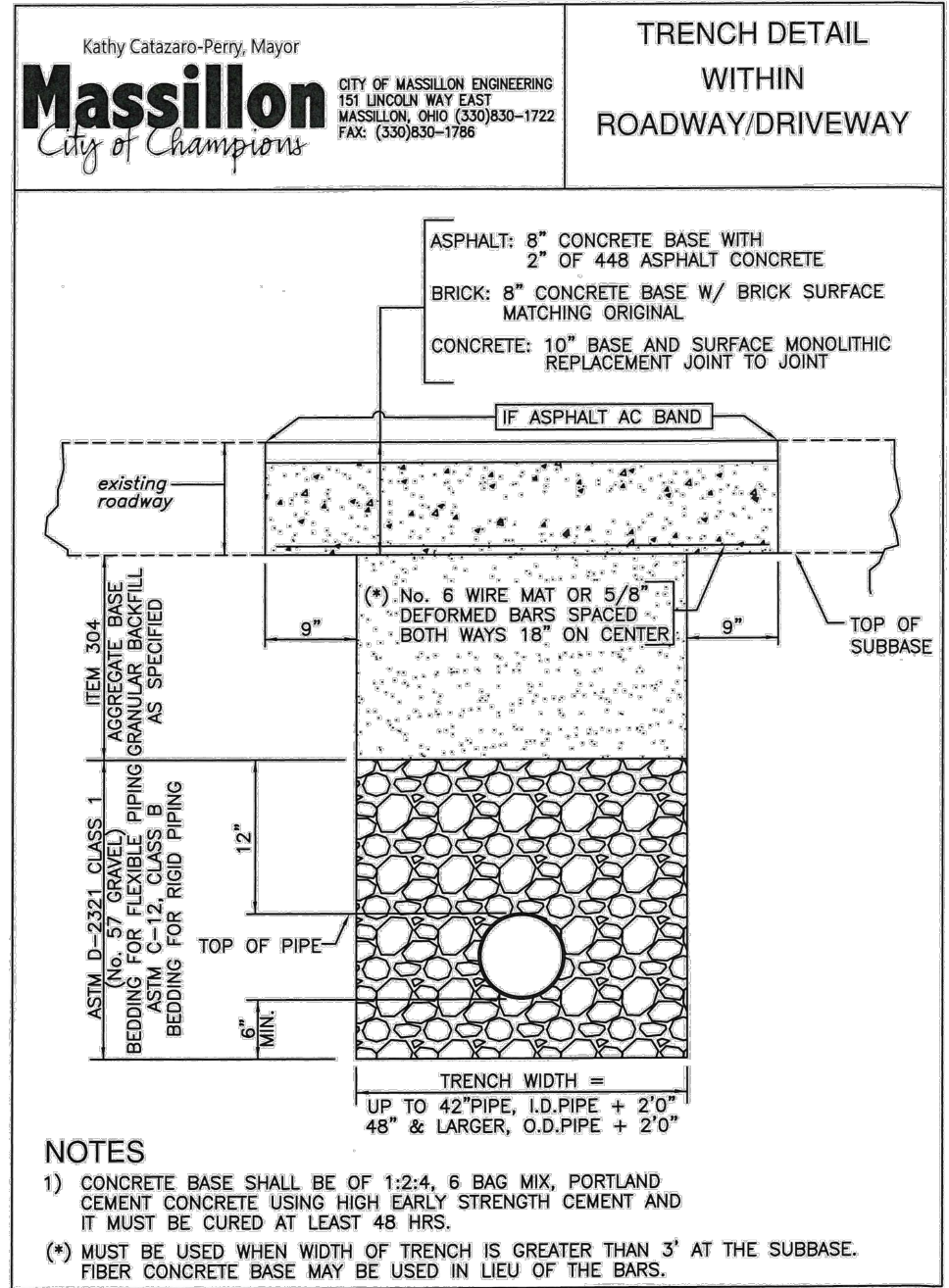
