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<u>PROPOSED</u>

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DESCRIPTIONS

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	DESCRIPTION
	BOUNDARY PROPERTY LINE
	PROPERTY LINE
	RIGHT-OF-WAY
	UNDERLYING PROPERTY LINE
	CENTER LINE
	EASEMENT LINE
	SETBACK LINE
	SECTION LINE
	INDEX (MAJOR) CONTOUR
	INTERMEDIATE (MINOR) CONTO
×	EXISTING FENCE LINE
/	EXISTING WOOD FENCE LINE
	CURB
	EDGE OF PAVEMENT
	EDGE OF GRAVEL
	PAVEMENT SHOULDER
	STORM PIPE
	DOWNSPOUT SERVICE LINE
	WATER LINE
	SANITARY SEWER LINE
	PROPOSED FORCEMAIN
	GAS LINE
	OVERHEAD WIRE
	ELECTRIC LINE
	FIBER OPTIC LINE
	TELEPHONE LINE
	GUIDE RAIL
$\bigwedge $	TREELINE
	PROPOSED TRENCH BACKFILL
	PROPOSED CONCRETE
	PROPOSED PAVEMENT
	PROPOSED RIPRAP
	PROPOSED STRIPING
	BUILDING
	PROPOSED SLOPE LABEL
	PROPOSED SPOT ELEVATION
	TOP OF WALL ELEVATION BOTTOM OF WALL ELEVATION TOP OF CURB ELEVATION
	FLOWLINE ELEVATION
	SANITARY MANHOLE
	CLEANOUT
	FLARED END SECTION
	STORM MANHOLE
	STORM CATCH BASIN (ROUND
	STORM CATCH BASIN (CURB
	STORM CURB INLET
	STORM INLET (CIRCULAR)
	STORM INLET (SQUARE)
	STORM BEEHIVE INLET STORM DRAIN OR DOWNSPOU
	WATER VALVE VAULT
	WATER VALVE BOX
	FIRE HYDRANT
	ELECTRIC CONTROL CABINET
	ELECTRIC HANDHOLE
	ELECTRIC METER
	LIGHT STANDARD
	UTILITY POLE
	TRAFFIC MANHOLE
	TELEPHONE PULL BOX (FLUS

UR CONTOUR LINE INE CKFILL ATION ATION DN ROUND LID) CURB LID) NSPOUT BINET (ABOVE GRADE) TELEPHONE PULL BOX (FLUSH WITH GRADE) TELEPHONE BOX/CABINET (ABOVE GRADE)

CABLE MANHOLE FIBER OPTIC BOX/CABINET (ABOVE GRADE) FIBER OPTIC MANHOLE GAS LINE MARKER

MANHOLE (UNKNOWN)

REFERENCE

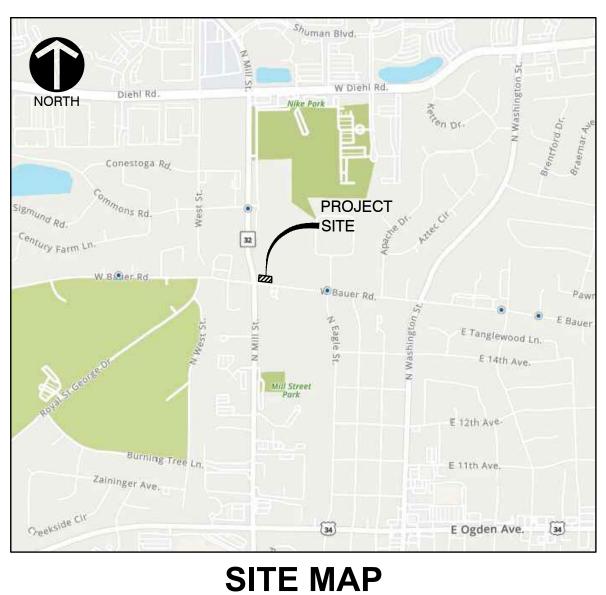
EXISTING CONDITIONS ARE BASED UPON FIELD OBSERVATIONS MADE ON OCTOBER 31, 2022 BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

VGM

FIELD DATUM: ILLINOIS STATE PLANE NSRS 2011, EAST ZONE- US SURVEY FOOT CITY OF NAPERVILLE DATUM NAVD 88.

UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON FIELD OBSERVATIONS, ATLAS MAPS PROVIDED BY THE CITY OF NAPERVILLE AND THOSE PUBLIC UTILITY COMPANIES OPERATING UNDER FRANCHISE OR CONTRACT WITH THE CITY OF NAPERVILLE.

FINAL ENGINEERING PLANS MILL AND BAUER TOWNHOMES NAPERVILLE, ILLINOIS 60540



N.T.S.

BENCHMARKS

REFERENCE:

BERNTSEN MONUMENT IN 6" PVC PIPE WITH BMAC 6 ALUMINUM ACCESS 1. COVER AT THE NORTHWEST CORNER OF 5TH AVENUE AND MILL STREET. (CITY OF NAPERVILLE BENCHMARK #1506)

ELEVATION=690.61 (NAVD88)

SITE:

- 2. CUT CROSS AT EAST END OF CURB SOUTH SIDE OF BAUER ROAD, 116'± WEST OF THE EAST PROPERTY LINE OF SUBJECT SITE EXTENDED. ELEVATION=719.55
- 3. MAGNAIL IN WEST EDGE OF ASPHALT PATH EAST SIDE OF MILL ROAD, 29'± NORTH OF THE NORTH PROPERTY LINE OF SUBJECT SITE. ELEVATION=717.60

PROJECT TEAM

OWNER

MILL AND BAUER LLC 552 SOUTH WASHINGTON STREET SUITE 224 NAPERVILLE, ILLINOIS 60540 PH: (630) 201-7306 CONTACT: CHAD MEASE

CIVIL ENGINEER

CIVIL & ENVIRONMENTAL CONSULTANTS, INC. 1230 EAST DIEHL ROAD, SUITE 200 NAPERVILLE, ILLINOIS 60563 PH: (630) 963-6026 FX: (630) 963-6027 CONTACT: JIM CANEFF, P.E.

ARCHITECT

STUDIO 21 ARCHITECTS 5012 FAIRVIEW AVENUE DOWNERS GROVE, ILLINOIS 60515 PH: (630) 789-2513 CONTACT: THOMAS FEND, R.A.

LANDSCAPE ARCHITECT

WESTWOOD ENVIRONMENTAL LLC 1N617 ARBOR AVENUE WEST CHICAGO, ILLINOIS 60185 PH: (630) 774-2561 CONTACT: CRAIG HERNAN, RLA

Sheet List Table						
Sheet Number Sheet Title						
C000	COVER SHEET					
C001	SITE SPECIFICATIONS - 1					
C002	SITE SPECIFICATIONS - 2					
C003	SITE SPECIFICATIONS - 3					
C004	SITE SPECIFICATIONS - 4/EXISTING CONDITIONS					
C101	DEMOLITION PLAN					
C200	DIMENSION PLAN					
C300	GRADING PLAN					
C400	STORMWATER POLLUTION & PREVENTION PLAN					
C500	UTILITY PLAN					
C800	DETAILS - 1					
C801	DETAILS - 2					
C802	DETAILS - 3					
C803	DETAILS - 4					
C804	DETAILS - 5					
C805	DETAILS - 6					

81 Call before you dig.

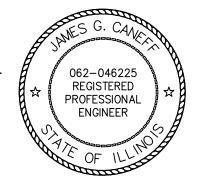
ILLINOIS LAW REQUIRES ANYONE DIGGING TO CALL JULIE AT 1-800-892-0123 AT LEAST 48 HOURS/TWO WORKING DAYS PRIOR TO THE START OF EXCAVATION AND THE PROJECT MUST BEGIN WITHIN Know what's below. 14 CALENDAR DAYS FROM THE CALL.

STATE OF ILLINOIS COUNTY OF DUPAGE SS

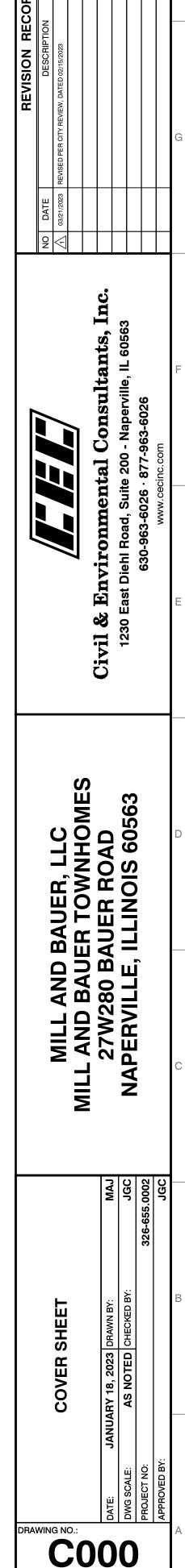
I, JAMES G. CANEFF, AN ILLINOIS PROFESSIONAL ENGINEER, HEREBY CERTIFY THAT THESE PLANS HAVE BEEN PREPARED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC., ILLINOIS LICENSED PROFESSIONAL DESIGN FIRM NO. 184.004002, LICENSE EXPIRES APRIL 30, 2023, UNDER MY PERSONAL DIRECTION FOR THE EXCLUSIVE USE OF THE CLIENT NOTED BELOW. REPRODUCTION OR USE BY THIRD PARTIES IS STRICTLY PROHIBITED WITHOUT THE WRITTEN PERMISSION OF THE UNDERSIGNED.

GIVEN UNDER MY HAND AND SEAL THIS 21ST DAY OF MARCH, 2023.

James M. Camp ILLINOIS LICENSED PROFESSIONAL ENGINEER NO. 46225 REGISTRATION VALID THROUGH NOVEMBER 30, 2023 (NOT VALID WITHOUT ORIGINAL SIGNATURE)



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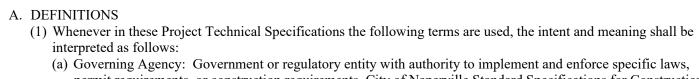


1 OF 16

PROJECT TECHNICAL SPECIFICATIONS

1. GENERAL NOTES





- permit requirements, or construction requirements. City of Naperville Standard Specifications for Construction and Standard Details are available online at
- https://www.naperville.il.us/projects-in-naperville/standard-specifications-for construction/. (b) Owner: Entity or individual for whom the project is being performed.
- (c) Contractor: Entity or individual responsible for performing construction activities and furnishing all labor, materials, equipment and other incidental work necessary for the successful completion of the project and for carrying out all duties and obligations imposed by the contract.
- (d) Engineer: Licensed professional engineering entity, or licensed professional engineer and/or authorized agent(s), who represents the Owner during the construction phase of the project work. (e) Geotechnical Engineer: Licensed professional engineering entity, or licensed professional engineer and/or
- authorized agent(s), who, in representing the Owner, is involved with the principles, properties and behavior of earth materials with regard to the project work.
- (f) Project Drawings / Plans: The drawings that define the required site development activities and improvements. (g) IDOT Standard Specifications: The current edition of the Illinois Department of Transportation's (IDOT) "Standard Specifications For Road & Bridge Construction" including all applicable current supplemental specifications and special provisions.
- B. GOVERNING REGULATIONS
- (1) All project activities and improvements shall be in accordance with the Governing Agency regulations. In the event of conflict with these Project Technical Specifications, or the indicated Reference Specifications, the Governing Agency regulations shall apply.
- C. REFERENCE STANDARDS AND SPECIFICATIONS
- (1) Site development activities and improvements, including site preparation and demolition, earthwork, sanitary sewers, storm drainage, water supply, pavement, lighting, landscape improvements, and erosion/sediment control measures shall be in accordance with the Reference Specifications indicated throughout these Project Technical Specifications. All Reference Specifications shall be incorporated into and made a part of the Project Technical Specifications. When the Reference Specifications conflict with Project Technical Specifications, Project Technical Specifications shall govern.

D. CONTRACT GENERAL CONDITIONS

- (1) These Project Technical Specifications supplement the engineering plans, the Agreement between Owner and Contractor, and other supplemental documents that comprise the overall project Contract. These Project Technical Specifications address the technical requirements of the project design as indicated on the Project Drawings (Plans). Unless specifically addressed in the Plans or these Project Technical Specifications, general conditions such as bid items, quantities, unit prices, terms of payment, change management, construction schedule, submittals, and other conditions are defined in the Agreement between Owner and Contractor.
- (2) The Contractor shall be responsible for complying with applicable Federal, State, and local requirements, together with exercising precaution at all times for the protection of persons (including employees) and property. It is the sole responsibility of the contractor to initiate, maintain, and supervise all safety requirements, precautions, and programs in connection with the work.
- (3) The Contractor shall indemnify and hold harmless the Owner and Engineer for any and all injuries and/or damages to personnel, equipment, and/or existing facilities occurring in the course of the site improvement construction work described in the Plans and these Project Technical Specifications.
- (4) The Contractor shall obtain all required construction permits in accordance with local, state, and federal
- regulations. (5) The Contractor shall guarantee all materials and workmanship for a period of 1 year following final acceptable by the Owner and the Governing Agencies.
- E. QUALITY CONTROL OF MATERIALS
- (1) Materials shall be inspected, sampled, and tested before, during, and after they are incorporated into the work. The timing of these activities shall be as appropriate for the materials being placed and the properties (composition, gradation, density, strength, compaction, etc.) being examined. The requirements for quality testing are specified within the applicable sections of these Project Technical Specifications.
- (2) Materials not conforming to the requirements of the Project Technical Specifications at the time they are used or installed will be considered unacceptable and shall be removed and replaced with acceptable materials properly installed in place at the Contractor's expense
- (3) When material test results are not within specification tolerances, the supplier shall make appropriate adjustments at its source to correct the issue.
- (4) Material inspections, sampling, and testing shall be performed by an independent testing agency/laboratory with suitable capabilities and experience. The testing entity shall be retained by Contractor or Owner, as required or as specified in the Contract Documents.
- 2. EXISTING CONDITIONS & SITE PREPARATION

A. EXISTING CONDITIONS

- (1) Existing conditions as depicted on the Plans are general and illustrative in nature. It is the responsibility of the Contractor to examine the site and be familiar with existing conditions prior to initiating construction. If conditions are encountered, before or during construction, that are significantly different than those shown on the Plans, Contractor shall notify the Engineer immediately.
- (2) It is not the Engineer's intent that any single plan sheet in the Plans fully depicts all work associated with the project. The Contractor shall be familiar with all sheets in the Plans for construction. Contractor shall similarly be familiar with all structural, architectural, mechanical, electrical, or other plans, as necessary, for the construction of the overall project.
- (3) Contractor shall protect all property corner pins, permanent monuments, and permanent benchmarks during construction. If disturbed, Contractor shall have items reset by a licenses surveyor at Contractor expense.
- (4) Contractor shall protect all existing utilities, structures, and features to remain. Any items to remain that have been disturbed or damaged as a result of construction shall be repaired or replaced at Contractor expense.

B. EXISTING UTILITIES

- (1) Underground utility information shown on the Plans may be based upon a combination of topographic survey data, field observations, historical utility maps, Owner-provided information, or other available data for the Site. The Plans constitute a representation of utility locations from best known information available to the Engineer. There is no guarantee that the utilities shown comprise all such utilities in the area, either in service, or abandoned.
- (2) Contractor shall be responsible for contacting all agencies, utility companies, and pipeline companies known or suspected to have buried cable, duct, sewer, pipes, etc., which may conflict with the project improvements to determine the location and depth of the existing utilities.
- (3) If conflicts occur after the existing utility conditions have been determined by field investigations, Contractor shall immediately notify Engineer and either: (a) Adjust the location and depth of the proposed improvements as directed by Engineer in cooperation with the
- Owner, or (b) If relocation of proposed improvements is not feasible, Contractor shall work with Owner and Engineer to
- make arrangements with the affected utility companies to have their utilities protected or relocated. (4) All utility disconnection, removal, relocation, cutting, capping, and/or abandonment shall be coordinate with the appropriate utility company / agency.
- C. EROSION / SEDIMENTATION CONTROL
- (1) Erosion/sedimentation control measures, as indicated on the Plans and as required elsewhere in these Project Technical Specifications, shall be employed during the course of construction operations and until suitable ground covers are established on all construction site areas.
- (2) Erosion/sedimentation control measures shall be properly installed and functional prior to any earth disturbing activities
- D. CONSTRUCTION ACCESS
- (1) Construction ingress-egress shall be limited to defined connections to adjacent driveways and public roadways, and as indicated on the plans and as required elsewhere in these Project Technical Specifications.
- E. TRAFFIC CONTROL
- (1) The Contractor shall provide necessary traffic control for work performed in active transportation areas, including any specific traffic control requirements as indicated on the Plans.

F. TEMPORARY CONSTRUCTION FENCING

- (1) Temporary construction fences shall be installed where indicated on the Plans and where required by the Engineer to restrict access to and from certain areas. Such fences shall be maintained during construction and removed when all work activities are completed.
- (2) Temporary construction fences shall consist of 48-inch-high plastic fabric, metal fabric, or wood lathe fence material (approved by the Engineer, prior to placement) attached to suitable metal posts that are set at 6-foot (or less) intervals and anchored at least 18 inches into the ground.
- (3) Temporary chain link construction fences shall be provided where indicated on the Plans.

G. TREE AND LANDSCAPE PROTECTION

(1) Highly visible temporary fences shall be placed around trees and landscape areas designated for protection. Vehicles, equipment, and material storage shall not be allowed within the protection zone.

- trees whenever possible.
- before a branch is removed.
- limit (edge of excavation).

H. MATERIAL DISPOSAL

- the Agreement between Owner and Contractor. therefor.
- (a) All surplus excavated materials.
- defined in the Agreement between Owner and Contractor. (4) See Earthwork Operations specification section for additional requirements.

EARTHWORK OPERATIONS

A. GENERAL

- Specifications.
- Governing Agency, as may be required.

B. SITE CLEARING

- of the project improvements
- authorizes its removal.
- site and disposed of.
- in a legal manner.
- C. TOPSOIL AND ROOTMAT REMOVAL

D. EXCAVATION

E. FILL PLACEMENT

- replaced as directed by Geotechnical Engineer.
- or otherwise, might result in site or foundation settlement. (3) Material Types For Structural Fill Purposes:
- meet the following requirements:
- (ii.) Plasticity Index greater than 12.
- (iii.) Liquid Limit less than 45.
- GP, GM, SW, SP and SC.
- inch average size.
- not be used as structural fill.
- acceptance, shall be incidental to the various pay items of the work.