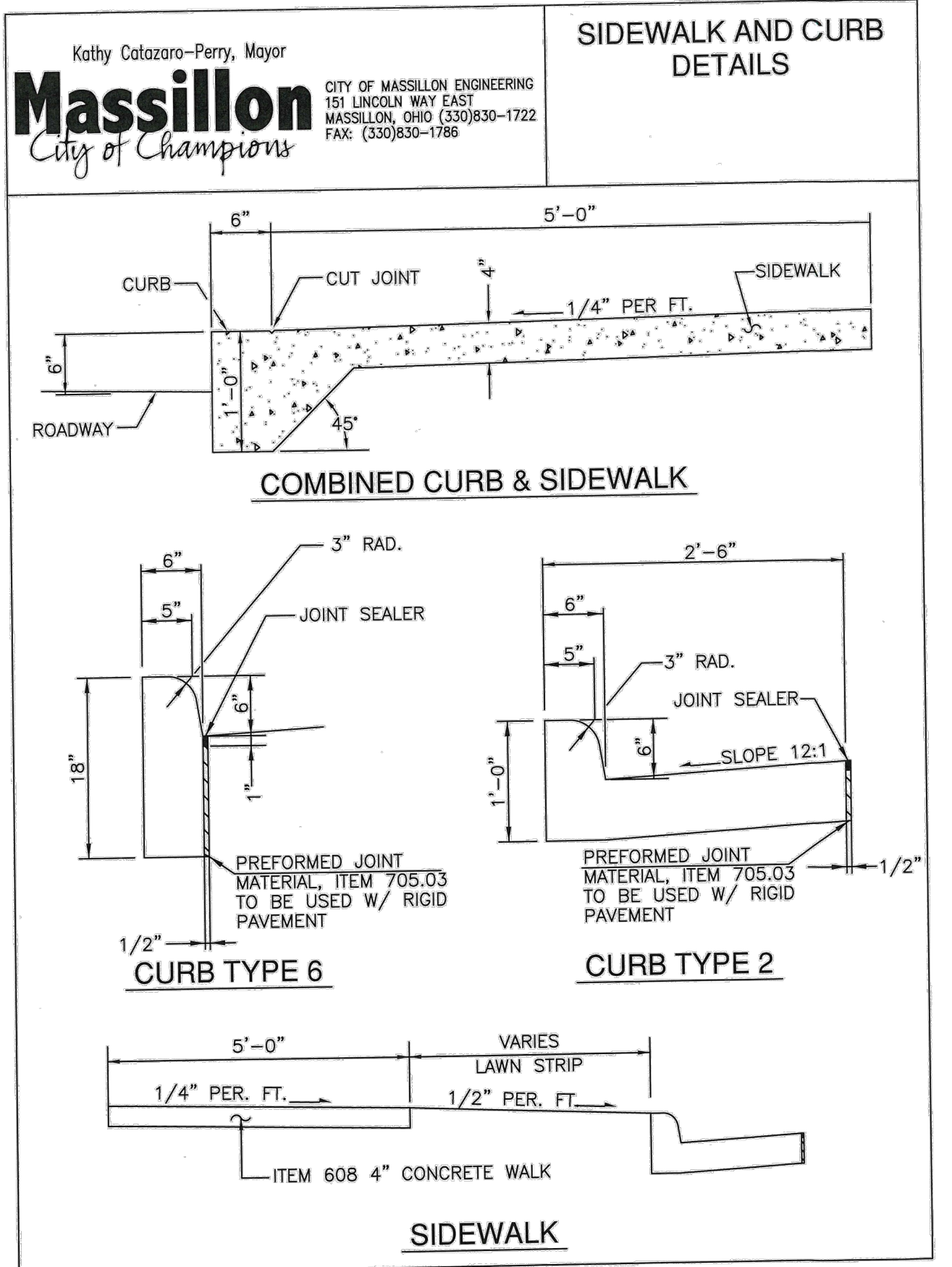
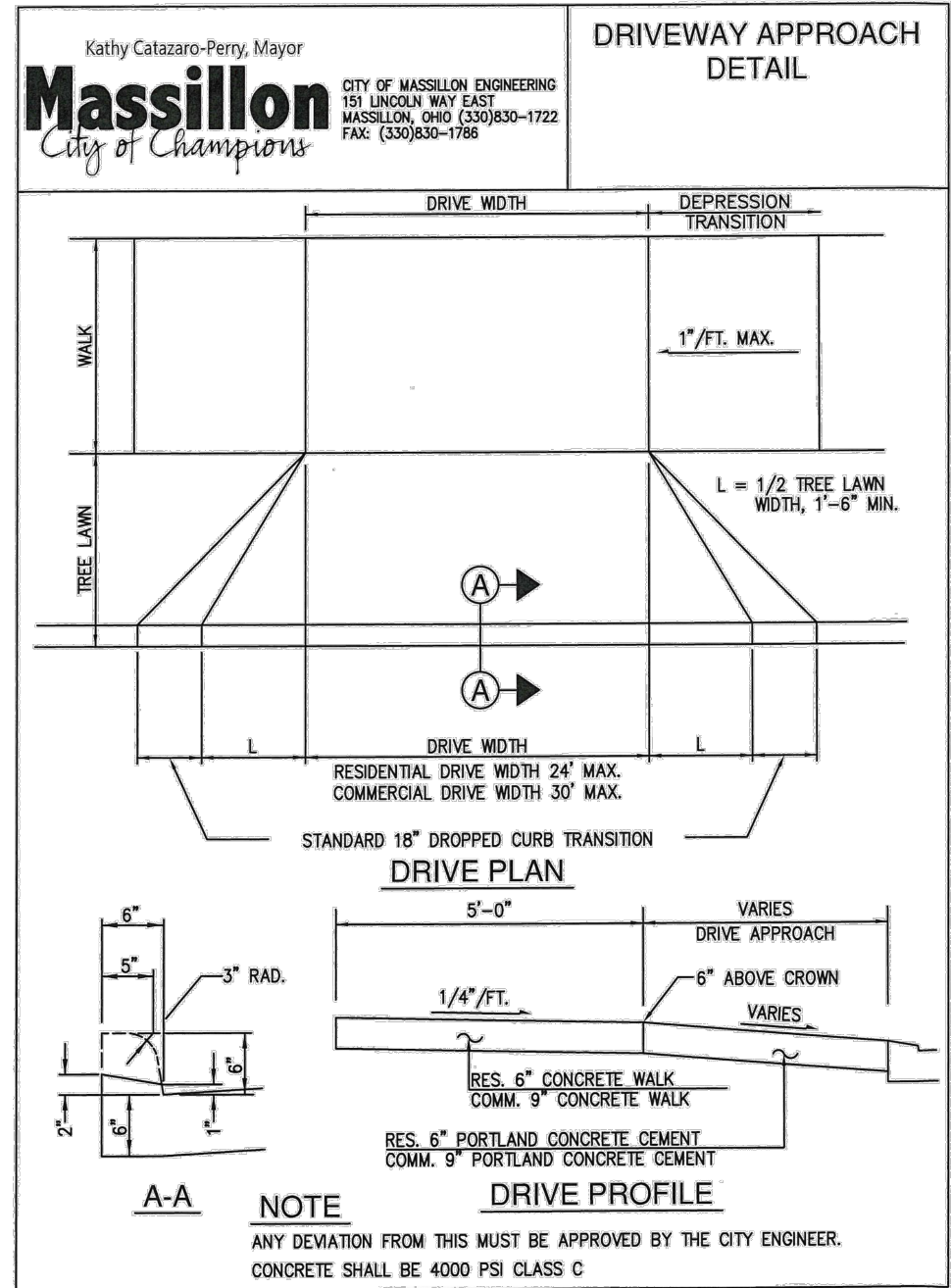