(2) Vehicle and equipment parking and material storage shall not be permitted within the drip line of any tree, even if the tree is not enclosed in a protective barrier. Vehicles and equipment shall avoid travel within the drip line of

(3) Overhanging tree branches within the construction zone that are expected to come in contact with construction equipment shall be properly removed (sawcut) prior to construction in the area. Engineer approval is required

(4) Roots of trees that are to be preserved shall be pruned (cut) where indicated on the Plans or required by the Engineer. Tree roots shall be cut with appropriate root pruning equipment to a depth of 24 inches (minimum) before construction begins. The cut shall be made approximately 12 inches closer to the tree than the construction

(1) All demolition waste and construction debris shall become the property of the Contractor unless otherwise stated in

(2) The following shall be removed from the construction site and properly disposed of in a legal manner. Unless otherwise stated in the Agreement between Owner and Contractor, the cost of removal and disposal shall be included in the fixed or unit prices for the various contract pay items and no additional payment will be allowed

(b) Construction and demolition debris such as building materials, asphalt and concrete pavement materials, culvert and sewer pipe, utility and drainage structures, retaining walls (concrete, stone and timber), trees, shrubs, and miscellaneous landscape features removed during the installation of the project improvements. (3) If Contractor intends to dispose of generated construction / demolition debris materials or excavated soils at a regulated clean construction / demolition debris (CCDD) or uncontaminated soil fill operation, the contractor shall be responsible for taking all actions and preparing all documents required by 35 Illinois Administrative Code 1100 prior to transport of the materials / soil to the disposal facility. Materials and soils that do not meet CCDD and uncontaminated soil constituent limit requirements shall be disposed of at a permitted landfill facility. The cost of testing and documentation to evaluate the materials / soils and determine proper disposal requirements shall be as

(1) Except where modified by the following Project Technical Specifications, all earthwork operation and compaction requirements shall be in conformance with the material, installation and testing requirements of the IDOT Standard

(2) Earthwork shall include site clearing, tree and hedge removal, topsoil and rootmat stripping and stockpiling, earth and fill material excavation, construction of embankments and slopes, placement and compaction of non-structural fill areas, pavement areas, and structural fill areas, removal and disposal of surplus and unsuitable excavated materials, topsoil placement, and final shaping and trimming to the lines and grades indicated on the Plans. (3) Prior to commencement of earthwork operations, Contractor shall notify any Utility Protection Service or other

(1) All construction site features and items such as structures, foundations, fences, pavements, rubbish/debris, trees, shrubs, and surface vegetation shall be removed where necessary and as indicated on the Plans for the construction

(2) No tree, shrub, or surface vegetation shall be removed unless it is marked for removal or the Engineer specifically

(3) When indicated on the Plans, brush, shrubs, branches and small trees shall be shredded or chipped using suitable mechanical equipment. The resulting material shall be stockpiled on-site, as directed by the Engineer, for the Owners' future use. Tree trunks, branches, and removed stumps too large to be chipped shall be removed from the

(4) Tree stumps shall be removed by excavation or grinding to a depth of not less than 12 inches below ground surface. Material resulting from stump grinding shall be spread on the ground and excavated as part of topsoil or rootmat

(5) All items and materials not specifically required to remain on-site shall be removed from the site and disposed of

(1) Existing topsoil shall be removed from proposed pavement and building areas, non-structural fill areas, and structural fill areas. Sufficient existing topsoil shall be stockpiled for future use as topsoil replacement. When approved by Geotechnical Engineer, stripped topsoil may be used as non-structural fill to design elevations. Topsoil not used for replacement or for non-structural fill shall be removed from the site and legally disposed of, unless directed by Owner to stockpile on-site for future use. Stockpile locations shall be as authorized by Owner. (2) Topsoil supplied from off-site sources shall be natural, fertile agricultural soil material capable of sustaining vigorous plant growth. It shall contain not less than 4% nor more than 10% organic matter, as determined in accordance with AASHTO T194. It shall contain not less than 12% nor more than 50% clay and the sand content shall not exceed 55%, both as determined in accordance with AASHTO T88. The pH shall be between 5.0 and 8.0. Topsoil material shall be relatively free from large roots, sticks, weeds, brush, stones larger than 1-inch in diameter, or other litter or waste products. It shall be a loamy mixture having at least 90% passing the No. 10 sieve. (3) Within proposed pavement and building areas where there is no existing topsoil, the surface layer of organic material (friable soil containing roots or other vegetative matter) shall be removed before starting fill and compaction operations. Such removed material may be used as non-structural fill. If this material is not used as non-structural fill, it shall be removed from the site and legally disposed of.

(1) Existing earth and fill materials within the project construction limits shall be excavated as necessary to establish the elevations, contours, and drainage patterns indicated on the Plans. Excavated materials classified by Geotechnical Engineer as suitable structural fill material shall be used to construct compacted subgrades within the project building and pavement areas. Excess materials not needed for filling or for the construction of berms or embankments shall be removed from the site and legally disposed of, unless directed by the Engineer or Owner to stockpile on-site for future use. Stockpile locations shall be as authorized by the Owner

(2) Rock materials within the project construction limits shall be excavated to a minimum of 6 inches below subgrade levels of proposed pavements and pipe bedding. Rock materials shall be removed to a minimum of 18 inches below building and structure foundations. Rock materials shall be defined as boulders one cubic yard or greater in volume and all materials in ledges, bedded deposits, and conglomerate deposits that exhibit the physical characteristics of rock, as determined by Geotechnical Engineer. Excavated rock materials not used for filling or for the construction of berms or embankments shall be removed from the site and disposed of, unless directed by the Engineer or Owner to stockpile on-site for future use. Stockpile locations shall be as authorized by the Owner. (3) Excavated materials classified by the Geotechnical Engineer as unstable or unsuitable for structural fill purposes and not needed for non-structural fill, shall be removed from the site and legally disposed of, unless directed by the Engineer or Owner to stockpile on-site for future use. Stockpile locations shall be as authorized by the Owner. (4) Excavations shall be maintained in a well-drained condition at all times. Temporary drainage (dewatering) facilities shall be provided where surface runoff is not possible or effective. Such facilities shall be operated during the entire course of earthwork operations. Dewatering facilities shall include appropriate erosion and sediment control measures, as indicated elsewhere in these Project Technical Specifications. Unless otherwise stated in the Agreement between Owner and Contractor, the cost of temporary drainage facilities and dewatering activities shall be considered incidental to the various pay items of the work.

(1) Before placing any fill within pavement or structural areas, the existing subgrade shall be compacted as indicated in the "Compaction" section of these Project Technical Specifications. Pavement subgrade areas shall be proof-rolled to check for soft, unstable, or otherwise unsuitable materials and approved by a Geotechnical Engineer prior to paving operations. Where possible, proof-rolling shall be accomplished with at least four passes of a fully loaded tandem axle dump truck. Below-grade footing or foundation areas shall be inspected by a Geotechnical Engineer prior to foundation installation. Soft, unstable, or otherwise unsuitable materials shall be removed and

(2) Structural fill materials shall be soil materials that can be compacted to develop a stability satisfactory to the Geotechnical Engineer. Structural fill materials shall not contain frozen material or any material which, by decay

(a) Suitable Fine-Grained Soils - Soil materials that comply with ASTM D2487 Soil Classification Group CL and

(i.) Laboratory maximum dry density when determined in accordance with ASTM D698.

(iv.) Particle size distribution with greater than 50% passing the No. 200 sieve.

(b) Suitable Coarse-Grained Soils - Soil materials that comply with ASTM D2487 soil classification groups GW, (c) Bituminous concrete and granular base materials removed from existing pavement areas may be used as structural fill, subject to gradation, placement, and compaction control by Geotechnical Engineer. (d) Impervious clay layers (liners) shall be constructed of fine-grained soils within the CL classification that have a

Plastic Index greater than 15 and a moisture content greater than optimum and are free of stones bigger than 1 (4) Unsuitable Fill - Soil materials that are not in conformance with the stated criteria for structural fill material shall

(5) Installed fill layers softened or otherwise damaged by rain, ponded water, or construction activities shall be scarified, dried, and recompacted, or removed and replaced. This work, even if performed after lift or fill

(6) Unsuitable Subgrade Conditions:

- (a) Within areas of new or reconstructed pavements, specific requirements for removal and remedial procedures shall be as directed by Geotechnical Engineer. Soft or otherwise unacceptable subgrade materials shall typically be removed to a depth where the minimum in situ unconfined compressive strength is 2.0 tsf and the in situ moisture content is no more than 3 percentage points above the optimum moisture content per ASTM D1557. When the depth of unsuitable material is excessive and does not warrant complete removal, remedial procedures will typically require partial removal of unsuitable subgrade material, placement of a geotextile fabric (MIRAFI 600X or approved equal), and sufficient aggregate fill (IDOT CA-1 or alternate acceptable granular material) to the required subgrade level. Depths of unsuitable subgrade removal will be as directed by the Geotechnical Engineer. Alternative procedures may be required depending on the conditions encountered. (b) Removal of unsuitable materials and installation of replacement fill material under and adjacent to proposed
- buildings and structures shall be as specified by Geotechnical Engineer. (c) Payment for removal and replacement of unacceptable materials and the installation of geotextile fabric and aggregate fill shall be as indicated in the agreement between Owner and Contractor. Such payment shall include all work necessary for removal and disposal of unsuitable materials, supply and placement of fabric and aggregate materials, supply, placement and compaction of additional structural fill material, if required,
- and any dewatering required during these activities. (7) Where necessary, structural fill materials shall be placed and compacted under proposed pavements, buildings, and structures. Compacted structural fill shall be placed to required subgrade elevations.
- (8) Unsuitable materials may be placed within non-structural fill areas only where fill is required to obtain final subgrade levels. If borrow pits are used to obtain structural fill material, unsuitable materials may be used to bring the borrow areas to grade. Placement of such materials shall be limited to areas and depths authorized by the Geotechnical Engineer. If sufficient acceptable placement areas are not available, remaining unstable and unsuitable materials shall be removed from the site and legally disposed of.
- (9) If necessary, Contractor shall provide sufficient suitable structural fill material from off-site sources as necessary to complete earthwork operations to the required levels and elevations indicated on the Plans. Structural fill materials shall be in conformance with the stated criteria for structural fill. Contractor shall provide the Geotechnical Engineer access to the proposed off-site sources to take samples and evaluate materials.
- F. FILL COMPACTION
- (1) Fill materials shall be placed in layers (lifts) and compacted in accordance with the following specified requirements. Lift thickness shall not exceed 8 inches (loose condition) and the fill material (when compacted) shall have a moisture content within the limits of -1 to +3 percentage points of optimum value. Specific lift thickness and moisture content shall be as determined by the Geotechnical Engineer to obtain the required compaction and strength of material in place.
- (2) Cohesive soils and well-graded aggregate mixtures shall be sampled and tested to determine the laboratory maximum density and optimum moisture content (control values) of the material. The test method shall be the ASTM Standard as indicated below.
- (3) Free-draining cohesionless soils and aggregate mixtures shall be sampled and tested to determine the laboratory relative density (control value) of the material.
- (4) Laboratory density and moisture tests shall be performed to determine the control values for each type and source of material to be used. One test of laboratory maximum density and optimum moisture content shall be performed for each 300 cubic yards of fill and backfill material, and when any change in material occurs that may affect the maximum density or optimum moisture content values.
- (5) Aggregate supplier shall provide a written certification that the aggregate gradation and quality conforms to the project requirements. If a certification is not provided, gradation and quality tests shall be performed for each 300 cubic yards of stockpiled or in-place source material.
- (6) Non-Structural Areas: The top 6 inches of existing subgrade and all layers of cohesive soil and well-graded granular fill materials shall be compacted to at least 90% maximum dry density, as determined by the Standard Proctor Method (ASTM D698). Free-draining aggregate and soil materials (ASTM D4253 & D4254) shall be placed and compacted as specified by the Geotechnical Engineer.
- (7) Pavement Areas: The top 6 inches of existing subgrade and all layers of cohesive soil and well-graded granular fill materials shall be compacted to at least 95% maximum dry density, as determined by the Standard Proctor Method (ASTM D698). Free-draining aggregate and soil materials (ASTM D4253 & D4254) shall be placed and compacted as specified by Geotechnical Engineer
- (8) Building Areas: The top 6 inches of existing subgrade and all layers of cohesive soil and well-graded granular fill materials shall be compacted to at least 95% maximum dry density, as determined by the Standard Proctor Method (ASTM D698). Free-draining aggregate and soil materials (ASTM D4253 & D4254) shall be placed and compacted as specified by Geotechnical Engineer.
- (9) Impervious Clay Liners: All layers of clay fill material shall be compacted to at least 92% maximum dry density, as determined by the Standard Proctor Method (ASTM D698).
- (10) Soil and aggregate fill materials compacted in place shall be field tested to determine in-place density and moisture values. A nuclear density gauge shall be used in accordance with ASTM D6938 to measure in-place density/moisture values of cohesive soils and well-graded aggregate materials, unless Geotechnical Engineer determines other testing equipment is more suitable for the type of material being tested. The dry unit weight of the in-place compacted material shall be compared to its control value to determine the percent compaction achieved.
- (11) Frequency of fill material moisture content and compaction tests shall be as follows, unless otherwise adjusted by Geotechnical Engineer. (a) When using materials from exposed stockpile, excavation, or borrow area sources, a minimum of two moisture
- content tests per day shall be performed for each type and source of material being placed during stable weather. During unstable weather, moisture content tests shall be performed as determined by Geotechnical
- (b) Within pavement areas, one in-place density test shall be performed for each 6,000 square feet, or fraction thereof, of each lift of material placed during each day.
- (c) Under building/structure ground slabs and mat foundations, one in-place density test shall be performed for each 3,000 square feet, or fraction thereof, of each lift of material placed during each day. (d) Under building/structure wall footings, one in-place density test shall be performed for each 100 lineal feet, or
- fraction thereof, of each lift of material placed during each day. (e) Under building/structure column footings, one in-place density test shall be performed for each footing, of each lift of material placed during each day.
- G. MOISTURE CONTROL
- (1) Where the subgrade, or other layer of soil, must be moisture-conditioned before compaction, the top 12 inches of the material shall be scarified or disked and then dried or moistened as required to achieve compaction. Water shall be applied uniformly in a manner that prevents free water from appearing on the surface during, or subsequent to, compaction operations. Material that is too wet to air dry and compact to the specified density shall be removed and replaced.

H. GRADING TOLERANCES

- (1) Surface elevations shall be within the following indicated tolerances. (a) Under vehicle, pedestrian, and drainage control pavements, and building floor slabs: -0.08 to +0.04 (b) Drainage swales and stormwater basins: -0.10 to +0.10
- (c) Embankments and slopes other than (b) above: -0.15 to +0.15
- (2) Unless otherwise noted, grades and contours shown on the Plans are final topsoil and pavement surface elevations. All excavated and filled areas not within the limits of buildings, structures, or pavements shall be graded to 6 inches below the indicated elevations to allow for topsoil placement, unless otherwise indicated on the Plans.
- RESTORATION
- (1) Previously prepared earth subgrade areas that are damaged by soil erosion or construction activities shall be repaired and graded to design contours and elevations before placement of pavement materials or topsoil. (2) Areas not otherwise subject to disturbance that are damaged by movement or storage of construction vehicles, equipment, or materials, or other construction activities such as the discharge of water from the construction site, shall be restored to original conditions.
- TOPSOIL PLACEMENT
- (1) Topsoil shall be placed on all of the following areas. Minimum topsoil depth shall be 6 inches unless otherwise indicated on the Plans. Topsoil placement shall include grading and shaping to required final contours and elevations.
- (a) All project grass, landscape, or other vegetated areas indicated on the Plans. (b) All unpaved offsite areas damaged by installation of project associated utilities or pavements.
- (c) All unpaved offsite areas disturbed by project associated activities. (2) Within new wetland areas, topsoil shall be placed in a manner to minimize compaction of the material. Minimum lift thickness shall be 12 inches unless otherwise indicated on the Plans. The placed material shall be disked or tilled to a depth of at least 8 inches. Once the topsoil is placed, no vehicles except the disking/tilling equipment
- shall be allowed on the material. (3) If required or as indicated on the Plans, Contractor shall obtain and provide necessary topsoil material from off-site sources (any stockpiled topsoil on the site shall also be used). The suitability of material supplied by Contractor shall be as defined elsewhere in these Earthwork Specifications. Contractor shall provide the Geotechnical Engineer access to proposed off-site sources to take samples and evaluate the materials.
- K. DISPOSAL OF MATERIALS
- (1) Surplus soil materials remaining after completion of fill placement and construction of berms shall be removed from the site and disposed of in legal manner, unless directed by the Owner to stockpile on-site for future use. Stockpile locations shall be as authorized by the Owner.
- (2) Removal and disposal of existing utility pipes and structures, construction debris, or other obstructions which interfere with proposed construction and which are not indicated in the Agreement between Owner and Contractor as a separate pay item shall be considered incidental to the earthwork operations.
- (3) Contractor shall be responsible for finding locations and obtaining approvals for the off-site disposal of demolition and construction debris, rubbish, pavement materials, shrubs, trees, and surplus, unsuitable excavated soil materials. Owner shall be advised, in writing, of the specific locations of all off-site disposal sites.