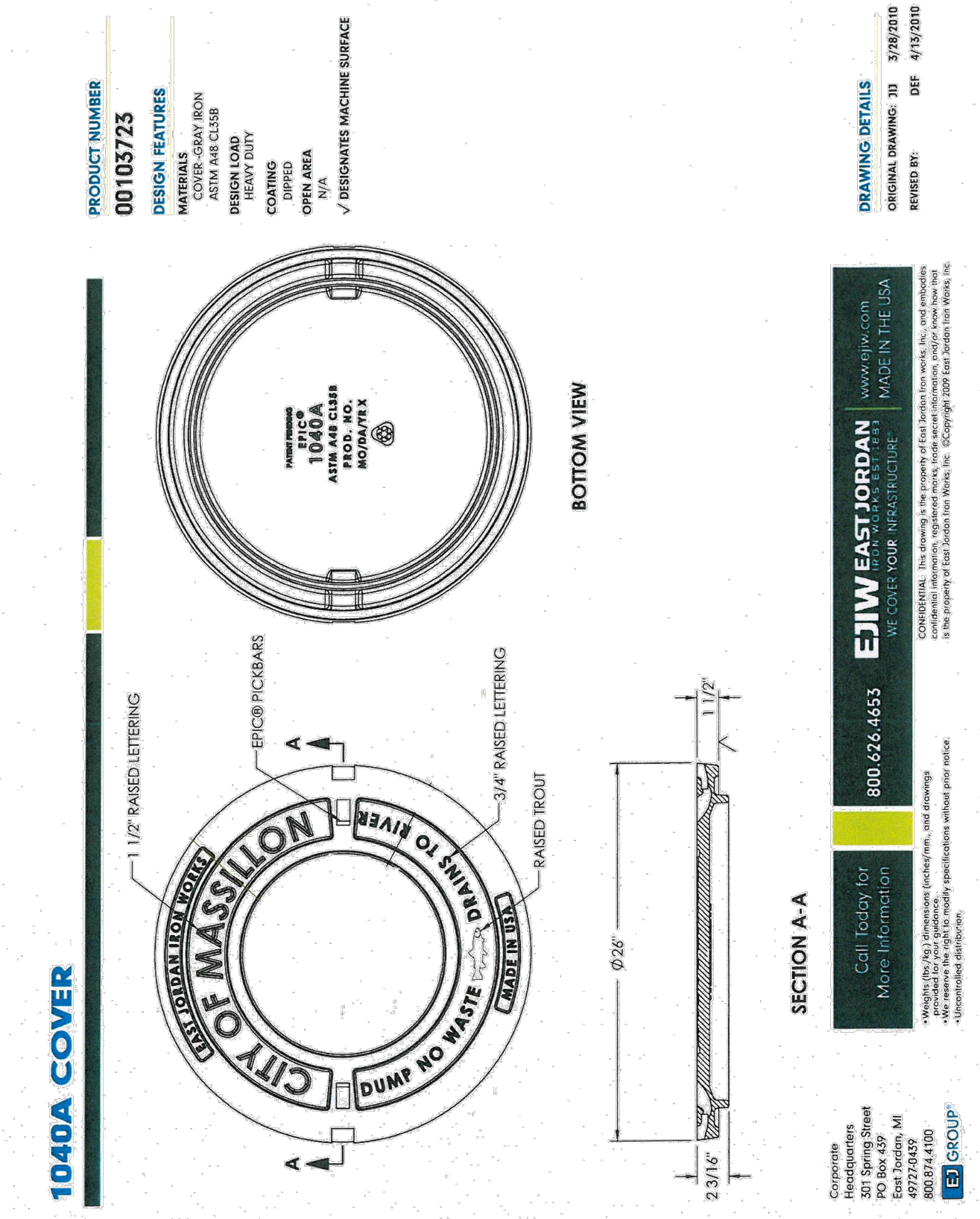
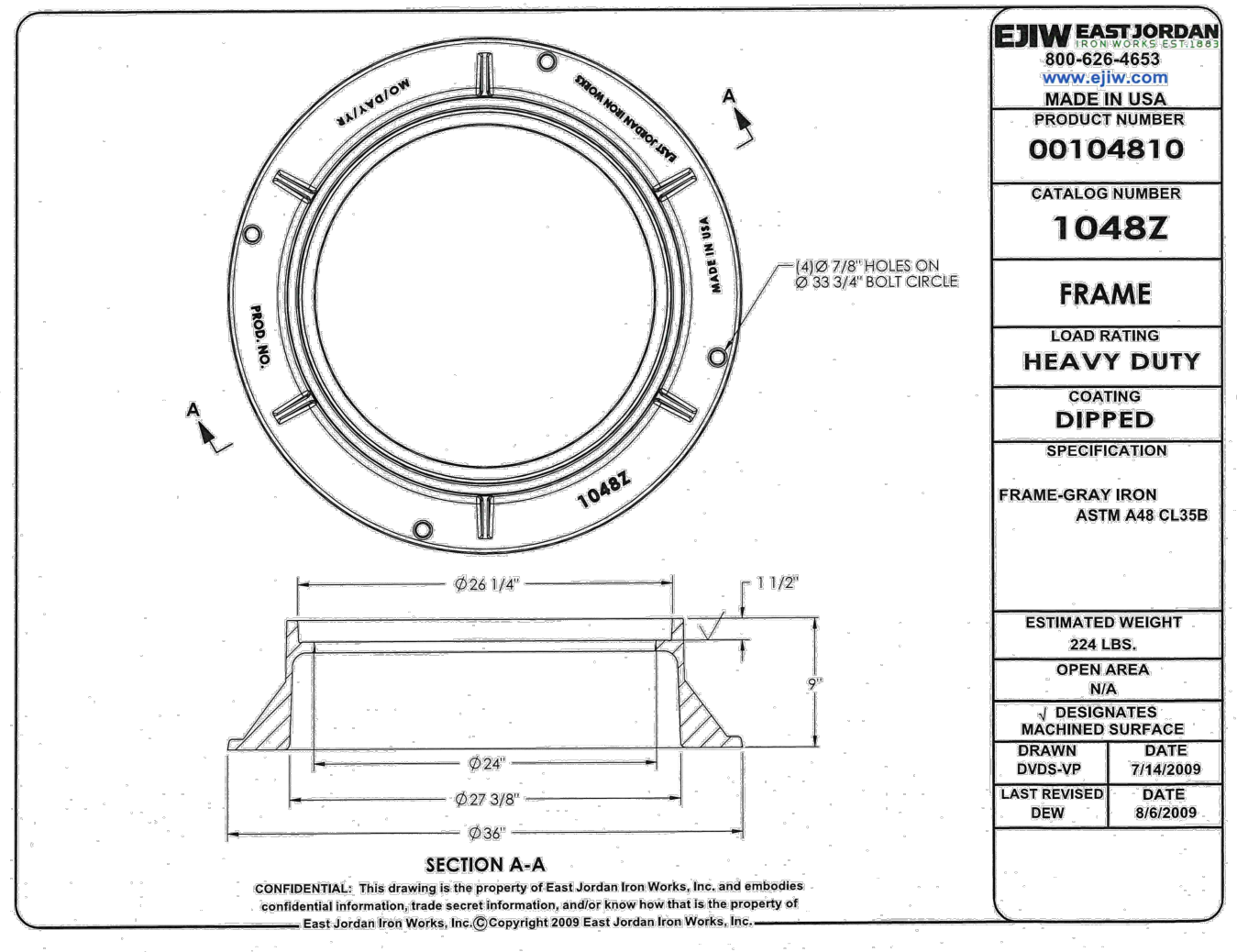
42 CHAPTER 6 Sediment Controls