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4. SANITARY SEWERS, STORM DRAINAGE AND WATER SUPPLY SYSTEMS	
A. GENERAL	
 (1) REFERENCE SPECIFICATIONS (a) Sanitary sewers, storm drainage, and water supply improvements shall be constructed in accordance with the 	H
material, installation and testing requirements of the "Standard Specifications for Water and Sewer Main Construction in Illinois," current edition; except where said requirements are modified by these Project	
Technical Specifications.	
(b) References to "IDOT" requirements or standards shall mean in conformance to the material, installation, and testing requirements of the current edition of the IDOT Standard Specifications.	
(2) UNSUITABLE SOIL CONDITIONS(a) When unsuitable soil conditions are encountered under pipes or structures that require the removal of	
unsuitable materials below the depth of the standard bedding, the Contractor shall replace the material removed with granular material approved by the Geotechnical Engineer. Depth and extent of removal shall be as	
determined by the Geotechnical Engineer. (b) Unless defined otherwise in the Agreement between Owner and Contractor, payment for unsuitable soil	
removal shall be made at the contract unit price per cubic yard of soil removed and replaced with granular	
material. Unless defined otherwise in the Agreement between Owner and Contractor, the cost of removing and disposing of the unsuitable material and supplying and placing the granular fill and any dewatering required	
during these activities shall be considered incidental to the various pay items of the work. (3) PIPE BEDDING, HAUNCH SUPPORT & INITIAL BACKFILL	G
(a) Concrete pipe, clay pipe, ductile iron pipe, cast iron pipe, and other types of pipe classified as rigid shall be placed on a 4-inch layer of compacted granular bedding material. This granular material shall also be placed on	
each side of the pipe (haunch support) from the top of bedding up to the horizontal midpoint of the pipe. Granular bedding and haunch material shall consist of graded crushed stone 1/4 inch to 3/4 inch in size (IDOT	
equivalent CA-11), unless otherwise specified on the Plans.	DATE 03/21/2023
(b) Thermoplastic pipe (e.g., PVC and HDPE), corrugated metal pipe, and other types of pipe classified as flexible shall be supported with granular bedding, haunching, and initial backfill in accordance with ASTM D2321,	
except as hereby modified. Class I embedment material (angular graded stone) 1/4 inch to 3/4 inch in size (IDOT equivalent CA-11) shall be used as bedding, haunching, and initial backfill material and initial backfill	
material shall be installed to 12 inches above the top of the pipe. (c) Where a pipe projects from an embankment or natural ground, the last 3 feet of bedding and backfill at the pipe	
end shall be impervious material compacted in place.	ಲ್ಲೆ
(d) Unless otherwise stated in the Agreement between Owner and Contractor, the cost of providing and placing granular bedding, haunch support, and initial backfill material shall be included as part of the fixed price or	
unit prices for sewer / culvert or main construction of the sizes and types specified. (4) GRANULAR BACKFILL	ots, I 60563
(a) Selected granular material shall be used to backfill excavated trenches under all existing and proposed vehicle pavements and sidewalks, trenches with edges closer than 2 feet from edges of existing and proposed vehicle	
pavements and sidewalks, and where specifically indicated on the Plans. Selected granular material for	i ie It
backfilling trenches shall be IDOT Gradation CA-6, unless otherwise indicated.(b) Selected granular backfill material placed in trenches under existing and proposed pavements shall be placed	LSU Serv
in uniform layers not exceeding 6 inches (loose measured) and compacted with mechanical equipment to 95% of the standard proctor density in accordance with the applicable AASHTO or ASTM requirements.	
(5) STRUCTURE ADJUSTMENT(a) Adjustments may be necessary to ensure that frames and grates match the elevation of the surrounding	
pavement or ground surface. Preformed adjusting rings of the proper dimensions needed to mate the frame to	Civil & Environmental C 1230 East Diehl Road, Suite 200 - 630-963-6026 · 877-9 www.cecine.com
the precast structure shall be used. No more than 12 inches of vertical adjustment may be made using the minimum practical number of individual rings.	ironmen 630-963-6026 www.ce
(b) All rings shall be High Density Polyethylene Plastic (HDPE), Recycled Rubber, High Density Expanding Polystyrene, Expanded Polypropylene (EPP), or other material as approved by the City Engineer. Precast	53-6 %
concrete rings, bricks, rocks, shims, or concrete blocks will not be allowed. Tapered adjusting rings shall be required when the frame will need to match the slope of the roadway.	
 (c) A resilient, flexible, non-hardening, preformed bituminous mastic material, Conseal 102B or approved equal, shall be used between the cone or top barrel section of the structure and the adjusting rings. A thick bead of 	03ieh
non-hardening elastomeric joint sealant conforming to ASTM C-920, Type S, Grade NS, shall be applied	∃ ast [
between all individual rings, and between the adjusting rings and the frame. The sealant or mastic material shall be applied in such a manner that no surface water or ground water inflow can enter the structure.	e a la l
(d) All storm sewer structure frames without inside flanges shall be shaped with hydraulic cement or elastomeric joint sealant to form a fillet to the structure or adjusting rings and to maintain water-tightness.	il &
(e) Frame adjustments shall be completed in accordance with Sections 602 and 603 of Standard Specifications for Road and Bridge Construction, prepared by the Illinois Department of Transportation, latest edition, except as	
noted herein.	
(f) Structure adjustments shall be included in the prices of the utility structures being installed or modified and will not be paid for separately.	
(6) MARKER POSTS(a) Sewer and water main structures, valve boxes, and the end location of sewer stubs and building services shall	
be marked with a 4 x 4 x 8' wood post. Four feet of the post shall stand aboveground. The top 6 inches of the post shall be painted to identify the type of utility (sanitary - orange; storm - yellow; water - blue).	
(b) Providing and installing marker posts shall be incidental to the cost of sewer and water main construction.	S S S S S S S S S S S S S S S S S S S
B. SEPARATION OF WATER MAINS AND SEWERS	93 UE
 (1) HORIZONTAL SEPARATION (a) Water mains shall be located at least 10 feet horizontally (edge to edge) from existing or proposed sanitary 	
sewers and storm sewers. (b) Water mains may be located closer than 10 feet to a sewer when:	
(i.) Local conditions prevent a lateral separation of 10 feet and	
(ii.) The bottom of the water main is at least 18 inches above the top of the sewer and(iii.) The water main is either in a separate trench or in the same trench on an earth shelf located to one side	
of the sewer. (c) When it is impossible to meet (i) or (ii) above, the sewer shall be encased in a water-tight pipe or constructed	
of pressure pipe meeting water main standards. The sewer shall also be pressure tested to maximum expected surcharge head before backfilling.	
(d) These requirements shall also apply to water service lines.(2) VERTICAL SEPARATION	
(a) Whenever a water main crosses a sanitary sewer or a storm sewer, the water main shall be separated from the	
sewer so that the bottom of the water main is at least 18 inches above the top of the sewer. This vertical separation shall be maintained for that portion of the water main located within 10 feet horizontally (measured	
perpendicular, either direction) of the O.D. of the sewer crossed. (b) Whenever the required 18-inch vertical separation cannot be maintained between a sewer and a water main, the	
 (c) whenever use required to men vertical separation cannot commanded occurrent a second and a water main, including water main shall be protected by means of one of the following methods: (i.) Construct the sewer of pressure pipe meeting water main standards for a distance of 10 feet each side 	AN MIL
(measured perpendicular) of the O.D. of the water main.	
(ii.)Install either the sewer or water main within a watertight casing pipe for a distance of 10 feet each side of the crossing (measured perpendicular to the line not provided with the casing pipe). Seal both ends of the	
casing with hydraulic grout. (iii.) The method to be used at each specific location shall be as indicated on the Plans. In the event that a	
clearance problem is not discovered until after construction is underway, Engineer shall determine which method to use.	
(c) A vertical separation of 18 inches between the bottom of the sewer and the top of the water main shall be	
maintained wherever a water main crosses under a sewer. (d) Construction requirements (regarding vertical separation, materials and structural support) at sewer-water main	MAJ JGC JGC
crossings shall be in conformance with the Standard Specifications for Water and Sewer Main Construction in Illinois.	922
(e) These requirements shall also apply for water service lines.	326
C. SANITARY SEWERS SYSTEMS (1) See City of Nanerville Department of Public Utilities (DPU) Water/Wastewater General Notes	
(1) See City of Naperville Department of Public Utilities (DPU) Water/Wastewater General Notes.	ທ N
D. STORM DRAINAGE SYSTEMS	
(1) See City of Naperville - Transportation, Engineering, and Development (TED) Business Group Plan Notes for	
 (1) See City of Naperville - Transportation, Engineering, and Development (TED) Business Group Plan Notes for Development Projects. E. WATER SUPPLY SYSTEMS 	
 See City of Naperville - Transportation, Engineering, and Development (TED) Business Group Plan Notes for Development Projects. WATER SUPPLY SYSTEMS See City of Naperville - Department of Public Utilities (DPU) Water/Wastewater General Notes. 	
 See City of Naperville - Transportation, Engineering, and Development (TED) Business Group Plan Notes for Development Projects. WATER SUPPLY SYSTEMS (1) See City of Naperville - Department of Public Utilities (DPU) Water/Wastewater General Notes. PAVEMENT CONSTRUCTION 	PECIFICATION
 See City of Naperville - Transportation, Engineering, and Development (TED) Business Group Plan Notes for Development Projects. WATER SUPPLY SYSTEMS See City of Naperville - Department of Public Utilities (DPU) Water/Wastewater General Notes. 	PECIFICATION
 See City of Naperville - Transportation, Engineering, and Development (TED) Business Group Plan Notes for Development Projects. E. WATER SUPPLY SYSTEMS (1) See City of Naperville - Department of Public Utilities (DPU) Water/Wastewater General Notes. 5. <u>PAVEMENT CONSTRUCTION</u> A. GENERAL 	ECIFICATION B, 2023 DRAWN BY: NONE CHECKED BY:

(2) Pavement markings and markers, and traffic control signs and devices, shall be provided, installed, and removed in accordance with the requirements of the IDOT Standard Specifications, except where said requirements are modified by the following Project Technical Specifications.

RAWING NO.

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B. PAVEMENT REPLACEMENT/REPAIR

(1) Existing pavements removed for excavation purposes or damaged by construction operations shall be removed and replaced in conformance to the material and construction requirements of the IDOT Standard Specifications and the requirements of the subsequent portions of this specification section.

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	concrete pavements shall be sawcut prior to excavation. Damaged or jagged pavement edges shall be		mixture) in accordance with IDOT Specification
(3) Replacement	ut and removed prior to installing new pavement. It material types and thickness shall be as indicated on the Plans.		PC CONCRETE CURING (1) PCC pavement and sidewalks to receive a pro (2) of IDOT Specifications Article 1020 13 (9)
(4) Pavement re Contractor's	epair limits shall be as indicated on the Plans. Pavement repairs outside of these limits shall be at the expense.		(3) of IDOT Specifications Article 1020.13 (v(2) Concrete surfaces not to receive such treatment(3) The curing period in all cases shall be at least
C. SUBGRADE P	REPARATION cement of pavement material, all subgrade areas shall be proof-rolled to check for possible unsuitable	((4) Hot or cold weather concrete curing methods for hot and cold weather respectively.
unstable soi	l conditions. Proof-rolling shall be witnessed by the Geotechnical Engineer. Should unsuitable or terial be encountered within pavement areas, unsuitable/unstable material shall be removed to a depth		PAVEMENT MARKINGS AND MARKERS
as described	I in the Earthwork Section of these Project Technical Specifications. Such materials shall be replaced e structural fill material and compacted in place as specified by Geotechnical Engineer. When comple	(Pavement markings and markers shall be as in 4-inch-wide lines. Stop lines on private drives
	he unsuitable material is not warranted or feasible, remedial procedures (as required by Geotechnical		 Pavement markings on driveways and parking Standard Specifications. Materials, installation
(2) Installed str	uctural fill and excavated subgrade damaged by construction traffic, ponded water, or other causes ractor's control shall be replaced or repaired at Contractor's sole expense.	(Specifications Section 780. Required marking (3) Pavement lane and auxiliary markings on pub
D. PAVEMENT N		,	to IDOT Standard Specifications. Materials, in Standard Specifications Section 780.
	ement types, materials, and thicknesses shall be as indicated on the Plans. base courses shall be Aggregate, Type B (100% crushed). Aggregate gradation shall be CA-6, except	((4) Pavement marking words and symbols shall c Manual on Uniform Traffic Control Devices a
	eable base course material gradation is specified on the Plans. Aggregate materials shall conform to fications Article 1004.04, except that the use of crushed concrete shall not be allowed.	((5) Raised reflective pavement markers shall be p shall meet the requirements of IDOT Specific
except when	base course material shall be Aggregate, Type C (100% crushed). Aggregate gradation shall be CA-7, e alternate material gradation is specified on the Plans. Aggregate materials shall conform to IDOT	((6) Existing markings and markers shall be removed in accordance with IDOT Specifications Section
(4) Hot-mix asp	ns Article 1004.04, except that the use of crushed concrete shall not be allowed. halt (HMA) pavement materials and mixtures shall be in accordance with Sections 406, 407, 1030 an		ACCESSIBLE PARKING SPACES
(5) HMA Mixta	IDOT Standard Specifications. are Requirements	(Accessible parking spaces shall be in accorda be 16 feet wide and be provided complete wit
Item Surface			standard accessible symbol painted on the pay parking" with accessible symbol, R7-8a "van
	naterials shall meet or exceed the following strength requirements:	(2) Required signs (R7-8, R7-8a and R7-I101) sh parking space, and no more than 5 feet horizo
Granula	tte, Type B (100% crushed) 80 IBR r Material, Type B 30 IBR		be a minimum of 4 feet above finished grade. (3) Signposts shall conform to AASHTO and IDC
cold milling	surface course mixtures may contain reclaimed asphalt pavement (RAP) material resulting from the or crushing of existing hot-mix asphalt (HMA) pavements. Use of RAP material in new pavement		(4) The pavement area behind the white accessible the diagonals within the access aisle of the space(5) Pavement slopes across accessible parking state
(8) Bituminous	l be in conformance with applicable IDOT requirements. prime coats shall be in accordance with IDOT Specifications Article 406.05. Application rates shall b vith the required rate to be as specified by Engineer:	e	TRAFFIC CONTROL SIGNS
HMA b	inder or base - 0.05 to 0.10 gallons/S.Y. ate base - 0.25 to 0.50 gallons/S.Y.		 Traffic control signs shall be provided as india material, and installation requirements of the
(9) Portland cer	nent concrete (PCC) for curbing, vehicle pavements, sidewalks and support slabs on-grade shall IDOT requirements (3500 psi at 14 days, 5% to 8% air-entrainment) and shall be properly cured		Specifications Section 720. Signposts shall be Specifications Section 729.
in-place. Ve	hicle pavements shall be Class PV. Curbing, sidewalks and support slabs shall be Class SI. ing shall have expansion joints complete with dowel bars (AASHTO M227), dowel bar assemblies an	d	1
preformed j	oint filler (AASHTO M213). PCC curbing shall contain continuous reinforcing bars (AASHTO M31) material under PCC pavements and curbing shall be Subgrade Granular Material, Type B (100%		L EROSION / SEDIMENT CONTROL AND SI
crushed). (12) PCC pave	ments other than sidewalks shall be provided with contraction, construction, and isolation joints		GENERAL (1) Contractor shall take suitable and sufficient m
elastomeric	th load transfer dowel assemblies, tie bars, and joint material (poured sealer, preformed filler, or compression seal) as indicated on the Plans. Joint components, materials, and construction shall be in		and site development activities. These measur and standards described in the Illinois Environ
(13) Welded w	e to applicable IDOT Standard Specifications and IDOT Standard 420001. rire fabric shall be placed in PCC pavements where indicated on the Plans. Welded wire fabric shall	(Manual." (2) Specific erosion/sediment control and restorat
(14) Where inc	the requirements of AASHTO M55. licated on the Plans, PCC pavement shall be reinforced with polypropylene fibrillated fibers (ASTM		Project Technical Specifications, and as descr required) prepared for the Project.
reinforceme	e 111, 4.1.3) specifically manufactured to an optimum gradation for use as concrete secondary nt. Fibers shall be added to the concrete mix at the rate of 1.5 pounds per cubic yard. Mixing times an		(3) If disturbance exceeds 1 acre and a SWPPP has shall comply with the requirements and proce
-	be as specified in ASTM C94.	(System) Permit No. ILR10, issued by the IEP. (4) Site clearing and excavation shall not proceed
(1) Hot Mix As			restoration activities is prepared by Contracto control erosion and sediment problems by min
Technic	A supplier shall provide a written certification that the HMA material conforms to the Project al Specifications. d in-place percent compaction values shall be based on the representative laboratory densities provide	d (and establishing permanent ground covers as indicating planned sequence and extent of spe (5) Contractor responsibilities shall include the m
by the H	IMA supplier for the various HMA design mixes to be installed. allation of all HMA pavement components (base, binder, and surface courses) and placement lifts sha		until all specified vegetative covers within the ceased.
be inspe	cted and tested to verify compliance with the specified material compaction, temperature, and lift s requirements.	((6) Construction dewatering operations shall be d will meet State of Illinois water quality standa
(d) One in-p	place density test, to determine in-place percent compaction, shall be performed for each 2,000 square fraction thereof, of each lift of material placed during each day.		B, Illinois Administrative Code.(7) Installation and maintenance of all required en
(e) Measure	ements to determine HMA temperatures at time of compaction and lift thicknesses shall be performed iodic basis during the HMA installation operations. The number of temperature and lift measurements		inspection by the Governing Agency. Deficient Agency.
shall be	not less than the number of density tests performed during the operations. oject Technical Specifications require pavement cores of the completed work, one core shall be taken	B. S	STABILIZATION PRACTICES
(2) Portland Ce	4,000 square feet of the installed pavement area. ment Concrete Pavement	(Contractor shall limit removal of existing veg project work. Structural sediment barriers sha
Project '	crete supplier shall provide a written certification that the concrete mix is in accordance with the Fechnical Specifications.		Plans. Vegetation within areas that are protect construction.
and air o	e delivered to the work site shall be field-tested before placement to verify that the slump, temperature content values of the material complies with the Project Technical Specifications. Air content, slump,	e, (2) Exposed soil surfaces shall be stabilized with prevent effective use or placement of such me
conform	perature shall be performed each time a set of test cylinders is prepared. If the air content does not to the Project Technical Specifications, additional tests shall be performed on each truckload of	(barrier fencing and sediment traps will be req (3) Surface stabilization measures shall be initiate
the max	until the air content is determined to be within the specified tolerance range. If slump values exceed imum specified amount, when excessive variation in the workability of the concrete is observed, or		or have temporarily ceased on any portion of Stabilization of disturbed areas must be initiat
tests sha	cessive crumbling or clumping is observed along the edges of slip-formed concrete, additional slump Il be performed on the same, or subsequent, truckloads until slump is determined to be within the 1 tolerance range.	,	earth disturbing activities and shall be comple of stabilization work in an area.(4) If construction activity is anticipated to temport
(c) Represe	ntative samples of the concrete mix shall be placed in a set of five standard cylinders for compressive testing. The cylinder sets shall be delivered to the material testing laboratory within 32 hours of takin		stabilization measures do not have to be initia erosion and sediment control requirements of
the sam	bles. Two cylinders shall be tested for compressive strength 7 days after the samples were taken. Two s shall be tested 14 days after the samples were taken. One cylinder shall be held in reserve. A sample	<u> </u>	stabilization measures by the specified time at precluded by weather conditions, stabilization
set (five	cylinders) for strength testing shall be taken for each class of concrete not less than once a day, nor once for each 100 cubic yards of each class of concrete poured in place.		(5) Temporary seeding shall be employed when n When seasonal weather conditions prevent see
	e delivered to the work site shall be subject to Governing Agency limitations for haul time and materia		blanketed or mulched with suitable material a (6) Areas with permanent vegetative cover seedir
F. COMPACTION			SEDIMENT BARRIERS
(1) Aggregate b indicated in	base course and HMA material shall be placed in layers and compacted. Layer thicknesses shall be as the applicable IDOT Standard Specifications for the various pavement components and materials.	(Temporary sediment barriers shall be installed been stabilized with grass or other types of per
Where layer Engineer to	thickness variation is permitted, thicknesses installed shall be as determined by the Geotechnical obtain required compaction and strength of material in place.	(coir fiber logs, or other devices as indicated ofWork area perimeter temporary sediment barr
(2) Aggregate b density dete	base course and granular sub-base materials shall be compacted to not less than 95% maximum dry rmined in accordance with the Standard Proctor Method (ASTM D698).	(earthwork operations. (3) Storm sewer systems shall be installed as soon
placed and	ng granular materials (porous granular embankment and permeable base course material) shall be compacted as specified by the Geotechnical Engineer.		to a subgrade level 12 inches below the struct on the Plans.
compacted i	r and surface course mixtures, HMA base course, and HMA shoulder mixtures shall be placed and n accordance with the requirements of the applicable IDOT Standard Specifications.	((4) Geotextile filter fabric sediment barriers shall surface runoff. Silt fence or compost filter soc filter febric barriers error the parts is in ffection.
	base course material shall be graded and compacted the same day it is placed on the subgrade.		filter fabric barriers over the grate is ineffective the Plans. Structures requiring sediment barriers
(1) Surface elev	D SURFACE TOLERANCES rations of completed aggregate bases and sub-bases shall not exceed design surface elevations by more b. Surface elevations less than design value shall be corrected by adding aggregate or by installing	e ((5) All sediment barriers shall be replaced or clear ineffective All sediment traps shall be cleane
additional th	h. Surface elevations less than design value shall be corrected by adding aggregate or by installing nickness of required HMA or PCC pavement material. Such additional HMA or PCC pavement shall be Contractor's expense.)e	ineffective. All sediment traps shall be cleane effectively.
(2) Allowable f	Contractor's expense. inal surface variations of HMA and PCC pavements (tested with a 10-foot straightedge) shall not nch, but Engineer has the right to require corrective measures when variations less than the specified		CONSTRUCTION INGRESS-EGRESS (1) Construction ingress-egress shall be limited to
tolerance ca	use obvious drainage problems. Corrective measures required when the allowable variation is exceedendicated in IDOT Specifications Articles 407.09 and 420.10.		where indicated on the Plans. Construction ex debris on the public road pavement. Mud and
	HICKNESS TOLERANCE	1	required by the Public Roadway Authority.Private roadways, driveways, parking lots, etc.
	nents that have a thickness deficiency of more than 10% shall be removed and replaced if required by		 mud and debris daily as needed to keep the pa Temporary aggregate pavements for ingress-e
(2) PCC pavem	ents (including sidewalks and slabs on-grade) that have a thickness deficiency of more than ½ inch or ever is less) shall be removed and replaced if required by Engineer.		the Plans. These pavements shall be maintained during the entire construction project.
	on of pavement thickness shall be as indicated in IDOT Specifications Articles 407.10 (HMA) and	((4) Temporary pavement thickness, aggregate gra indicated on the Plans.
	ent removal and replacement shall be at Contractor's expense.	((5) The upper 6 inches of temporary aggregate ac activities and replaced with 6 inches of topsoi
	E PROTECTIVE COAT e pavements and PCC sidewalks immediately adjacent to vehicle pavements shall be given a linseed o	il	accordance with the Plans.
	· · · · · · · · · · · · · · · · · · ·		

PC CONCRETE PROTECTIVE COAT

 PCC vehicle pavements and PCC sidewalks immediately adjacent to vehicle pavements shall be given a linseed oil mixture protective coat treatment (two coats, each at an application rate of not more than 50 S.Y. per gallon of

E. WATER DIVERSION AND DEWATERING

ations Article 420.18 and Section 1023.