Specifications
for
Block and Gravel Drop Inlet Filter



1. Place 4-inch by 8-inch by 12-inch concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, with the ends of adjacent blocks abutting. The height of the barrier can be varied, depending upon the design needs, by stacking combinations of the same size blocks. The barrier of blocks should be at least 12-inches high but no greater than 24-inches high.
2. Wire mesh should be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the block cores. Hardware cloth or comparable wire mesh with 1/2-inch openings should be used.
3. Two-inch stone should be piled against the wire to the top of the block barrier, as shown below.
4. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, pull stone away from the blocks, clean and/or replace.

CHAPTER 6 Sediment Controls 43



PROJECT INFORMATION

PROPOSED DEVELOPMENT FOR:
STARBUCKS & PANDA EXPRESS
LINCOLN WAY E • MASSILLON, OH 44646

PROFESSIONAL SEAL

PRELIMINARY DATES

JAN. 20, 2023
MAR. 24, 2023

NOT FOR CONSTRUCTION

JOB NUMBER

2178020

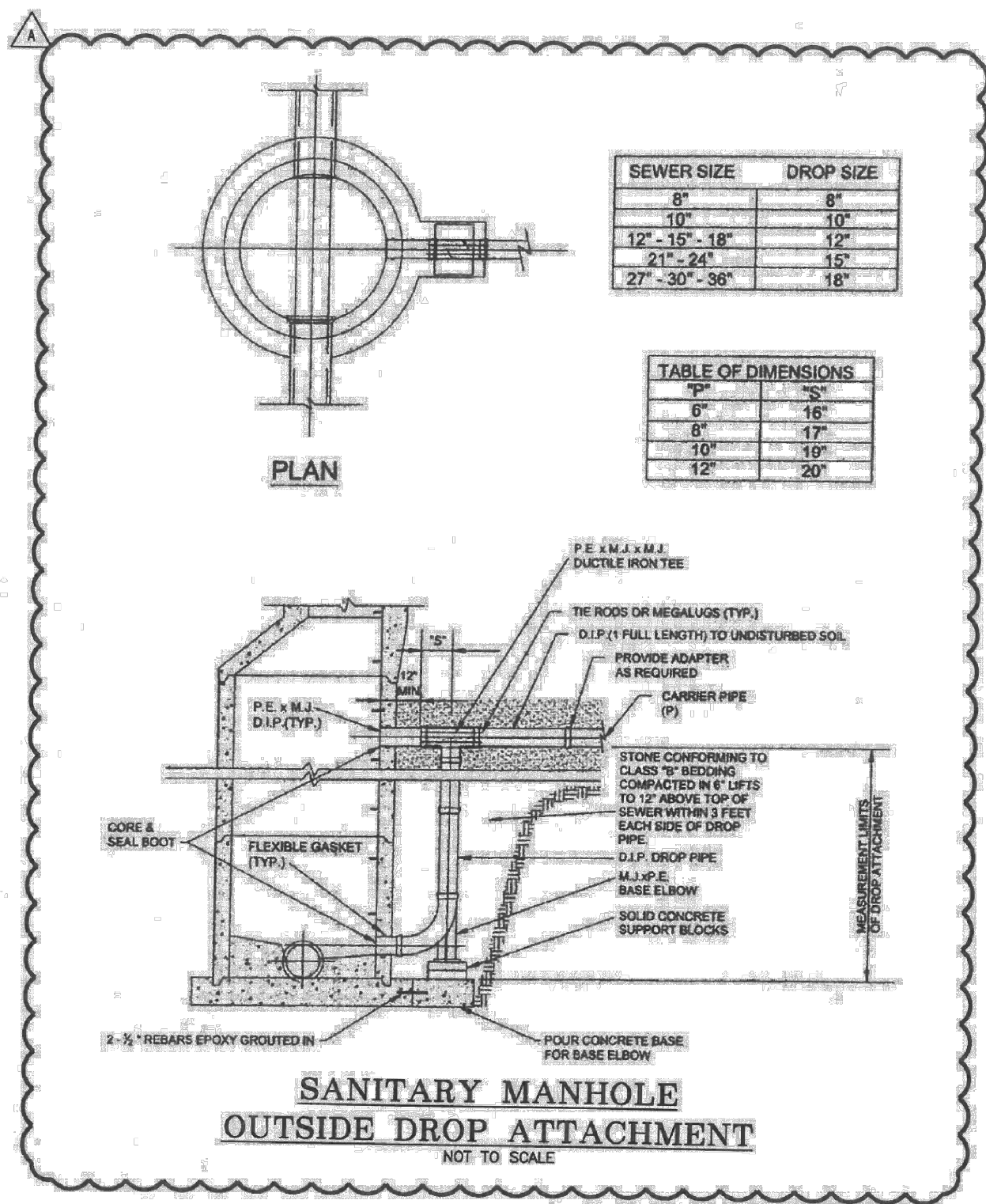
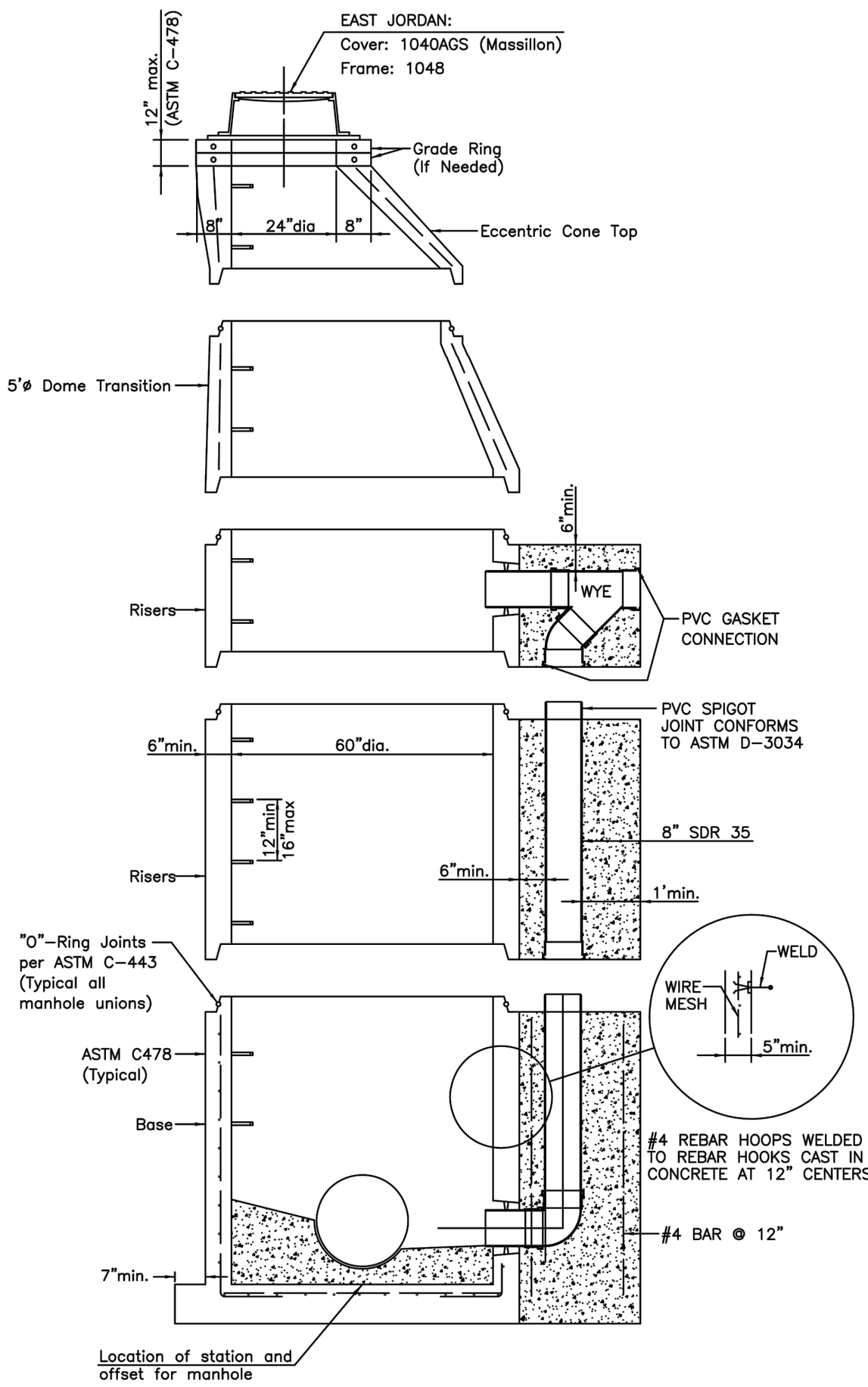
SHEET NUMBER