- rotective coat treatment shall be cured by means of Methods (1), (2), or (waterproof paper, polyethylene sheeting, or wetted burlap). hent can be sealed with membrane curing compound - Method (4). st 72 hours.
- Is and time periods shall be in accordance with ACI 305 and ACI 306
- indicated on the Plans. Parking spaces shall be defined with
- res shall be 24 inches wide. Ing areas shall be of a paint suitable for such use according to IDOT ion, and equipment shall meet the requirements of IDOT Standard
- ngs shall be as indicated on the Plans. ublic roadways shall be reflectorized thermoplastic material conforming
- , installation, and equipment shall meet the requirements of IDOT
- l conform to the dimensions and spacing specified in the Illinois s and on IDOT Standard 780001.
- e provided where shown on the Plans. Marker materials and installation fications Section 781. noved as necessary to delineate realigned traffic lanes. Removal shall be
- ction 783.
- dance with Illinois Accessibility Code requirements. Each space shall with a painted striped aisle (8 feet wide with diagonal 4-inch lines), a pavement, and standard post- or wall-mounted signs (R7-8 "reserved an accessible" and R7-I101 "\$250 fine"). shall be mounted on a post or wall located at the front center of the
- zontally from the front of the space. The bottom of the lowest sign shall le.
- DOT standards for "break-away" design. ible symbol shall be painted blue. The markings outlining the space and space shall be of yellow paint.
- stalls and adjoining access aisles shall be maximum 2%.
- dicated on the Plans. All signs shall conform to applicable size, e Illinois Manual of Uniform Traffic Control Devices and IDOT be in accordance to IDOT Standards 720011 and 729001 and IDOT

SITE RESTORATION MEASURES

- measures to control soil erosion and sedimentation due to construction sures shall be in substantial conformance with the principles, practices, ronmental Protection Agency (IEPA) publication "Illinois Urban
- ration measures shall be as indicated on the Plans, as stated in these scribed in the "Storm Water Pollution Prevention Plan" (SWPPP, if
- has been prepared for the site, construction and site development work cedures of the NPDES (National Pollution Discharge Elimination EPA for storm water discharge from construction site activities. ed until a phased program for performing all required construction and tor and approved by Engineer. The purpose of this program is to
- ninimizing the extent of areas subject to erosion during construction as soon as possible. The program shall include preparation of site plans pecific construction and restoration areas.
- maintenance and repair of all seeded, sodded, and planted surfaces the project area are suitably established and erosion potential has
- e designed and operated so that water discharged from the project site idards, as set forth in Title 35, Subtitle C, Chapter I, Part 302, Subpart
- erosion/sediment control and restoration measures shall be subject to ient conditions shall be corrected when required by the Governing
- egetated ground covers only to areas absolutely required to perform the hall be installed at the construction limits of the site as indicated on the ected by barrier fencing on the Plans shall not be disturbed during
- th vegetation and/or protective mulches or blankets. If conditions measures, then the installation of structural controls such as sediment equired.
- ated immediately after earthwork operations have permanently ceased of the site and will not resume for a period exceeding 14 calendar days. iated within 1 working day of permanent or temporary cessation of oleted as soon as possible but not later than 14 days from the initiation
- porarily halt for a period of less than 14 calendar days, then surface tiated on that portion of the site as long as the site conforms to the of the Plans, SWPPP, and ILR10 permit. Where the initiation of surface after construction activity temporarily or permanently ceases is
- on measures shall be initiated as soon as practicable. In necessary due to seasonal limitations or temporary work stoppages. seeding, sodding, or planting operations, sloped surfaces shall be as a means of temporary erosion protection.
- ling shall be protected by applied mulch or erosion control blankets.
- led where indicated on the Plans and maintained until soil surfaces have permanent cover. Such barriers shall be silt fences, compost filter socks, l on the Plans. arriers shall be installed prior to the start of site disturbance and
- oon as earthwork operations permit. Drainage structures shall be graded acture rim to create temporary sediment traps unless otherwise indicated
- all be installed over casting grates of drainage structures that receive ock barriers shall be placed around drainage structures where the use of tive or not feasible and where silt fences or filter socks are indicated on rriers, and the types of barriers to be provided, shall be as indicated on
- eaned as necessary during construction when they become clogged or ned periodically during construction to allow them to operate
- to defined paved driveway connections to adjacent public roadways or exits shall be cleaned daily, as needed to prevent the spread of mud or ind debris shall be cleared from public roads whenever it occurs and as
- etc., used by construction vehicles and equipment shall be cleaned of pavements clean of such materials. s-egress of construction vehicles shall be installed where indicated on
- ined and repaired by Contractor as necessary to enable use by vehicles
- gradation, and geotextile fabric underlayment to be provided shall be as
- access pavements shall be removed upon completion of construction soil, graded to match the adjacent topography, and restored in

- (1) Methods for diverting water flow, controlling groundwater, and removing stormwater from work sites shall include erosion and sediment control measures as necessary to prevent erosion at pump discharge locations and to minimize the discharge of settleable solids.
- (2) Stone or concrete block riprap protection, or other filtering measures, shall be provided at discharge locations when deemed necessary by Engineer.
- (3) Sediment traps or water removal sump pits shall be provided when required by Engineer.
- F. DUST CONTROL
- When dust blowing from construction sites may become a traffic hazard or a danger to the health or comfort to persons downwind, it shall be controlled either permanently or temporarily depending upon the state of development of the site. Dust control measures shall be taken when required by Governing Agency or directed by Engineer.
 Dust problems from active construction areas shall be kept under control by means of watering dry surfaces and/or
- (a) the application of calcium chloride. Application and repetition rates shall be as necessary for effective control.
 (3) When dust problems occur from disturbed areas, watering and/or calcium chloride are not effective, and weather conditions prevent effective erosion control seeding, such areas shall be stabilized by the application of chemical tackifiers such as "MARLOC" (Reclamore Co.) or "Soil Seal" (Soil Seal Corp.). Application rates and procedures
- shall be in accordance with manufacturer's recommendations.(4) In the event of severe dust problems, the Governing Agency may stop such dust-producing activities until the problem is resolved.
- G. SOIL STOCKPILES
- (1) Soil stockpiles shall be located to prevent sediment runoff into watercourses and drainage systems, or onto adjacent roadways and properties, and, if shown, shall be placed where indicated on the Plans. Stormwater runoff from soil stockpiles shall include erosion control devices as necessary to prevent erosion or sedimentation.
- (2) Soil stockpiles to remain in place more than 15 days shall be surrounded with a sediment barrier fence unless runoff from the stockpile area drains directly to a constructed sediment trap.(3) Soil stockpiles that will remain in place longer than 60 days shall be stabilized with temporary erosion control
- seeding (seed and mulch) within 15 days after construction of the stockpile.
- H. UNVEGETATED AREAS
 (1) Unvegetated areas expected to remain unpaved or unrestored for longer than 60 days shall be stabilized with temporary erosion control seeding and mulching within 15 days after earthwork operations have ceased.
 (2) If unvegetated areas are to remain unpaved or unrestored for less than 60 days, sediment barrier fences or
- (2) If unvegetated areas are to remain unpaved of unrestored for less than ob days, sedmitth barrier renews of excavated sediment traps shall be installed if Engineer determines that sediment runoff will affect adjacent areas.
 (3) Unvegetated steep slopes shall be protected by hydromulching the exposed ground with a Bonded Fiber Matrix, Stabilized Fiber Matrix, or Flexible Growth Medium product (applied at rates recommended by the product manufacturer for the site conditions) when such protection is indicated on the Plans or required by Engineer. Other unvegetated steep slope protection, if required, shall be as indicated on the Plans.
- I. TOPSOIL PLACEMENT AND VEGETATIVE COVER
- (1) Weather conditions permitting, topsoil shall be placed and graded within each defined construction area as soon as practical upon completion of cut and fill operations within that area.
- (2) Seeding, planting and erosion protection operations to establish permanent vegetative ground cover shall be performed within 1 day after topsoil placement, whenever weather conditions are adequate for such work.
 (3) Temporary erosion control measures shall remain in place until upland areas are permanently vegetated whereby a bill in the protection of the protection of the protection of the protection operation.
- minimum of 70% of every square yard seeded is covered with a uniform stand of vegetation in a live, healthy condition and erosion potential no longer exists.J. DRAINAGE OUTLETS AND OVERFLOWS
- (1) Erosion protection (stone riprap, concrete block mats, or other specified method) shall be provided at drainage pipe outlets and stormwater basin overflows immediately following installation of the outlet/overflow structures.
- K. DRAINAGE CHANNELS AND SWALES
- (1) Drainage channel and swales shall be stabilized and protected with the installation of aggregate trench checks, a cellular confinement system, seeding, and/or turf reinforcement mat where and as indicated on the Plans.
- L. EROSION CONTROL SEEDING AND MULCHING
- (1) Areas which may not be at final grade but will remain undisturbed for longer than 60 days (including soil stockpile areas) shall be seeded and/or mulched, as required by Engineer, within 15 days of stoppage of construction activities within the area.
- (2) Seed mixture to be used for temporary erosion control seeding of excavated, filled, graded, or otherwise disturbed areas shall be IDOT Class 7 114 lbs. / acre.
 (3) Seed mixtures should be applied mechanically so that the seeds are planted at a depth of 1/4 to 1/2 inch. If the seed
- is broadcast or hydroseeded, secondary raking or harrowing is required.
 (4) Seeded areas shall be protected with a wood / cellulose fiber mulch containing a pre-blended chemical tackifier.
- Mulch application rate shall be 2,000 lbs. per acre (minimum). Tackifier rate shall be as recommended by the product manufacturer.(5) When indicated on the Plans or required by Engineer, seeded slopes shall be protected by hydromulching the areas
- with a Bonded Fiber Matrix, Stabilized Fiber Matrix or Flexible Growth Medium product applied at a rate recommended by the product manufacturer for the site conditions. The type of product to be used shall be as indicated on the Plans or determined by Engineer. Other slope protection, if required, shall be as indicated on the Plans
- (6) When seasonal weather conditions or construction operations prevent seeding, sodding, or planting operations for a prolonged period (as determined by Engineer), exposed soil slopes shall be protected by hydromulching the areas with a Bonded Fiber Matrix, Stabilized Fiber Matrix or Flexible Growth Medium product applied at a rate recommended by the product manufacturer for the site conditions. The type of product to be used shall be as determined by Engineer.
- M. PERMANENT VEGETATIVE COVERS
- Vegetative ground covers shall be provided, installed, and protected in accordance with the Plans.
 Vegetative areas (other than lawns) damaged by construction activities, but not within the Project disturbed limits, shall be seeded with IDOT Class 1B Seed Mixture (200 lbs. / acre); unless a different type of seed mixture is indicated on the Plans to match the original conditions. These seeded areas shall be protected with a wood / cellulose fiber mulch (2,000 lbs. / acre) containing a preblended chemical tackifier.
 Lawn areas demaged by construction activities shall be restared with trafference and to match activities.
- (3) Lawn areas damaged by construction activities shall be restored with turf grass sod to match original conditions.
- N. EROSION CONTROL BLANKETS (1) Seeded areas shall be covered with erosion control blankets where indicated on the Plans and where specifically
- required by Engineer. These blankets shall be placed within 24 hours of seeding.(2) Erosion control blankets shall be of one or more of the following types and shall be as specified on the Plans or in these Project Technical Specifications. Installation shall be in accordance with manufacturer recommendations and requirements.
- Type 1: Knitted straw fiber blanket with attached photodegradable plastic top and bottom nets: North American Green S150 or equivalent.
- Type 2: Mat of wood fiber material with attached photodegradable plastic top and bottom nets: American Excelsior Company Curlex II or equivalent.
- Type 3: Knitted straw and coconut fiber blanket with a UV stabilized polypropylene top net and a
- photodegradable bottom net: North American Green SC150 or equivalent.
- Type 4: Knitted coconut fiber blanket with a turf reinforcement mat of UV stabilized polypropylene material and top and bottom UV
- stabilized polypropylene nets: North American Green C350 or equivalent.
- (3) Contractor shall be responsible for maintaining the blankets in place until a satisfactory stand of vegetation is established.
- O. PERMANENT TURF REINFORCEMENT MATS
- (1) As a means of permanent erosion protection, specific seeded areas shall be covered with turf reinforcement mats (polypropylene fiber matrix product) where indicated on the Plans and where required by Engineer. These mats shall be placed within 24 hours of seeding.
- (2) Turf reinforcement mats shall be of one or more types (with or without netting and straw / coconut fiber blanket layers) as specified on the Plans. Installation shall be in accordance with manufacturer recommendations and requirements.
- (3) Contractor shall be responsible for maintaining the mats in place until a satisfactory stand of vegetation is established
- SODDING
- (1) Grass areas removed or damaged by construction activities shall be restored with sod and maintained until the sod is knitted to the soil. Disturbed grass areas shall be sodded except where other measures are indicated on the Plans or required by Engineer.
- (2) Sodding (including fertilizing) shall be in accordance with Section 252 of the IDOT Standard Specifications, as applicable to this project and as specified herein. Sod material shall be in accordance with Article 1081.03. It is specifically noted that sod grown on soil high in organic material such as peat will not be acceptable.

- (3) After required topsoil has been placed and graded, the areas to be sodded shall be thoroughly tilled to a depth of at least 3 inches by disking, harrowing, or other approved methods until the condition of the soil is acceptable to Engineer. If as a result of a rain, a crust is formed over the prepared surface, the surface shall again be placed in a suitable condition for placing sod.
- (4) All soil surfaces shall be moist when the sod is placed. When directed by Engineer, Contractor shall be required to apply water to dry soil surfaces at a minimum rate of one gallon per square yard immediately prior to placing the sod.
- (5) Fertilizer shall be applied uniformly at a rate of 90 pounds of Nitrogen (N), 54 pounds of available Phosphoric (P2O5), and 36 pounds of Soluble Potash (K2O) per acre; and shall be incorporated into the soil to a depth of at least 3 inches by disking, harrowing or other approved methods acceptable to Engineer. The incorporation of fertilizer may be a part of the tillage operation specified above.
- (6) Contractor shall have complete responsibility for watering sodded areas (number, schedule, and rates of applications) as necessary to prevent death or damage of sod material due to lack of water during the time period between sod placement and when the sod becomes knitted to the soil and is growing in place.(7) If Contractor the solution of the solution.
- (7) If Contractor does not water the sod within 24 hours after notification that the sod is showing damage due to lack of water, Owner reserves the right to engage another contractor to do the work and the cost thereof will be deducted from the monies payable to Contractor for the cost of sodding. Contractor will not be relieved of the responsibility for defective sod or unsatisfactory growing of sod due to the hiring of another contractor by Owner for watering the sod.
- (8) If Contractor desires to use water from hydrants, it shall make application to the proper authority, and shall conform to the municipal ordinances, rules, or regulations concerning their use. Water obtained from hydrants shall be at Contractor's expense.
- (9) Contractor shall be responsible for the maintenance of all areas sodded under the contract, including necessary watering and resodding, and for the satisfactory establishment of knitted sod grass on all sodded areas until final acceptance of the work. In the event that the length of time between sodding and final acceptance is insufficient for Engineer to determine that acceptable growth is established, final acceptance of the work will not be made until the following growing season or until such time that the grass cover can be appraised as satisfactory.
- (10) Approval and acceptance of sodded areas will require that a minimum of 95% of the material within every square yard of sod installed be in a live, healthy condition and be firmly knitted to the soil. Defective or unacceptable sod shall be removed, replaced and watered at Contractor's expense.
- (11) Only areas within the defined construction limits that are authorized for topsoil replacement will be considered for payment for sodding. All other grass areas that are damaged by construction operations shall be sodded and restored at Contractor's expense and will not be paid for separately.
- (12) Unless defined otherwise in the Agreement between Owner and Contractor, this work will be paid for at the contract unit price per square yard for sodding, which price shall be payment in full for all fertilizer and sod materials and all labor and equipment necessary to perform and complete sodding operations, including watering and other maintenance activities necessary to establish a satisfactory grass cover. Fertilizer nutrients will not be paid for separately and shall be included in the contract unit price for this work.

Q. PERMANENT SEEDING

- (1) Where indicated on the Plans, vegetative areas disturbed by construction activities shall be restored by the proper application of fertilizer nutrients, seed mixture, and protective mulch or blanket, and maintenance of said areas until a satisfactory stand of vegetation is established.
- (2) Seeding including fertilizing and mulching shall be in accordance with Sections 250 and 251 of the IDOT Standard Specifications, as applicable to this project and as specified herein.
- (3) Seed mixtures and application rates shall be as indicated on the Plans. Application rates for dormant seeding shall be at least 150% of specified rates.
 (4) Contractor shall submit lists of all materials (seeds, fertilizer, mulches and blankets) and proposed application rates
- to Engineer for approval prior to starting any seeding work. Contractor shall also submit (to Engineer) a list of equipment to be used in performing this work, prior to starting any such work.
- (5) After required topsoil has been placed and graded, the areas to be seeded shall be thoroughly tilled to a depth of at least 3 inches by disking, harrowing, or other approved methods until the condition of the soil is acceptable to Engineer. If as a result of a rain, a crust is formed over the prepared surface, the surface shall again be placed in a suitable condition for seed planting.
- (6) Fertilizer shall be applied uniformly at a rate of 90 pounds each of Nitrogen (N), available Phosphoric (P2O5), and Soluble Potash (K2O) per acre; and shall be incorporated into the soil to a depth of at least 3 inches by disking, harrowing or other approved methods acceptable to Engineer. The incorporation of fertilizer may be a part of the tillage operation specified above. Fertilizer nutrients and seed shall be applied in two separate operations.
 (7) Seed mixture shall be applied so that the seeds are planted at a depth of ¼ to ½ inch. If the seed is placed by broadcasting or hydro-seeding rather than planted to proper depth by mechanical means, raking, harrowing or
- rolling with a corrugated roller shall be required.(8) Seeded areas shall be covered with mulch products, erosion control blankets, or turf reinforcement mats within 24 hours of seeding. The methods of protection to be used shall be as indicated on the Plans.
- (9) Mulching shall be by machine application of wood / cellulose fiber mulch (containing a preblended chemical tackifier) applied as a slurry of 2,000 pounds of mulch and not less than 2,000 gallons of water per acre. Mulching shall not be applied concurrently with seeding. Other mulching products and methods (such as Bonded Fiber Matrix, Stabilized Fiber Matrix and Flexible Growth Medium) shall be used where specifically indicated on the Plans.
- (10) Seasonal seeding operations shall take place between March 15 and September 30 and only after specific authorization by the Engineer. Dormant seeding, if authorized, shall take place between November 1 and March 1. Seeding outside of these two time frames may be performed provided the Contractor guarantees a minimum of 75 percent growth over the entire seeded area after a period of establishment.
- (11) Contractor shall have complete responsibility for watering seeded areas (number, schedule, and rates of applications) as necessary to prevent death or damage of seeds and new vegetation due to lack of water, during the time period between seeding and when the vegetation becomes rooted in the soil and is growing in place.
 (12) If Contractor does not water the seed and vegetation within 24 hours after notification that the seed and
- (12) In Contractor does not water the seed and vegetation within 24 hours after notification that the seed and vegetation within 24 hours after notification that the seed and vegetation are showing damage due to lack of water, Owner reserves the right to engage another contractor to do the work and the cost thereof will be deducted from the monies payable to Contractor for the cost of seeding. Contractor will not be relieved of the responsibility for defective seed or unsatisfactory growing of seed due to the hiring of another contractor by Owner for watering the seed.
 (13) If Contractor desires to use water from hydrants, it shall make application to the proper authority, and shall
- conform to the municipal ordinances, rules, or regulations concerning their use. Water obtained from hydrants shall be at Contractor's expense.
- (14) Contractor shall be responsible for the maintenance of all areas seeded under the contract, including all necessary watering, reseeding, and remulching and for the satisfactory growth of vegetation on all seeded areas until final acceptance of the work. In the event that the length of time between seeding and final acceptance is insufficient for Engineer to determine that acceptable growth is established, final acceptance of the work will not be made until the following growing season or until such time that the vegetation cover can be appraised as satisfactory.
- (15) Approval and acceptance of seeded areas will require that a minimum of 80% of every square yard seeded be covered with a uniform stand of vegetation in a live, healthy condition. Reseeding, remulching, and watering of unacceptable areas shall be at Contractor's expense.
 (16) Only areas within the defined construction limits that are authorized for topsoil replacement will be considered
- for payment for seeding. All other vegetation areas that are damaged by construction operations shall be seeded and restored at Contractor's expense.
- (17) Unless defined otherwise in the Agreement between Owner and Contractor, this work will be paid for at the contract unit prices per square yard for seeding and for mulching, which prices shall be payment in full for all seed, fertilizer, and mulch materials and all labor and equipment necessary to perform and complete grass seeding and mulching operations, including watering and other maintenance activities necessary to establish a satisfactory grass cover. Fertilizer nutrients will not be paid for separately and shall be included in the contract unit price for seeding.

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		TRANSPORTATION
н	a. New water main valves, including pressure tap valves, adjacent to an existing water main, and existing water main valves	GENERAL NOTES 1. THE OWNER OR HIS/HER/THEIR REPRESENTATIVE IS RESPONSIBLE TO OBTAIN ANY AND ALL PERMITS
	 shall only be operated by the City of Naperville, Department of Public Utilities CEE/CM Division personnel with 48-hour notice (Monday-Friday). Contact Naperville DPU-W/WW (630) 420-4122 for scheduling. b. Any existing utility structures requiring adjustment or reconstruction shall be completed by the contractor to the 	 REQUIRED BY APPLICABLE GOVERNMENTAL AGENCIES. 2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF NAPERVILLE DESIGN MANUA AND STANDARD SPECIFICATIONS (CURRENT EDITION) AND WITH THE ILLINOIS DEPARTMENT OF
	satisfaction of the utility owner. Adjustments and/or reconstructions not called for on the plans shall be considered incidental to the contract. No more than a total of 12 inches of adjusting rings and/or 2 adjusting rings shall be allowed. All structure frames shall be flush with final grade.	TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (CURREN EDITION).
	 c. Trees shall be installed a minimum of five (5) feet horizontally from underground electrical feeders, sanitary services, sanitary services, water mains, and water services. Trees shall be installed a minimum of ten (10) feet horizontally from utility structures and appurtenances, including, but not limited to, manholes, valve vaults, valve boxes and fire hydrants. No trees, shrubs or obstacles will be allowed 10' in front of, 5' on the sides, and 7' to the rear of the electrical transformer. 	 ALL CONTRACTORS DOING WORK IN THE PUBLIC RIGHT-OF-WAY MUST BE LICENSED (WHEN APPLICABLE) TO MAKE PUBLIC IMPROVEMENTS WITHIN THE NAPERVILLE CORPORATE LIMITS. THE CONTRACTOR/DEVELOPER ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR ANY ACTION
	d. All retainer glands when required to restrain valves, fittings, hydrants, and pipe joints shall be mechanical joint wedge action type MEGALUG 1100 Series as manufactured by EBBA Iron, Inc. or UNI-FLANGE BLOCKBUSTER 1400	RESULTING FROM THEIR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
0	 SERIES as manufactured by Ford Meter Box Co. and shall be for use on ductile iron pipe conforming to ANSI/AWWA C151/A21.51, for nominal pipe sizes 3" through 48". e. Existing ductile iron systems for restraining push-on pipe bells shall be MEGALUG SERIES 1100HD or FORD SERIES 1390. 	 5. THE CONTRACTOR/DEVELOPER SHALL INDEMNIFY AND HOLD HARMLESS THE CITY OF NAPERVILLE. 6. PRIOR TO COMMENCEMENT OF ANY OFF-SITE CONSTRUCTION, THE CONTRACTOR SHALL SECURE WRITTEN AUTHORIZATION THAT ALL OFF-SITE EASEMENTS HAVE BEEN SECURED AND THAT PERMISSION HAS BEEN GRANTED TO ENTER ONTO PRIVATE PROPERTY.
G	 f. Existing ductile iron systems requiring restraint shall be MEGALUG SERIES 1100SD (split MEGALUG) for mechanical joints. g. Ductile iron water main to be Class 52. All ductile iron pipe is to be encased in polyethylene film Polyethylene 	7. THE CONTRACTOR AND THEIR ON-SITE REPRESENTATIVES WILL BE REQUIRED TO ATTEND A
	 encasement to be installed in accordance with ANSI/AWWA C105/A21.5-05. h. A set of as-built record drawing shall be given to the City of Naperville upon completion of improvements showing the elevation and location (tied to two points) of all new and existing structures including fire hydrants, valve boxes and vaults, linestop sleeves, water service corporation stops, water main fittings/bends, manholes, sanitary service wyes 	PRE-CONSTRUCTION MEETING WITH THE CITY OF NAPERVILLE PRIOR TO ANY WORK BEING STARTED A PRE-CONSTRUCTION MEETING WILL NOT BE SCHEDULED UNTIL THE PROJECT HAS BEEN APPROVED BY THE CITY OF NAPERVILLE DEVELOPMENT REVIEW TEAM AND THE REQUIRED SURETY HAS BEEN POSTED.
	(measured from downstream manhole), and abandoned water or sanitary service lines. All elevations should be referenced to the same benchmark datum as the original design plans. Horizontal ties shall be referenced to lot lines, back of curb, or property corners.	8. A MINIMUM OF 48 HOURS NOTICE SHALL BE GIVEN TO THE CITY OF NAPERVILLE TED BUSINESS GROUP (630-420-6082) PRIOR TO STARTING WORK OR RESTARTING WORK AFTER SOME ABSENCE OF WORK FOR ANY REASON.
	 All sanitary sewer piping shall be PVC pipe meeting the requirements of ASTM D-2241 with joints conforming to ASTM D-3139. All sanitary sewer fittings shall be PVC meeting the following requirements: 4" to 12" shall be Injection Molded Fittings meeting ASTM D-2241. Greater than 12" shall be Fabricated Fittings meeting ASTM D-2241 or C905. Minimum pressure rating shall be 150 psi. 	9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ADEQUATELY IDENTIFY AND LOCATE ALL EXISTING UTILITIES PRIOR TO EXCAVATION. BEFORE STARTING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT JULIE FOR THE LOCATION OF ANY AND ALL UTILITIES. THE TOLL-FREE NUMBER IS 800-892-0123. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ANY PRIVATE FACILITIES OF
	j. The valves less than 16" shall be standard pattern, gate valves and shall have the name or mark of the manufacturer, size and working pressure plainly cast in raised letters on the valve body. Valves may be approved from one of the following manufacturers: American, Clow, Waterous or Kennedy.	NON-JULIE MEMBER FACILITIES. 10. THE CONTRACTOR CAN SCHEDULE ALL NECESSARY SITE INSPECTIONS WITH THE CITY OF
F	 k. Stainless steel nuts, bolts/T-bolts, and washers, Type 304 or better, will be required on all water main installations. This would apply to hydrants, tapping sleeves, valves, fittings, restraint, and other appurtenances buried or in valve vaults. Mechanical joints and restraint glands require 304 stainless steel T-bolts. An anti-seize compound shall be factory applied to nuts or bolts - any damage to this coating shall be repair with field applied approved anti-seize compound that 	NAPERVILLE BY CALLING (630) 420-6082 BETWEEN THE HOURS OF 8:00AM AND 4:00PM (CLOSED 1:00PM TO 2:00PM DAILY) ON WEEKDAYS WHEN THE CITY IS OPEN FOR BUSINESS. THE CONTRACTOR WILL BI REQUIRED TO PROVIDE THE SITE PERMIT NUMBER FOR THE PROJECT IN ORDER TO SCHEDULE THE INSPECTION(S).
	 is a molybdenum-base lubricant, Bostik Never-Seez or approved equal. 1. The contractor shall rotate and/or adjust any existing and/or new hydrant to the satisfaction of the Department of Public Utilities 	11. RECORD DRAWINGS ARE REQUIRED TO BE SUBMITTED AND APPROVED BY THE CITY OF NAPERVILLE PRIOR TO FINAL OCCUPANCY BEING GRANTED.
	m. Water mains shall be subjected to a hydrostatic/leakage test in accordance with Naperville Standard Specifications. Test pressure shall be no less than 150 psi for a period of 4 hours and not vary by more than + 5 psi. during the test. The test gauge shall be approved by the City and shall be glycerin or oil filled, with a range of not more than 200 psi and	12. FINAL ACCEPTANCE OF PUBLIC IMPROVEMENTS SHALL BE GRANTED ONLY AFTER A FINAL INSPECTION HAS BEEN COMPLETED AND HAS REVEALED THAT ALL IMPROVEMENTS HAVE BEEN SATISFACTORILY COMPLETED IN ACCORDANCE WITH THE NAPERVILLE STANDARD SPECIFICATIONS.
	increments not greater than 5 psi, 4 " minimum dial size. Water recovery test shall be completed at the end of the testing period to show actual leaking and that the water main did not have too much trapped air in the tested section.n. The City of Naperville DPU-W/WW does not guarantee that any valve or fitting in the existing water distribution system	UTILITIES ARE NOT CONSIDERED ACCEPTED UNTIL THEY ARE FORMALLY ACCEPTED BY THE CITY COUNCIL AS REQUIRED IN ACCORDANCE WITH THE NAPERVILLE MUNICIPAL CODE.
	 will hold against a hydrostatic/leakage test. The Contractor is solely responsible for providing an acceptable pressure test which shall include provisions around existing valves and fittings. o. Fire hydrant should be bagged "NOT IN SERVICE" until all testing and disinfection has been completed and new water 	STORM SEWER NOTES (GENERAL) 1. NO CONNECTION TO AN EXISTING PUBLIC STORM SEWER MAY BE MADE WITHOUT PERMISSION OF
	main section is service.p. Sanitary sewer and water shall be constructed, tested, and placed into service in accordance with City of Naperville	 THE CITY ENGINEER. THE CONTRACTOR SHALL REPAIR ANY EXISTING FIELD DRAINAGE TILE DAMAGED DURING
E	 Standard Specification and Specifications for Water and Sewer Main Construction in Illinois, Latest Edition. q. All valve boxes, vaults, hydrants, and manholes shall not be covered with construction debris and shall remain accessible to the respective utility company. r. Water service line smaller than 3" shall be type K copper. If joints are required due to length of service, then only 	2. THE CONTRACTOR SHALL REPAIR ANY EXISTING FIELD DRAINAGE TILE DAMAGED DORING CONSTRUCTION AND PROPERLY REROUTE AND/OR CONNECT SAID TILE TO THE NEAREST STORM SEWER OUTLET. ALL LOCATIONS OF ENCOUNTERED FIELD DRAINAGE TILE SHALL BE PROPERLY INDICATED ON THE CONTRACTOR'S RECORD DRAWINGS.
	compression type coupling shall be permitted. No soldered or flared type joints are allowed.s. All sanitary manholes shall be tested for leakage by vacuum testing. The manhole frame and adjusting rings shall be in	STORM SEWER NOTES (STORM SEWER WORK IN PLANS)
	place when testing. Any leaks shall be repaired from exterior of manhole - patching inside of manhole shall not be acceptable. A vacuum of 10" (254 mm) Hg shall be place on the manhole and the time shall be measured for the vacuum to drop to 9" (229 mm) Hg. The vacuum shall not drop below 9" (229 mm) Hg for the following time periods for each size of manhole:	1. THE FOLLOWING MATERIALS ARE PERMITTED FOR STORM SEWER AND PIPE CULVERTS. WHERE A PARTICULAR MATERIAL IS SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS, NO OTHER KIND OF MATERIAL WILL BE PERMITTED:
	i. 48-inch diameter - 60 seconds ii. 60-inch diameter - 75 seconds iii. 72-inch diameter - 90 seconds	a. <u>REINFORCED CONCRETE PIPE (RCP)</u> - REINFORCED CONCRETE PIPE SHALL CONFORM TO ASTM DESIGNATION C 76, CLASSES I, II, III, IV OR V. BITUMINOUS JOINTS SHALL CONFORM TO ASTM DESIGNATIONS C 14 OR C 76 AS MAY BE APPLICABLE. BITUMINOUS MATERIAL SHALL CONSIST OF
	 iv. 84-inch diameter - 105 seconds Any manholes that fail the test shall be sealed and re-tested until acceptable. t. The contractor shall provide internal televised inspection of all installed sanitary sewer, laterals, manholes and 	HOMOGENEOUS BLEND OF BITUMEN, INERT FILLER, AND SUITABLE SOLVENT APPROVED BY THE CITY ENGINEER. RUBBER GASKET JOINTS SHALL CONFORM TO ASTM C 433. REINFORCED CONCRETE PIPE SHALL ALSO BE PERMITTED AS ROUND, ELLIPTICAL, OR BOX SHAPED OR AS REINFORCED CONCRETE ARCH CULVERT.
D	connections to the public system. Following completion of televising work, the contractor shall submit video recordings on DVD or flash drive along with a comprehensive televising report which will indicate the location, footages and nature of any defects. All defects shall be repaired to the satisfaction of the Water/Wastewater Utility and re-televised.	 b. <u>NON-REINFORCED CONCRETE PIPE</u> - NON-REINFORCED CONCRETE PIPE SHALL BE ALLOWED FOR PIPES WITH A 10 INCH OR SMALLER DIAMETER. NON-REINFORCED CONCRETE PIPE SHALL
	 u. Contractor work hours are only allowed from 7:00 a.m. to 5:00 p.m., Monday through Saturday. No work shall be permitted on Sundays. v. Sanitary pipes with less than 4 feet or more than 25 feet of cover shall be constructed of ductile iron piping (Class 50, minimum) and encased in polywrap. 	CONFORM TO ASTM DESIGNATION C 14, CLASS 3. BITUMINOUS JOINTS SHALL CONFORM TO ASTM DESIGNATIONS C 14 OR C 76 AS MAY BE APPLICABLE. BITUMINOUS MATERIAL SHALL CONSIST OF HOMOGENEOUS BLEND OF BITUMEN, INERT FILLER, AND SUITABLE SOLVENT APPROVED BY THE CITY ENGINEER. RUBBER GASKET JOINTS SHALL CONFORM TO ASTM C 443.
	 w. All excavations more than 20 feet deep must be protected by a system designed by a registered professional engineer. x. Contractor shall maintain 2' minimum clearance between existing utilities and new foundations and underground 	c. DUCTILE IRON PIPE (DIP) - DUCTILE IRON PIPE SHALL CONFORM TO ANSI A 21.51 (AWWA C-151),
	 facilities. In areas where foundations and underground facilities are proposed adjacent to existing utilities, the contractor shall pot hole by vacuum excavation or hand excavation to locate the existing utility to verify minimum clearance requirement. y. Fences shall be installed a minimum of 5 feet from any water or sanitary mains when running parallel with them. Where 	CLASS THICKNESS DESIGNED PER ANSI A 21.50 (AWWA C-150), TAR (SEAL) COATED AND CEMENT LINED PER ANSI A 21.4 (AWWA C-104), WITH MECHANICAL OR RUBBER RING (SLIP SEAL OR PUSH ON) JOINTS. ALL DUCTILE IRON PIPE SHALL BE WRAPPED WITH POLYETHYLENE.
	fences are installed crossing water or sanitary mains, the posts shall be located to have the main between them.z. All brass components shall be certified to be lead free in compliance with NSF 61 and NSF 372 and identified with applicable markings.	d. <u>POLYVINYL CHLORIDE PIPE (PVC)</u> - POLYVINYL CHLORIDE (PVC) PIPE SHALL CONFORM TO ASTM I 3034, TYPE PSM. THE MINIMUM STANDARD DIMENSION RATIO (SDR) SHALL BE 26. THE PIPE SHALI BE MADE OF PVC PLASTIC HAVING A MINIMUM CELL CLASSIFICATION OF 12454-C, AND SHALL HAVE A MINIMUM PIPE STIFFNESS OF FORTY-SIX (46) LBS. PER INCH (317 KPA). JOINTS FOR PVC PIP.
		 SHALL BE FLEXIBLE ELASTOMETRIC SEALS PER ASTM D 3212. e. <u>HIGH DENSITY POLYETHYLENE PIPE (HDPE)</u> - HIGH-DENSITY POLYETHYLENE (HDPE) PIPE SHALL
С	OTHER NOTES: A. Manholes shall be furnished with a self-sealing frame and solid cover (Neenah Foundry R-1772-CVH, East Jordan Iron	CONFORM TO THE REQUIREMENTS OF AASHTO M 252 AND M 294. PIPE AND FITTINGS SHALL BE MADE FROM VIRGIN PE COMPOUNDS WHICH CONFORM TO THE REQUIREMENTS OF CELL CLASS 324420C AS DEFINED AND DESCRIBED IN ASTM D 3350. RUBBER GASKET JOINTS SHALL BE USED.
	Works 1022-3, or equal approved by the City Engineer) with the word "Sanitary" imprinted on the cover in raised letters (see Standard Detail SAN 3). Frames and lids shall meet or exceed AASHTO H-20 loading specifications.	f. <u>FULLY GALVANIZED CORRUGATED STEEL PIPE</u> - FULLY GALVANIZED CORRUGATED STEEL PIPE MAY BE USED FOR RESIDENTIAL DRIVEWAY CROSSINGS ONLY WHEN A DITCH SECTION IS PRESEN THE MINIMUM CULVERT SIZE IS 12" DIAMETER.
	B. Both the manhole frame and cover shall have machined horizontal and vertical bearing surfaces. Inverted manhole frames are not allowed.	2. BEDDING, OTHER THAN CONCRETE EMBEDMENT, SHALL CONSIST OF GRAVEL, CRUSHED GRAVEL, OF CRUSHED STONE 1/4 INCH TO 1 INCH IN SIZE. AS A MINIMUM, THE MATERIAL SHALL CONFORM TO TH
	C. Pick holes shall not create openings in the manhole cover.D. Bolt-down frames and covers shall be Neenah Foundry R-1916-F1, East Jordan Iron Works 1040 ZPT or equal approved	REQUIREMENTS OF IDOT STANDARD SPECIFICATIONS. THE GRADATION SHALL CONFORM TO GRADATION CA-7 OR CA-11 OF THE STANDARD SPECIFICATIONS.
	 by the City Engineer. Frames are to be bolted to cone. Bolt-down frames shall be used where indicated on the plans. E. Manhole frames shall be adjusted to proper grade using reinforced, precast concrete or fiberized rings. Brick or concrete blocks will not be allowed. Fiberized adjusting rings shall be required when frame will be with a roadway area. Final 	3. BACKFILL MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF IDOT STANDARD SPECIFICATIONS THE GRADATION SHALL CONFORM TO GRADATION CA-6 OF THE STANDARD SPECIFICATIONS. BACKFILL MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
	frame adjustment for manholes within the roadway area shall be in accordance with Sections 602 and 603 of Standard Specifications for Road and Bridge Construction, prepared by the Illinois Department of Transportation, latest edition.	4. JOINTS CONNECTING DISSIMILAR PIPE MATERIALS SHALL BE MADE WITH SEWER CLAMP NON-SHEAR TYPE COUPLINGS; CASCADE CSS, ROMAC LSS, FERNCO, INC. SHEAR RING, OR APPROVED EQUAL. WHE AVAILABLE, A STANDARD JOINT WITH A TRANSITION GASKET MAY BE USED. THE NAME OF THE
В	F. All manhole frames and adjusting rings shall be securely sealed to the cone section or top barrel section of the manhole using resilient, flexible, non-hardening, preformed bituminous mastic material, Conseal 102 B or approved equal. The mastic shall be applied in such a manner that no surface water or ground water inflow can enter the manhole through gaps	MANUFACTURER, CLASS, AND DATE OF ISSUE SHALL BE CLEARLY IDENTIFIED ON ALL SECTIONS OF PIPE. THE CONTRACTOR SHALL ALSO SUBMIT BILLS OF LADING, OR OTHER QUALITY ASSURANCE DOCUMENTATION WHEN REQUESTED BY THE CITY ENGINEER. ALL NUTS AND BOLTS FOR COUPLING SHALL BE STAINLESS STEEL.
	between the top barrel section or cone section and the first adjusting ring, between adjusting rings, or between the last adjusting ring and the manhole frame. Up to 12 inches (300 mm) of adjusting rings may be installed on a given manhole. No more than one 2-inch (50 mm) adjusting ring, and no more than two adjusting rings in total shall be used.	5. MANHOLES FOR STORM SEWERS SHALL HAVE A MINIMUM INSIDE DIAMETER OF 48 INCHES AND SHALL BE CONSTRUCTED OF PRECAST CONCRETE UNITS IN ACCORDANCE WITH ASTM C478-05 (OR
	 G. A continuous layer of non-hardening, preformed bituminous mastic material, Conseal 102 B or approved equal shall be applied to each manhole barrel cone and top section to provide a watertight seal. 	LATEST EDITION) AND SHALL CONFORM TO THE CITY OF NAPERVILLE STANDARD DETAIL. ALL MANHOLES SHALL BE WATER-TIGHT. ALL VISIBLE LEAKS SHALL BE SEALED IN A MANNER ACCEPTABLE TO THE CITY ENGINEER.
	H. All brass components shall be certified to be lead free in compliance with NSF 61 and NSF 372 and identified with applicable markings.	6. MANHOLES SHALL BE FURNISHED WITH A SELF-SEALING FRAME AND SOLID COVER (EAST JORDAN IRON WORKS 1022 WITH TYPE A SOLID COVER, OR APPROVED EQUAL) WITH THE WORD "STORM" IMPRINTED ON THE COVER IN RAISED LETTERS. ALL FRAMES AND LIDS SHALL MEET OR EXCEED
-	I. The sanitary forcemain shall be tested a minimum of one (1) hour at 1.5 times the shut off head of the pump, 2.5 times the operating pressure, or 20 psi, whichever is greatest. Allowable leakage shall be in accordance with section 41-2.14C of the Standard Specifications for Water and Sewer Construction.	AASHTO H-20 LOADING SPECIFICATIONS. FRAMES SHALL BE SHOP PAINTED WITH ASPHALTIC BASE PAINT. BOTH THE MANHOLE FRAME AND COVER SHALL HAVE MACHINED HORIZONTAL AND VERTICAL BEARING SURFACES. INVERTED MANHOLE FRAMES ARE NOT ALLOWED. PICK HOLES SHAI NOT CREATE OPENINGS IN THE MANHOLE COVER.
^		7 MANHOLE STEPS ON MAXIMUM 16 INCH CENTER SHALL BE FURNISHED WITH EACH MANHOLE