C2.6

Kathy Catazaro-Perry, Mayor
Massillon
City of Champions

CITY OF MASSILLON ENGINEERING
151 LINCOLN WAY EAST
MASSILLON, OHIO (330)830-1722
FAX: (330)830-1786

STANDARD
DROP MANHOLE





PROJECT INFORMATION

PROPOSED DEVELOPMENT FOR:

STARBUCKS & PANDA EXPRESS

LINCOLN WAY E • MASSILLON, OH 44646

PROFESSIONAL SEAL

PRELIMINARY DATES

JAN. 17, 2023
JAN. 20, 2023
MAR. 24, 2023

NOT FOR CONSTRUCTION

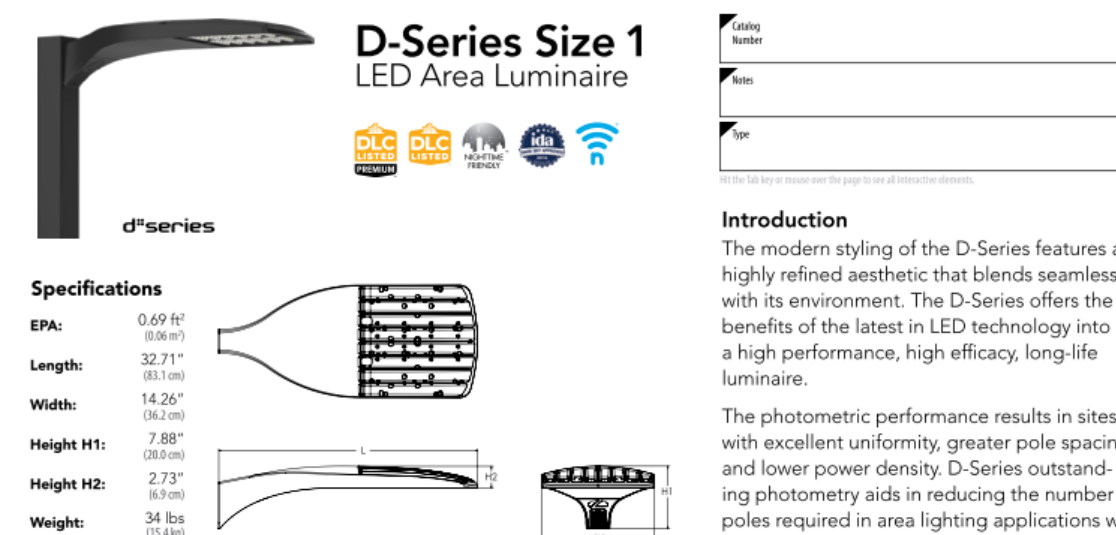
JOB NUMBER

2178020

SHEET NUMBER

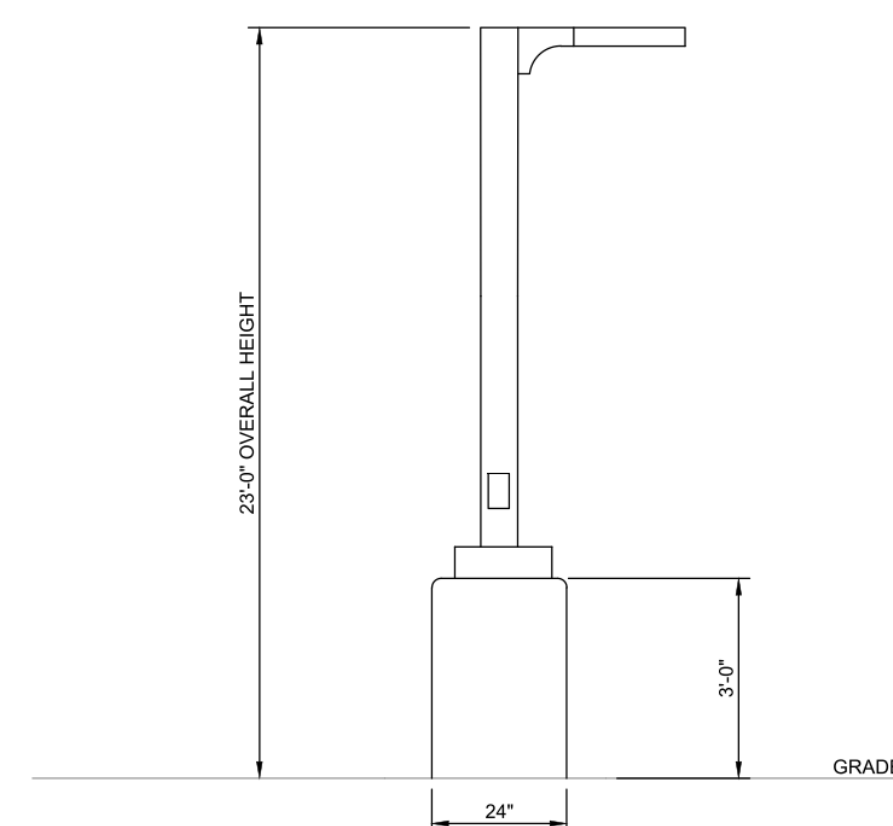
C3.1

2021 © EXCEL ENGINEERING, INC.









Ordering Information

EXAMPLE: DSX1 LED P7 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

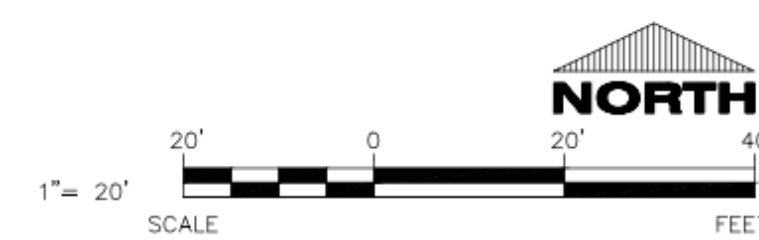
[illegible][illegible]

LIGHT POLE DETAIL

NO SCALE

Schedule										
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage	Wattage