TRANSPORTATION, ENGINEERING AND DEVELOPMENT BUSINESS GROUP STANDARD CONSTRUCTION PLAN NOTES FOR DEVELOPMENT PROJECTS

- MES ALL RESPONSIBILITY AND LIABILITY FOR ANY ACTION IN THE PUBLIC RIGHT-OF-WAY.
- . INDEMNIFY AND HOLD HARMLESS THE CITY OF NAPERVILLE. DFF-SITE CONSTRUCTION, THE CONTRACTOR SHALL SECURE , OFF-SITE EASEMENTS HAVE BEEN SECURED AND THAT
- ENTER ONTO PRIVATE PROPERTY. E REPRESENTATIVES WILL BE REQUIRED TO ATTEND A THE CITY OF NAPERVILLE PRIOR TO ANY WORK BEING STARTED. NOT BE SCHEDULED UNTIL THE PROJECT HAS BEEN APPROVED
- ALL BE GIVEN TO THE CITY OF NAPERVILLE TED BUSINESS NG WORK OR RESTARTING WORK AFTER SOME ABSENCE OF
- PONSIBILITY TO ADEQUATELY IDENTIFY AND LOCATE ALL ATION. BEFORE STARTING CONSTRUCTION, THE CONTRACTOR ATION OF ANY AND ALL UTILITIES. THE TOLL-FREE NUMBER IS Y OF THE CONTRACTOR TO LOCATE ANY PRIVATE FACILITIES OR
- LL NECESSARY SITE INSPECTIONS WITH THE CITY OF 82 BETWEEN THE HOURS OF 8:00AM AND 4:00PM (CLOSED 1:00PM EN THE CITY IS OPEN FOR BUSINESS. THE CONTRACTOR WILL BE MIT NUMBER FOR THE PROJECT IN ORDER TO SCHEDULE THE
- O BE SUBMITTED AND APPROVED BY THE CITY OF NAPERVILLE GRANTED.
- OVEMENTS SHALL BE GRANTED ONLY AFTER A FINAL ND HAS REVEALED THAT ALL IMPROVEMENTS HAVE BEEN ORDANCE WITH THE NAPERVILLE STANDARD SPECIFICATIONS. CEPTED UNTIL THEY ARE FORMALLY ACCEPTED BY THE CITY NCE WITH THE NAPERVILLE MUNICIPAL CODE.
- BLIC STORM SEWER MAY BE MADE WITHOUT PERMISSION OF
- **ZEXISTING FIELD DRAINAGE TILE DAMAGED DURING** DUTE AND/OR CONNECT SAID TILE TO THE NEAREST STORM ENCOUNTERED FIELD DRAINAGE TILE SHALL BE PROPERLY ECORD DRAWINGS.
- WORK IN PLANS)
- RMITTED FOR STORM SEWER AND PIPE CULVERTS. WHERE A IN THE PLANS OR SPECIAL PROVISIONS, NO OTHER KIND OF
- REINFORCED CONCRETE PIPE SHALL CONFORM TO ASTM , IV OR V. BITUMINOUS JOINTS SHALL CONFORM TO ASTM Y BE APPLICABLE. BITUMINOUS MATERIAL SHALL CONSIST OF A EN. INERT FILLER, AND SUITABLE SOLVENT APPROVED BY THE OINTS SHALL CONFORM TO ASTM C 433. REINFORCED ERMITTED AS ROUND, ELLIPTICAL, OR BOX SHAPED OR AS LVERT
- NON-REINFORCED CONCRETE PIPE SHALL BE ALLOWED FOR DIAMETER. NON-REINFORCED CONCRETE PIPE SHALL C 14. CLASS 3. BITUMINOUS JOINTS SHALL CONFORM TO ASTM Y BE APPLICABLE. BITUMINOUS MATERIAL SHALL CONSIST OF A N, INERT FILLER, AND SUITABLE SOLVENT APPROVED BY THE OINTS SHALL CONFORM TO ASTM C 443.
- IRON PIPE SHALL CONFORM TO ANSI A 21.51 (AWWA C-151), ANSI A 21.50 (AWWA C-150), TAR (SEAL) COATED AND CEMENT 4). WITH MECHANICAL OR RUBBER RING (SLIP SEAL OR PUSH É SHALL BE WRAPPED WITH POLYETHYLÈNE.
- POLYVINYL CHLORIDE (PVC) PIPE SHALL CONFORM TO ASTM D NDARD DIMENSION RATIO (SDR) SHALL BE 26. THE PIPE SHALL A MINIMUM CELL CLASSIFICATION OF 12454-C. AND SHALL OF FORTY-SIX (46) LBS. PER INCH (317 KPA). JOINTS FOR PVC PIPE LIC SEALS PER ASTM D 3212.
- E (HDPE) HIGH-DENSITY POLYETHYLENE (HDPE) PIPE SHALL OF AASHTO M 252 AND M 294. PIPE AND FITTINGS SHALL BE DS WHICH CONFORM TO THE REQUIREMENTS OF CELL CLASS ED IN ASTM D 3350. RUBBER GASKET JOINTS SHALL BE USED.
- STEEL PIPE FULLY GALVANIZED CORRUGATED STEEL PIPE RIVEWAY CROSSINGS ONLY WHEN A DITCH SECTION IS PRESENT. DIAMETER
- MBEDMENT, SHALL CONSIST OF GRAVEL, CRUSHED GRAVEL, OR IN SIZE. AS A MINIMUM, THE MATERIAL SHALL CONFORM TO THE SPECIFICATIONS. THE GRADATION SHALL CONFORM TO ANDARD SPECIFICATIONS.
- RM TO THE REQUIREMENTS OF IDOT STANDARD SPECIFICATIONS.) GRADATION CA-6 OF THE STANDARD SPECIFICATIONS. ACTED TO 95% STANDARD PROCTOR DENSITY.
- MATERIALS SHALL BE MADE WITH SEWER CLAMP NON-SHEAR IAC LSS, FERNCO, INC. SHEAR RING, OR APPROVED EQUAL. WHEN H A TRANSITION GASKET MAY BE USED. THE NAME OF THE OF ISSUE SHALL BE CLEARLY IDENTIFIED ON ALL SECTIONS OF SUBMIT BILLS OF LADING, OR OTHER QUALITY ASSURANCE D BY THE CITY ENGINEER. ALL NUTS AND BOLTS FOR COUPLINGS
- LL HAVE A MINIMUM INSIDE DIAMETER OF 48 INCHES AND CONCRETE UNITS IN ACCORDANCE WITH ASTM C478-05 (OR RM TO THE CITY OF NAPERVILLE STANDARD DETAIL. ALL . ALL VISIBLE LEAKS SHALL BE SEALED IN A MANNER
- TH A SELF-SEALING FRAME AND SOLID COVER (EAST JORDAN COVER, OR APPROVED EOUAL) WITH THE WORD "STORM" LETTERS. ALL FRAMES AND LIDS SHALL MEET OR EXCEED NS. FRAMES SHALL BE SHOP PAINTED WITH ASPHALTIC BASE ND COVER SHALL HAVE MACHINED HORIZONTAL AND RTED MANHOLE FRAMES ARE NOT ALLOWED. PICK HOLES SHALL IOLE COVER.
- CH CENTER SHALL BE FURNISHED WITH EACH MANHOLE, SECURELY ANCHORED IN PLACE. TRUE TO VERTICAL ALIGNMENT. IN ACCORDANCE WITH THE NAPERVILLE STANDARD DETAILS. STEPS SHALL BE COPOLYMER POLYPROPYLENE REINFORCED WITH 1/2 INCH A615/A615M-05A (OR LATEST EDITION) GRADE 60 STEEL REINFORCEMENT, MEETING OR EXCEEDING ASTM C 478-05 (OR LATEST EDITION) AND OSHA STANDARDS.

- 8. CATCH BASINS AND INLETS SHALL HAVE A MINIMUM INSIDE DIAMETER OF 24 INCHES AND SHALL BE CONSTRUCTED OF PRECAST CONCRETE UNITS IN ACCORDANCE WITH ASTM C478-05 (OR LATEST EDITION) AND SHALL CONFORM TO THE CITY OF NAPERVILLE STANDARD DETAIL. ALL CATCH BASINS AND INLETS SHALL BE WATER-TIGHT AT ALL POINTS BELOW GRADE. ALL VISIBLE LEAKS SHALL BE SEALED IN A MANNER ACCEPTABLE TO THE CITY ENGINEER. CATCH BASINS AND INLETS SHALL BE FURNISHED WITH A FRAME AND GRATE BASED UPON THE LOCATION OF THE INSTALLATION AS LISTED BELOW. ALL FRAMES AND
- GRATES SHALL MEET OR EXCEED AASHTO H-20 LOADING SPECIFICATIONS. FRAMES SHALL BE SHOP PAINTED WITH ASPHALTIC BASE PAINT.
- a. PAVEMENT: EAST JORDAN IRON WORKS 1022 FRAME WITH TYPE M1 RADIAL FLAT GRATE, OR APPROVED EQUAL.
- b. BARRIER CURB AND GUTTER: EAST JORDAN IRON WORKS 7220 FRAME WITH TYPE M1 GRATE AND T1 CURB BOX, OR APPROVED EQUAL.
- c. DEPRESSED CURB: EAST JORDAN IRON WORKS 5120 FRAME AND GRATE, OR APPROVED EQUAL.
- d. MOUNTABLE CURB: EAST JORDAN IRON WORKS 7525 FRAME AND GRATE, OR APPROVED EQUAL.
- e. NON-PAVED AREAS: EAST JORDAN IRON WORKS 6527 BEEHIVE GRATE, OR APPROVED EQUAL. ALTERNATELY, IN AREAS WHERE THERE IS THE LIKELIHOOD OF PEDESTRIAN TRAFFIC, EAST JORDAN IRON WORKS 1022 FRAME WITH TYPE M1 RADIAL FLAT GRATE, OR APPROVED EQUAL MAY BE USED.
- 9. ALL PIPE SHALL BE LAID TRUE TO LINE AND GRADE. DIRT AND OTHER FOREIGN MATERIAL SHALL BE PREVENTED FROM ENTERING THE PIPE OR PIPE JOINT DURING HANDLING OR LAYING OPERATIONS. ALL STORM SEWER PIPE TO PIPE CONNECTIONS SHALL BE SEALED WITH BUTYL MASTIC TO ENSURE WATER TIGHTNESS. LIFT HOLES TO BE SEALED USING BUTYL MASTIC AND CONCRETE PLUGS. AT NO TIME SHALL CONNECTIONS BETWEEN THE STORM SEWER AND SANITARY SEWER BE ALLOWED.
- 10. FOR STRUCTURES LOCATED IN PAVED AREAS, A MINIMUM OF FOUR, 2-INCH DIAMETER HOLES SHALL BE DRILLED OR PRECAST INTO THE STRUCTURE WITHIN 1 FOOT OF THE LOWEST PIPE INVERT. THE HOLES SHALL BE DISTRIBUTED EQUIDISTANT AROUND THE PERIMETER OF THE STRUCTURE. A 1-FOOT BY 1- FOOT SECTION OF UNDERDRAIN FILTER CLOTH MATERIAL SHALL BE SUFFICIENTLY FIXED TO THE OUTSIDE OF THE MANHOLE WITH MASTIC MATERIAL TO PREVENT SLIPPAGE DURING BACKFILLING.

ADJUSTMENTS MAY BE NECESSARY TO ENSURE THAT FRAMES AND GRATES MATCH THE ELEVATION OF THE SURROUNDING PAVEMENT OR GROUND SURFACE. PREFORMED ADJUSTING RINGS OF THE PROPER DIMENSIONS NEEDED TO MATE THE FRAME TO THE PRECAST STRUCTURE SHALL BE USED. NO MORE THAN 12 INCHES OF VERTICAL ADJUSTMENT MAY BE MADE USING THE MINIMUM PRACTICAL NUMBER OF INDIVIDUAL RINGS.

ALL RINGS SHALL BE HIGH DENSITY POLYETHYLENE PLASTIC (HDPE), RECYCLED RUBBER, HIGH DENSITY EXPANDING POLYSTYRENE, EXPANDED POLYPROPYLENE (EPP), OR OTHER MATERIAL AS APPROVED BY THE CITY ENGINEER. PRECAST CONCRETE RINGS, BRICKS, ROCKS, SHIMS, OR CONCRETE BLOCKS WILL NOT BE ALLOWED. TAPERED ADJUSTING RINGS SHALL BE REQUIRED WHEN THE FRAME WILL NEED TO MATCH THE SLOPE OF THE ROADWAY.

A RESILIENT, FLEXIBLE, NON-HARDENING, PREFORMED BITUMINOUS MASTIC MATERIAL, CONSEAL 102 B OR APPROVED EQUAL, SHALL BE USED BETWEEN THE CONE OR TOP BARREL SECTION OF THE STRUCTURE AND THE ADJUSTING RINGS. A THICK BEAD OF NON-HARDENING ELASTOMERIC JOINT SEALANT CONFORMING TO ASTM C-920, TYPE S, GRADE NS, SHALL BE APPLIED BETWEEN ALL INDIVIDUAL RINGS, AND BETWEEN THE ADJUSTING RINGS AND THE FRAME. THE SEALANT OR MASTIC MATERIAL SHALL BE APPLIED IN SUCH A MANNER THAT NO SURFACE WATER OR GROUND WATER INFLOW CAN ENTER THE STRUCTURE.

ALL STORM SEWER STRUCTURE FRAMES WITHOUT INSIDE FLANGES SHALL BE SHAPED WITH HYDRAULIC CEMENT OR ELASTOMERIC JOINT SEALANT TO FORM A FILLET TO THE STRUCTURE OR ADJUSTING RINGS AND TO MAINTAIN WATER-TIGHTNESS.

FRAME ADJUSTMENTS SHALL BE COMPLETED IN ACCORDANCE WITH SECTIONS 602 AND 603 OF STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. PREPARED BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION, LATEST EDITION, EXCEPT AS NOTED HEREIN.

EROSION CONTROL AND DRAINAGE NOTES (GENERAL)

- 1 THE CONTRACTOR SHALL MAINTAIN PROPER DRAINAGE AT ALL TIMES DURING THE COURSE OF CONSTRUCTION AND PREVENT STORM WATER FROM RUNNING INTO OR STANDING IN EXCAVATED AREAS.
- 2. DURING EXTENDED DRY PERIODS, THE CONSTRUCTION AREA(S) MAY NEED TO BE WATERED DOWN TO PREVENT THE BLOWING OF SOIL FROM THE SITE.
- ADVANCE WRITTEN NOTICE PRIOR TO PAVEMENT INSTALLATION TO ALLOW FOR THE INSTALLATION 3. DURING CONSTRUCTION, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE UTILIZED TO MINIMIZE THE TRACKING OF DIRT ONTO THE PUBLIC STREETS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OF ELECTRIC FACILITIES. GRADE ELEVATION MUST BE WITHIN 4" OF FINAL GRADING BEFORE KEEP PUBLIC STREET PAVEMENT CLEAN OF DIRT AND DEBRIS. ANY DIRT THAT IS TRACKED ONTO THE ELECTRIC FACILITIES CAN BE INSTALLED. PUBLIC STREETS SHALL BE REMOVED THE SAME DAY. IF THE AMOUNT TRACKED ON THE PUBLIC ELECTRIC FACILITIES SHALL BE INSTALLED PURSUANT TO SECTION 8-1C-3 OF THE CITY OF STREET IS EXCESSIVE, CLEANING MAY BE REQUIRED MORE FREQUENTLY.

EROSION CONTROL AND DRAINAGE NOTES (PROJECT SPECIFIC)

- 1. ALL EROSION CONTROL MEASURES SHALL BE PROPERLY INSTALLED, AS PERMITTED, PRIOR TO ANY LAND DISTURBANCE ACTIVITIES. ALL EROSION CONTROL SHALL BE MAINTAINED UNTIL TURF IS ESTABLISHED.
- 2. ACCEPTABLE PERIMETER EROSION CONTROL INCLUDES SILT FENCE, SILT WORM AND ANY OTHER APPLICATION APPROVED BY THE CITY ENGINEER.
- 3. ALL OPEN GRATE STRUCTURES SHALL HAVE EROSION CONTROL PROTECTION IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLANS. INLET BASKETS ARE THE PREFERRED METHOD: STRAW BALES SHALL NOT BE USED.
- 4. STOCKPILES NOT BEING DISTURBED FOR MORE THAN 14 DAYS SHALL BE SEEDED.
- 5. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY, AFTER ANY 0.5 INCH RAINFALL, OR MORE FREQUENTLY AS NECESSARY TO MAINTAIN THEIR FUNCTION.
- 6. IT IS THE RESPONSIBILITY OF THE OWNER OR HIS DESIGNEE TO INSPECT ALL TEMPORARY EROSION CONTROL MEASURES PER THE REQUIREMENTS OF THE NPDES PERMIT AND CORRECT ANY DEFICIENCIES AS NEEDED.

GEOMETRIC AND PAVING NOTES (GENERAL)

- 1. THE DEVELOPER AND CONTRACTOR SHALL HAVE THE RESPONSIBILITY TO ADEQUATELY PROTECT THE PAVEMENT AND PROPERTY, CURB AND GUTTER AND OTHER RIGHT-OF-WAY IMPROVEMENTS, WHETHER NEWLY CONSTRUCTED OR EXISTING, FROM ANY AND ALL DAMAGE. SUFFICIENT MEANS SHALL BE EMPLOYED BY THE CONTRACTOR TO PROTECT AGAINST SUCH DAMAGE TO THE SATISFACTION OF THE CITY ENGINEER.
- 16. A CUSTOMER'S GROUNDING CONDUCTOR SHALL NOT BE CONNECTED TO DPU-E DISTRIBUTION ANY NEW OR EXISTING IMPROVEMENTS THAT ARE DAMAGED SHALL BE REPAIRED OR REPLACED IN A EQUIPMENT. MANNER THAT IS SATISFACTORY TO THE CITY ENGINEER.
- 3. THE CONTRACTOR AND/OR DEVELOPER SHALL SECURE ALL NECESSARY RIGHTS AND PERMISSIONS TO PERFORM ANY WORK ON PRIVATE PROPERTY NOT WITHIN THE OWNERSHIP RIGHTS OF THE DEVELOPER. THE DEVELOPER SHALL BEAR THE SOLE RESPONSIBILITY FOR DAMAGES THAT MAY OCCUR AS A RESULT OF WORK PERFORMED UNDER CONTRACTS THEY INITIATE.
- 4. THE CONTRACTOR/DEVELOPER WILL BE RESPONSIBLE FOR BRINGING PAVEMENTS (STREET, CURB AND GUTTER, SIDEWALK, DRIVEWAY) ON THE PROPERTY UP TO CITY STANDARDS INCLUDING ANY REPAIRS TO SUBSTANDARD PAVEMENTS THAT EXISTED PRIOR TO OR OCCURRED DURING CONSTRUCTION.
- 5. WHEREVER NEW WORK WILL MEET EXISTING CONDITIONS OTHER THAN LAWN AREAS. REGARDLESS OF WHETHER THE NEW OR EXISTING WORK IS ASPHALT OR CONCRETE, THE EXISTING ADJACENT SIDEWALK, DRIVEWAYS, PAVEMENT OR CURB SHALL BE NEATLY SAW CUT. THE SAW CUT SHALL BE IN A NEAT STRAIGHT LINE SUFFICIENTLY DEEP SO THAT IT RENDERS A SMOOTH VERTICAL FACE TO MATCH TO. IF THE CONTRACTOR IS NOT CAREFUL OR DOES NOT SAW DEEP ENOUGH AND THE CUT LINE BREAKS OUT OR CHIPS TO AN IMPERFECT EDGE, THEN THE EXISTING SIDE MUST BE RE-CUT SOUARE AND DONE OVER UNTIL IT IS CORRECT.