	L14	3	Uthonia Lighting	DSX1 LED P6 40K 80CRI T4M	D-Series Size 1 Area Luminaire P6 Performance Package 4000K CCT 80 CRI Type 4 Medium	1	19126	0.9	165.25	
	L24	2	Uthonia Lighting	DSX1 LED P6 40K 80CRI T4M	D-Series Size 1 Area Luminaire P6 Performance Package 4000K CCT 80 CRI Type 4 Medium	1	19126	0.9	330.5	
	WP2	1	Uthonia Lighting	WST LED P2 30K VW MVOLT	WST LED, Performance package 2, 3000 K, visual comfort wide, MVOLT	1	3276	0.9	25	
	C16	16	LEDRA BRANDS	NU3-RAPH-SW-16LM-27K-90CRI-D50	NU3 Round Adjustable Pinhole Static White 50D, No Accessory	1	1084	0.9	12.5	
	WP3	1	GAMA SONIC	GS-101PR-G	8W LED SOLAR SECURITY LIGHT	1	860	0.9	8	
	L14H	4	Uthonia Lighting	DSX1 LED P6 40K 80CRI T4M HS	D-Series Size 1 Area Luminaire P6 Performance Package 4000K CCT 80 CRI Type 4 Medium Housesside Shield	1	16453	0.9	165.2497	

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #3	+	1.1 fc	18.5 fc	0.0 fc	N/A	N/A
PARKING LOT	X	2.1 fc	15.4 fc	0.5 fc	30.8:1	4.2:1



CIVIL SITE PHOTOMETRIC PLAN & DETAILS