TRAFFIC CONTROL AND PROTECTION NOTES (GENERAL)

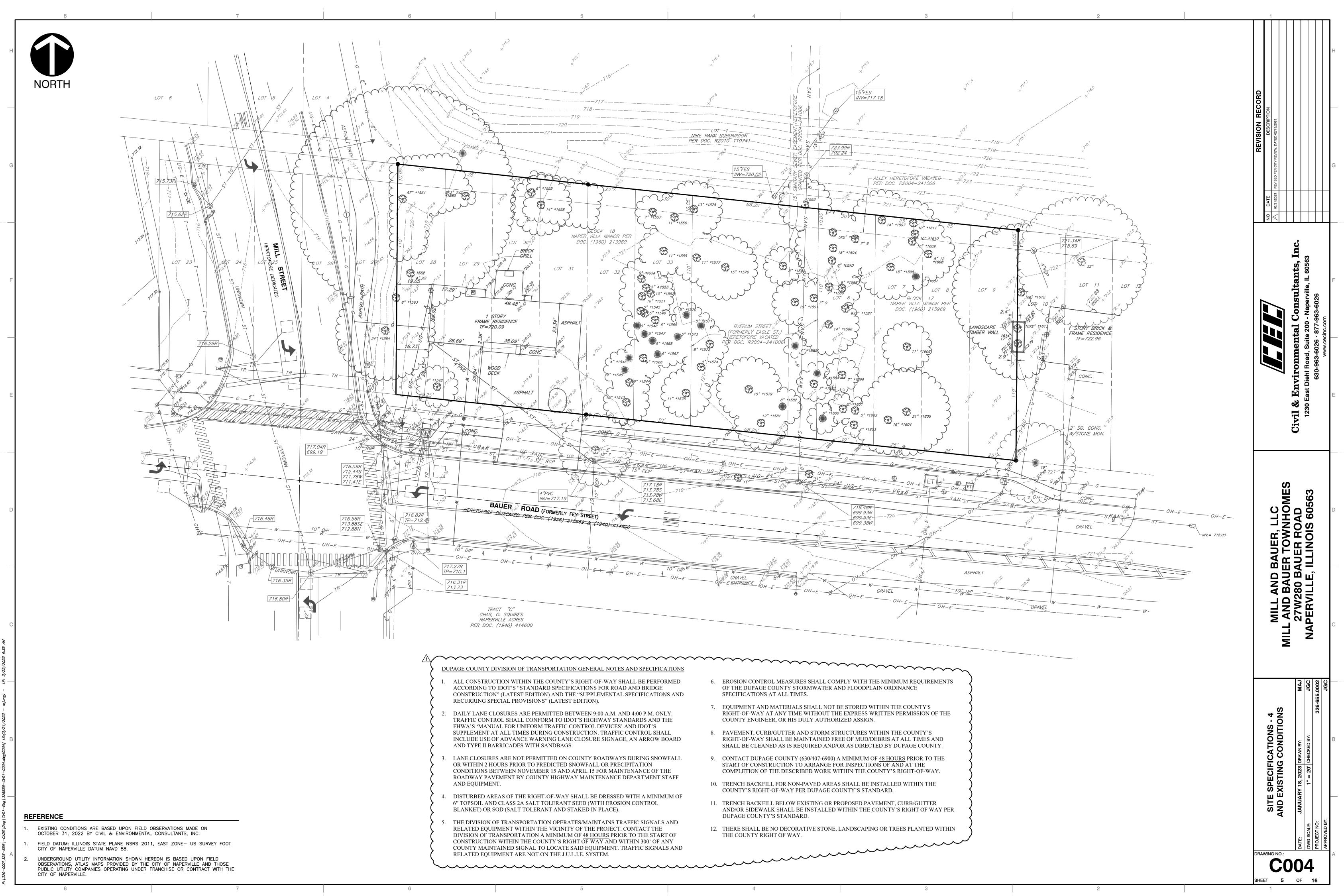
- 1. ALL DEVELOPERS AND CONTRACTORS SHALL PROVIDE SUITABLE TRAFFIC CONTROL FOR THEIR CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH PART 6 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. TRAFFIC CONTROL MUST BE PROVIDED FOR ANY ACTIVITY THAT IMPACTS TRAFFIC FLOW. THIS INCLUDES, BUT IS NOT LIMITED TO, ROAD CLOSURES REQUIRING DETOURS, DAILY LANE CLOSURES, LONG TERM LANE CLOSURES, NARROW LANES, AND CONSTRUCTION VEHICLES ENTERING AND EXITING THE PUBLIC ROADWAY. ALL TRAFFIC CONTROL SET- UPS MAY BE INSPECTED BY THE CITY OF NAPERVILLE TO ENSURE THAT THEY ARE PROVIDING POSITIVE GUIDANCE TO MOTORISTS AND ARE NOT IN THEMSELVES PRESENTING A HAZARDOUS SITUATION. A REPRESENTATIVE OF THE DEVELOPER OR CONTRACTOR MUST PROVIDE PHONE NUMBERS AT WHICH THEY CAN BE REACHED 24 HOURS A DAY AND ON WEEKENDS SO THAT THEY CAN MAINTAIN TRAFFIC CONTROL DEVICES.
- 2. PEDESTRIANS MUST BE PROVIDED WITH A SAFE ALTERNATE ROUTE IF PEDESTRIAN FACILITIES ARE TO BE CLOSED AS A RESULT OF CONSTRUCTION ACTIVITIES. GUIDANCE MUST BE PROVIDED TO PEDESTRIANS SO THAT THEY MAY AVOID THE WORK ZONE. SAID PEDESTRIAN DETOUR PLAN (WITH SIGNAGE) IS TO BE REVIEWED AND ACCEPTED BY THE CITY IN WRITING, PRIOR TO THE COMMENCEMENT OF THE WORK.
- 3. THE CONTRACTOR SHALL EMPLOY THE APPROPRIATE METHODS OF TRAFFIC CONTROL IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, SUCH THAT THE SAFETY OF VEHICLES, AND PEDESTRIANS IS PRESERVED AT ALL TIMES. THE ERECTION AND MAINTENANCE OF THE TRAFFIC CONTROL DEVICES SHALL BE TO THE SATISFACTION OF THE AGENCY OF JURISDICTION AND THE CITY ENGINEER.
- 4. ANY TEMPORARY OPEN HOLES SHOULD BE BARRICADED AND PROTECTED IN ACCORDANCE WITH APPLICABLE STANDARDS.
- 5. A MINIMUM 72 HOUR NOTICE IS REQUIRED FOR TRAFFIC CONTROL THAT REDUCES THE WIDTH OF A TRAVEL LANE LESS THAN 12 FEET OR CLOSES A LANE. APPROVAL FROM THE CITY ENGINEER WILL BE REQUIRED PRIOR TO THE IMPLEMENTATION OF SUCH TRAFFIC CONTROL LAYOUT.
- 6. LANE CLOSURES ON ARTERIAL ROADWAYS WITHIN THE CITY OF NAPERVILLE ARE NOT PERMITTED BETWEEN THE HOURS OF 6AM-9AM AND 3PM-7PM MONDAY THROUGH FRIDAY, UNLESS OTHERWISE PERMITTED BY THE CITY ENGINEER. LANE CLOSURES ON ARTERIAL STREETS ARE PERMITTED BETWEEN 7AM AND 7PM ON WEEKENDS, UNLESS OTHERWISE PERMITTED BY THE CITY ENGINEER. ARTERIAL ROADWAYS ARE DEFINED AS BOTH MAJOR AND MINOR ARTERIAL ROADWAYS AS DESIGNATED ON THE CITY'S MASTER THOROUGHFARE PLAN, LATEST EDITION.
- 7. ANY WORK THAT IMPACTS A TRAFFIC LANE ON AN ARTERIAL ROADWAY REQUIRES AN ARROWBOARD AS PART OF THE TRAFFIC CONTROL.
- 8. AT THE END OF EACH DAY OF WORK, THE ROADWAY MUST BE COMPLETELY REOPENED TO TRAFFIC. ANY OPEN HOLES MUST BE PLATED OR COLD PATCHED; THE CITY WILL NOT ALLOW THE HOLES TO BE FILLED WITH GRAVEL.

DEPARTMENT OF PUBLIC UTILITIES - ELECTRIC GENERAL NOTES

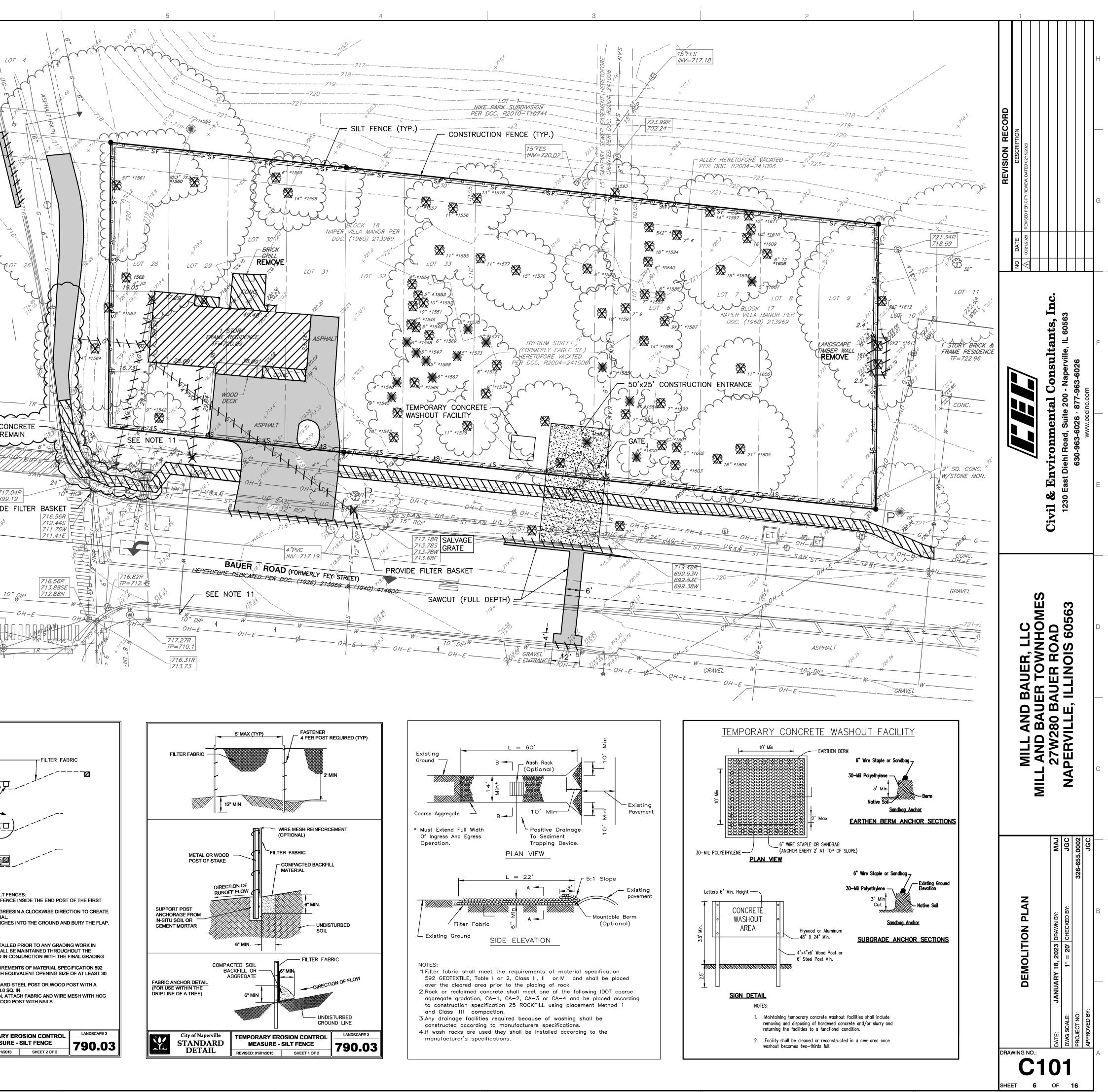
- THE DPUE ENGINEER FOR THIS PROJECT IS GIOVANNI HERNANDEZ. PLEASE CONTACT HIM AT (630)-548-1212 WITH ANY QUESTIONS REGARDING THE ELECTRIC SERVICE.
- THE DEVELOPER SHALL SUPPLY THE DPU-E ENGINEER WITH CATALOG CUTS FOR ALL CT/METER EQUIPMENT (INCLUDING BUT NOT LIMITED TO METER SOCKETS, PT CABINET, CT CABINET, DISCONNECT CABINET) AND TRANSFORMER PAD/VAULT. THE CATALOG CUTS SHALL BE APPROVED BY DPU-E PRIOR TO PURCHASING.
- THE CT/METER CABINET SHALL BE TOP FED.
- CT/METER EQUIPMENT ARE LONG LEAD TIME ITEMS AND DPU-E SHALL NOT BE HELD RESPONSIBLE FOR DELAYS RESULTING FROM NON-COMPLIANT CT/METER EQUIPMENT. PLEASE PROVIDE NAME AND CONTACT INFORMATION FOR ELECTRICAL CONTRACTOR FOR THIS
- PROJECT. DPUE WILL PROVIDE, INSTALL, AND MAINTAIN THE TRANSFORMERS, ALL PRIMARY (15KV) CABLE
- AND CONDUIT, AND THE METERS AND INSTRUMENT TRANSFORMERS. DPUE WILL ALSO MAKE THE FINAL CONNECTIONS IN THE TRANSFORMERS ONCE THE INSPECTION IS COMPLETE AND THE BUILDING IS READY TO BE ENERGIZED.
- THE DEVELOPER IS RESPONSIBLE FOR PROVIDING, INSTALLING, AND MAINTAINING THE TRANSFORMER PAD/VAULT, ALL SERVICE LATERAL (480V) CABLE AND CONDUIT, THE SERVICE ENTRANCE EQUIPMENT INCLUDING THE CT/METER CABINET AND ALL BANKED METER SOCKETS. THE DEVELOPER SHALL COORDINATE SITE CONSTRUCTION WITH DPU-E TO ALLOW ELECTRIC FACILITIES TO BE INSTALLED PRIOR PAVING AND CURBING. DPU-E REQUIRES 30 WORKING DAYS
- NAPERVILLE MUNICIPAL CODE. WHICH REOUIRES A CONSTRUCTION FEE PAYMENT FOR INSTALLATION OF ELECTRIC FACILITIES.
- 10. AT ALL TIMES, THE CUSTOMER SHALL BE SOLELY RESPONSIBLE FOR MAINTAINING A SUITABLE APPROACH TO THE METER LOCATION, WITH NO OBSTRUCTIONS WITHIN FOUR (4') FEET OF THE FRONT AND TWO (2') FEET OF THE SIDES OF THE METER. PER NAPERVILLE SERVICE RULES AND POLICIES 22.2.F.
- 11. CLEARANCE TO TRANSFORMER PAD SHALL BE 5' FROM ALL SIDES, 10' FROM FRONT, AND THE AREA ABOVE MUST BE COMPLETELY CLEAR OF OBSTRUCTION. NO TREES, SHRUBS, OR OTHER OBSTACLES WILL BE ALLOWED WITHIN THIS AREA. TRANSFORMER PAD SHALL MAINTAIN MINIMUM CLEARANCE OF 20' FROM EGRESS POINTS. PER DPUE SPECIFICATIONS C10-2130 AND C30-0016.
- 12. DPU-E REQUIRES A MINIMUM 5' OF SEPARATION BETWEEN ITS ELECTRIC FACILITIES AND ANY FIRE HYDRANTS STORM DRAINS, STORM SEWERS, WATER MAINS, GAS MAINS, ETC. THAT RUN PARALLEL TO ITS FACILITIES.
- 13. TO HAVE AN EXISTING SERVICE DISCONNECTED CALL THE CITY DISPATCH OFFICE AT 630-420-6187. PLEASE ALLOW AT LEAST 24 HOURS' NOTICE. METERS AND METER SEALS ARE TO BE REMOVED ONLY BY DPU-E PERSONNEL. THE LOCATION AND TYPE OF NEW OR REPLACEMENT METER RELATED EQUIPMENT MUST BE PRE-APPROVED IN WRITING BY DPU-E. AN ELECTRIC SERVICE MUST BE INSPECTED BY THE DEVELOPMENT SERVICES TEAM ELECTRICAL INSPECTOR PRIOR TO CONNECTION.
- 14. LABEL ALL METER SOCKETS WITH THE COMPLETE ADDRESS IN 1" LETTERS USING PERMANENT STICKERS. IN MULTIPLE METER BANKS, THE COMPLETE ADDRESS MAY BE ON THE DISCONNECT SWITCH AND THE SUITE NUMBERS ON THE METER SOCKETS. THE ELECTRICAL SERVICE EQUIPMENT WILL NOT PASS INSPECTION WITHOUT APPROPRIATE ADDRESS LABELING.
- 15. APPROVAL OF METERING EQUIPMENT BY DPU-E DOES NOT REMOVE YOUR RESPONSIBILITY TO COMPLY WITH THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE AS ADOPTED BY THE CITY OF NAPERVILLE. DETERMINATION OF COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE WILL BE MADE BY THE TRANSPORTATION, ENGINEERING AND DEVELOPMENT DEPARTMENT.
- DPU-E WILL INSTALL AND ENERGIZE ALL METERS IN A MULTIPLE METER BANK AT ONE TIME, PROVIDED ALL METER SOCKETS PASS INSPECTION. IN THE EVENT OF AN INCOMPLETE INSTALLATION, ONLY THE INSPECTED AND APPROVED EQUIPMENT SHALL BE ENERGIZED AND A METER INSTALLED. INDIVIDUAL TENANT PERMITS WILL BE REOUIRED FOR INSTALLATION OF THE OTHER METERS IN THE METER BANK.
- 18. DUE TO SUPPLY CHAIN ISSUES DPU-E IS EXPERIENCING LONG LEAD TIMES (+400 DAYS) ON TRANSFORMERS. PLEASE TAKE THIS INTO CONSIDERATION WHEN PLANNING CONSTRUCTION
- 19. THE DEVELOPER IS RESPONSIBLE FOR THE CONSTRUCTION AND INSTALLATION OF A TRANSFORMER PAD AND VAULT. THE DUP-E ENGINEER MUST BE INFORMED PRIOR TO THE INSTALLATION OF THE PAD AND VAULT. A MAIN DISCONNECT OR CIRCUIT BREAKER IS REQUIRED FOR DPU-E ACCESS IN CASE OF A NEED FOR SERVICE OR IN AN EMERGENCY. DPU-E SHALL MAKE THE FINAL CONNECTIONS OF THE CUSTOMER'S SERVICE TO THE TRANSFORMER TERMINALS. A MINIMUM OF EIGHT FEET OF ADDITIONAL CONDUCTOR LENGTH MUST BE LEFT ON THE CUSTOMER'S SERVICE CABLES.

REVISION RECORD	NO DATE DESCRIPTION	1 03/21/2023 REVISED PER CITY REVIEW, DATED 02/15/2023							н G
					CIVII & Environmental Consultants, Inc.	1230 East Diehl Road, Suite 200 - Naperville, IL 60563	630-963-6026 · 877-963-6026	www.cecinc.com	F
					CIVIL & ENVIRONM	1230 East Diehl Road,	630-963-6	MMN	E
		MILL AND BAUER, LLC			27W280 BAUER ROAD	NAPERVILLE. ILLINOIS 60563			D
					27W280	NAPERVILLE			С
		SITE SPECIFICATIONS - 3			JANUARY 18, 2023 DRAWN BY: MAJ	NONE CHECKED BY: JGC	326-655.0002	JGC	В
DRAV			0.:	0	DATE:	DWG SCALE:	PROJECT NO:	APPROVED BY:	А

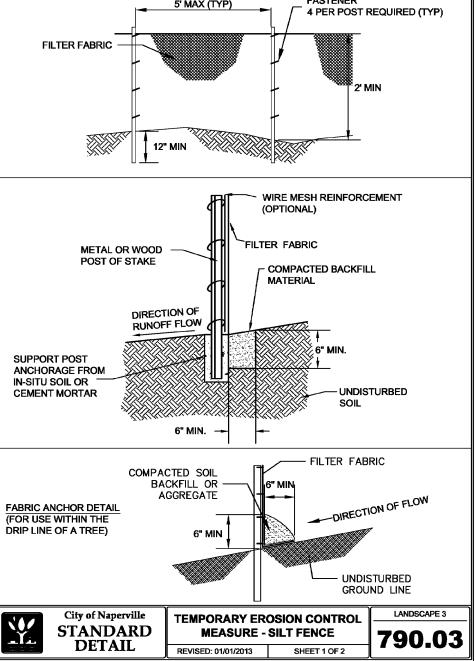
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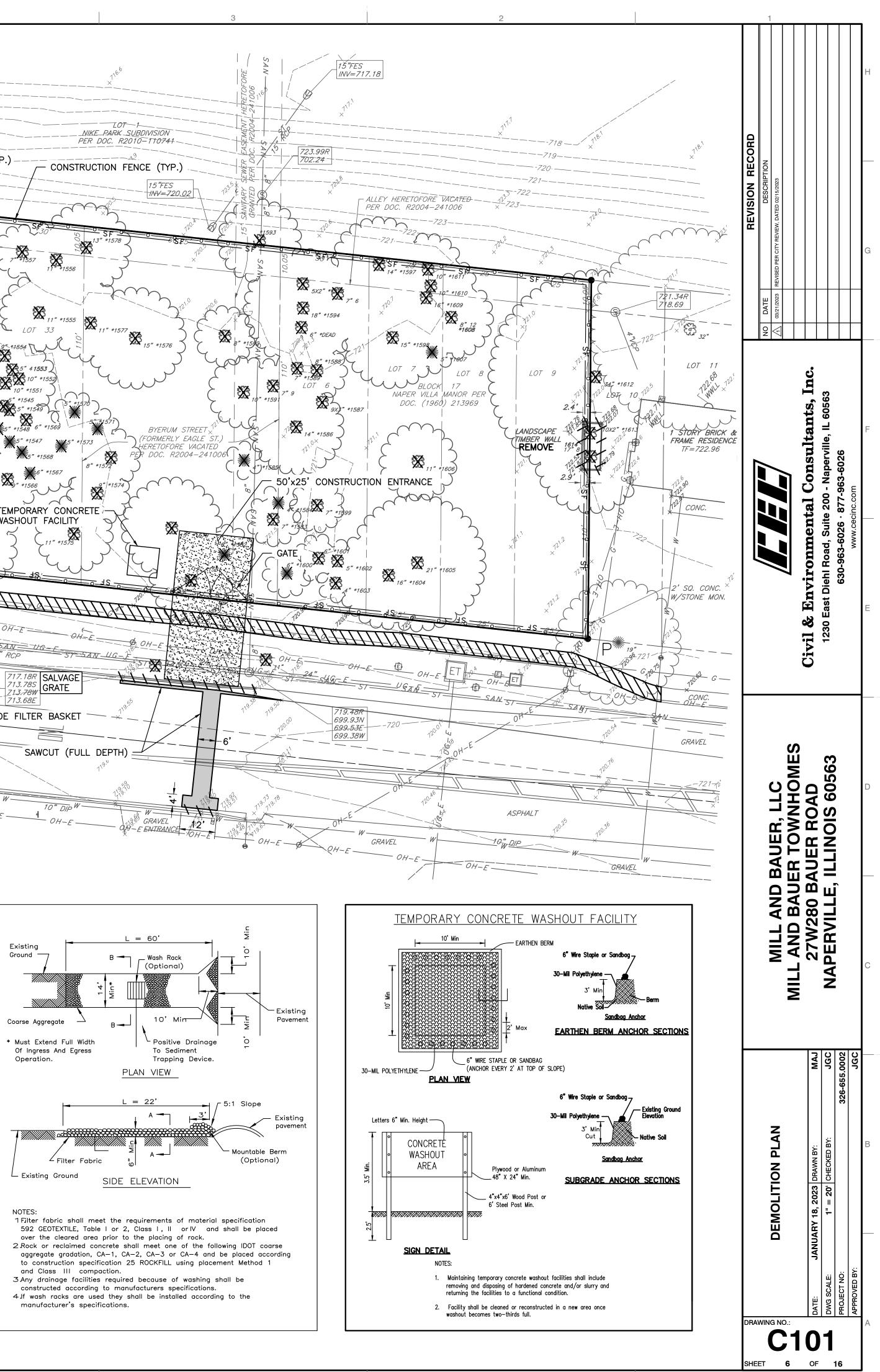


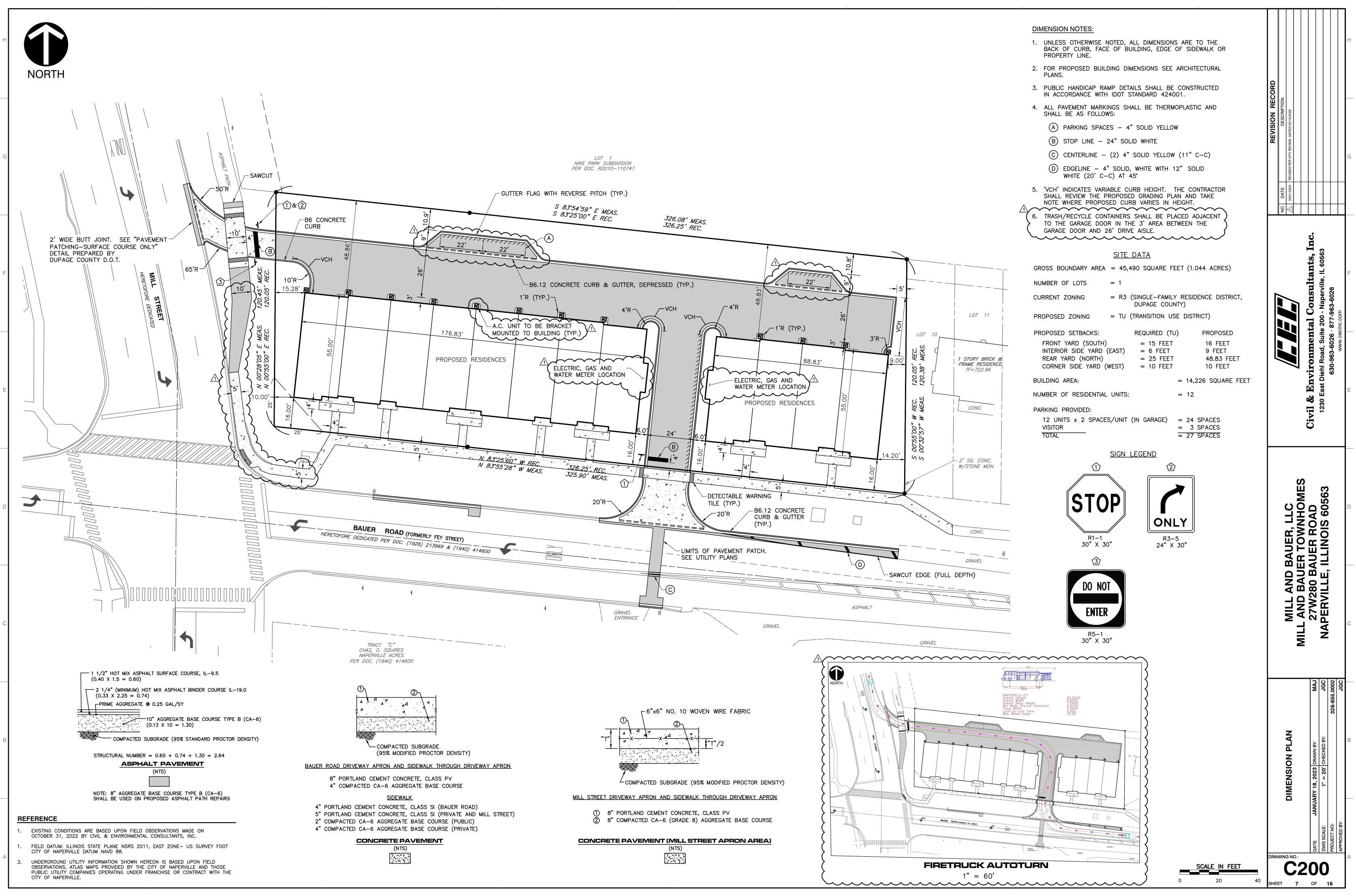
Н			BITUMINOUS PAVEMENT REMOVAL		LOT 5
	NORTH		INDICATES CONCRETE ITEM, RETAINING/STONE WALL OR UTILITY		110^{-00} 115^{-0} 115^{-0} 115^{-0} 115^{-0} 115^{-0}
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		X	INDICATES NON-CONCRETE ITEM, STRUCTURE, OR TREE TO BE REMOV	'ED	
			TREES TO BE PROTECTED WITH FEN		
G		SF	SILT FENCE		
	DEMOLITION NOTES:	oo	CONSTRUCTION FENCE (CHAIN LINK)		
	REMOVAL ITEMS SHOWN OUTSI CONSTITUTE ALL WORK NECES ROADWAYS, DRIVEWAYS, CURB	DE OF THE PROPERTY SARY TO CONSTRUCT & GUTTER, PUBLIC U	SUBJECT PROPERTY SHALL BE COMPL LIMITS ARE APPROXIMATE AND MAY C THE PROJECT. REMOVAL OF PUBLIC SI ITILITIES, ETC., SHALL BE STAGED BY T AND THE CITY OF NAPERVILLE STAFF.	DR MAY NOT DEWALKS,	T 24 9 LOP FORE DEDIC
	EXISTING UTILITIES SHALL BE	BACKFILLED IN ACCOR	PAD AREAS, RESULTING FROM THE REI DANCE WITH THE APPLICABLE REQUIRE R ROAD AND BRIDGE CONSTRUCTION.		UNKNOWN
F	CONCRETE SLABS, AND SIDEW	ALKS SHALL BE COMP	LIMITS, INCLUDING BITUMINOUS PAVEM PLETELY REMOVED. AGGREGATE MATERIA SET ASIDE FOR FUTURE PLACEMENT.	IENT, DRIVEWAYS LS APPROVED AS	
	TREE STUMPS AND/OR ROOT	BALLS SHALL BE COM	HIN THE CONSTRUCTION LIMITS SHALL IPLETELY REMOVED. TREES TO REMAIN NTRACTOR SHALL VISIT THE SITE PRIOR	SHALL BE	56 ³⁵
	RESPONSIBLE FOR VERIFYING SHALL BE SOLELY RESPONSIB	ALL EXISTING UTILITY LE FOR ANY DAMAGE E WHETHER THESE UT	EST AVAILABLE INFORMATION. THE CONT LOCATIONS PRIOR TO CONSTRUCTION. TO EXISTING UTILITIES THAT ARE INTEN TILITIES ARE SHOWN ON THE PLANS OF	THE CONTRACTOF	C G G G G G G G G G G G G G G G G G G G
	7. ALL WORK SHALL BE DONE IN	N GENERAL ACCORDAN	OFF SITE AND DISPOSED OF BY LEGAL	EMENTS	
E	SHALL INSTALL THE NECESSAF EXISTING STORM SEWERS, PUE FROM THE PROPOSED DEMOLI BASKETS INSERTED INTO DRAIL	RY EROSION AND SEDI BLIC ROADWAYS, AND A TION AND/OR CONSTR NAGE STRUCTURES, CO	SEDIMENTATION CONTROL" ORDINANCE. MENTATION CONTROL DEVICES THAT WIL ADJACENT PROPERTIES FROM SEDIMENT UCTION. DEVICES SHALL INCLUDE SILT DNSTRUCTION ENTRANCE, PAVEMENT CL RATELY BUT SHALL BE CONSIDERED IN	L PROTECT THE THAT MAY ARIS FENCE, FILTER EANING, ETC. TH	E STUNKNOW PROVID
	CONCRETE TRUCKS SHALL NO DRUM WASH WATER ON SITE. CONTRACTOR AND PROVIDED V	T BE PERMITTED TO W SPECIFIC AREAS FOR WITH ADEQUATE SILTAT	PUMPED INTO SEDIMENT BASINS OR SIL VASH OUT OR DISCHARGE SURPLUS CO THIS ACTIVITY SHALL BE DESIGNATED E ION BASINS AND OTHER FACILITIES TO ENTERING THE RECEIVING STORM SEWER	NCRETE OR BY THE ASSURE THAT	°,60 °,60 1,10 √,716.46R
	STREETS DAILY AND CLEAN TH	IEM AS NECESSARY.	F MUD/DEBRIS. THE CONTRACTOR SH		
D	ENTRANCE. THE FENCE WILL E INSTALLATIONS, ROADWAY WOR OF EACH DAY TO PROVIDE A	BE REMOVED AND REP K, ETC. DURING WORK SECURE CONSTRUCTIO		ITILITY ED AT THE END	
	REQUIREMENTS.		OFF SERVICE AT THE MAIN AND ABAND		/ [=======] [[=]/]]
			OCUMENTATION PROVIDED TO THE CITY		-
С		STANDARD 2" OVERFLOW AREA	LIFT HANDLES		
	C REAR CURB	GUARD FLAP TIC TIE-DOWNS	STAINLESS STEEL CLAMPING BAND 2-PLY REPLACEABLE SEDIMENT BAOS WITH GEOTEXTILE FILTER FABRIC	c	STEP 1 POSTS
	TYPICAL CURB BOX INLET FILTER IPP FLe Xstorm Inlet Filter Specifications	TYPICAL FLAT/RECTANGU INLET FILT		►	STEP 3
В	Grab TensileASTM D 4632100 lbs20Puncture StrengthASTM D 483365 lbs90Trapezoidal TearASTM D 453345 lbs70UV ResistanceASTM D 435570% at 500 hrs50Ann Onen Size (AOS)ASTM D 475170 sieve40	en Mono 0 lbs 0 lbs 5 lbs 30% sieve	INSTALLATION: 1. REMOVE GRATE 2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE 3. REPLACE GRATE		STEPS FOR THE ATTACHMENT OF TWO SILT 1. PLACE THE END POST OF THE SECOND FE FENCE. 2. ROTATE BOTH POSTS AT LEAST 180 DEGF A TIGHT SEAL WITH THE FABRIC MATERIA 3. DRIVE BOTH POSTS A MINIMUM OF 18 INC
	Permittivity ASTM D 4491 2.0 / sec 2.1		Drawie ALL PRODUCTS MANUFACTU BY INLET & PIPE PROTECTI 1635 TONNE RD ELK GROVE WWW.INLETFILTERS.COM (847) 722-0690 PH (847) 720-0690 PH (847) 740 PH	, IL A	NOTES: 1. TEMPORARY SILT FENCE SHALL BE INSTA THE AREA TO BE PROTECTED. THEY SHAI CONSTRUCTION PERIOD AND REMOVED II AND SITE STABILIZATION. 2. FILTER FABRIC SHALL MEET THE REQUIR GEOTEXTILE TABLE 1 OR 2, CLASS I WITH FOR NON-WOVEN OR 50 FOR WOVEN. 3. FENCE POSTS SHALL BE EITHER STANDAU
	REFERENCE	- P	1		MINIMUM CROSS-SECTIONAL AREA OF 3.0 4. DEPENDING UPON THE CONFIGURATION, RINGS, STEEL POST WITH TIE WIRES, WO
	 EXISTING CONDITIONS ARE BASED UPON OCTOBER 31, 2022 BY CIVIL & ENVIRO FIELD DATUM: ILLINOIS STATE PLANE N CITY OF NAPERVILLE DATUM NAVD 88. 	ONMENTAL CONSULTANTS, IN	IC.		City of Naperville STANDARD DETAIL
A	2. UNDERGROUND UTILITY INFORMATION SH OBSERVATIONS, ATLAS MAPS PROVIDED PUBLIC UTILITY COMPANIES OPERATING CITY OF NAPERVILLE.	BY THE CITY OF NAPERVIL	LE AND THOSE		DETAIL REVISED: 01/01/2



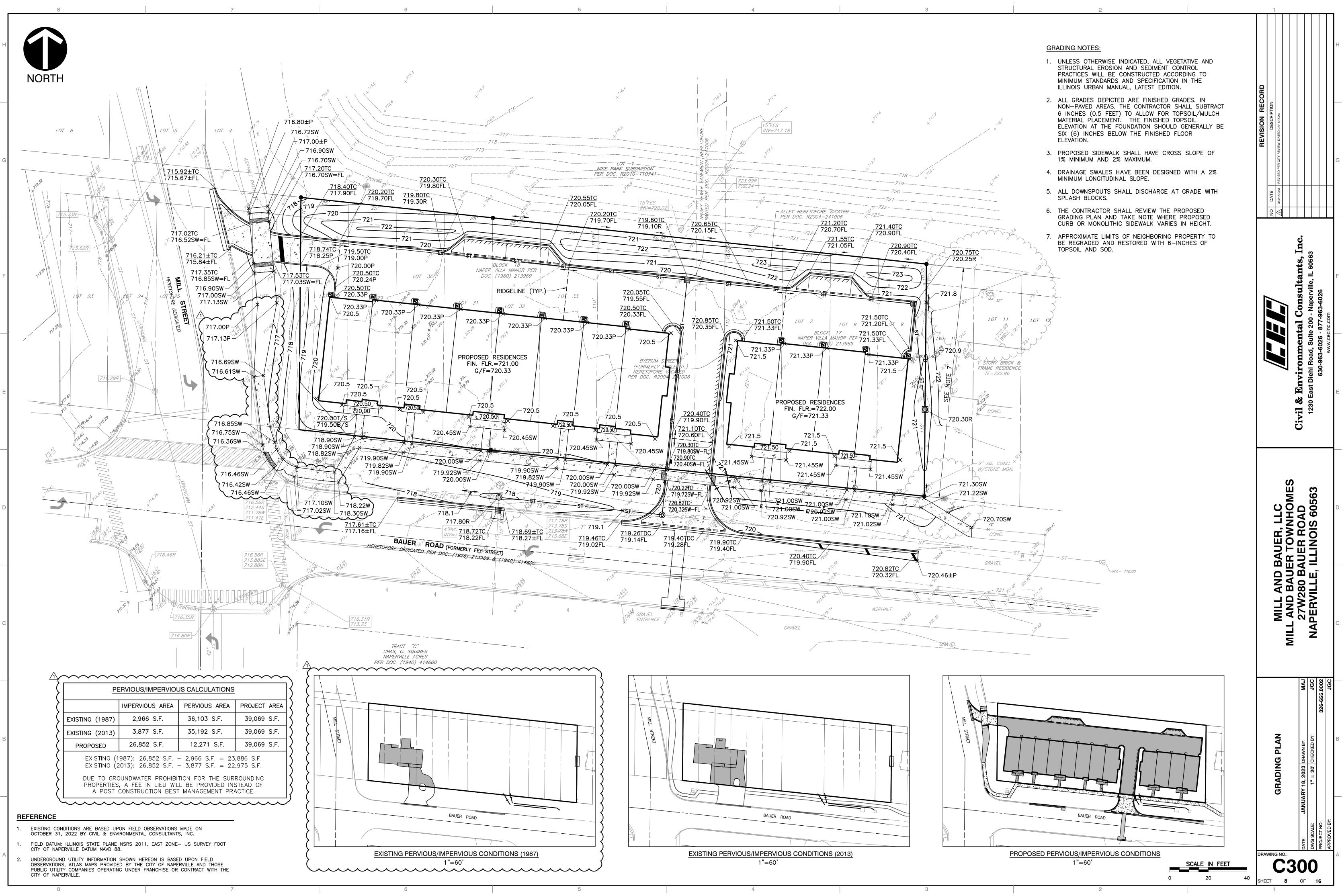


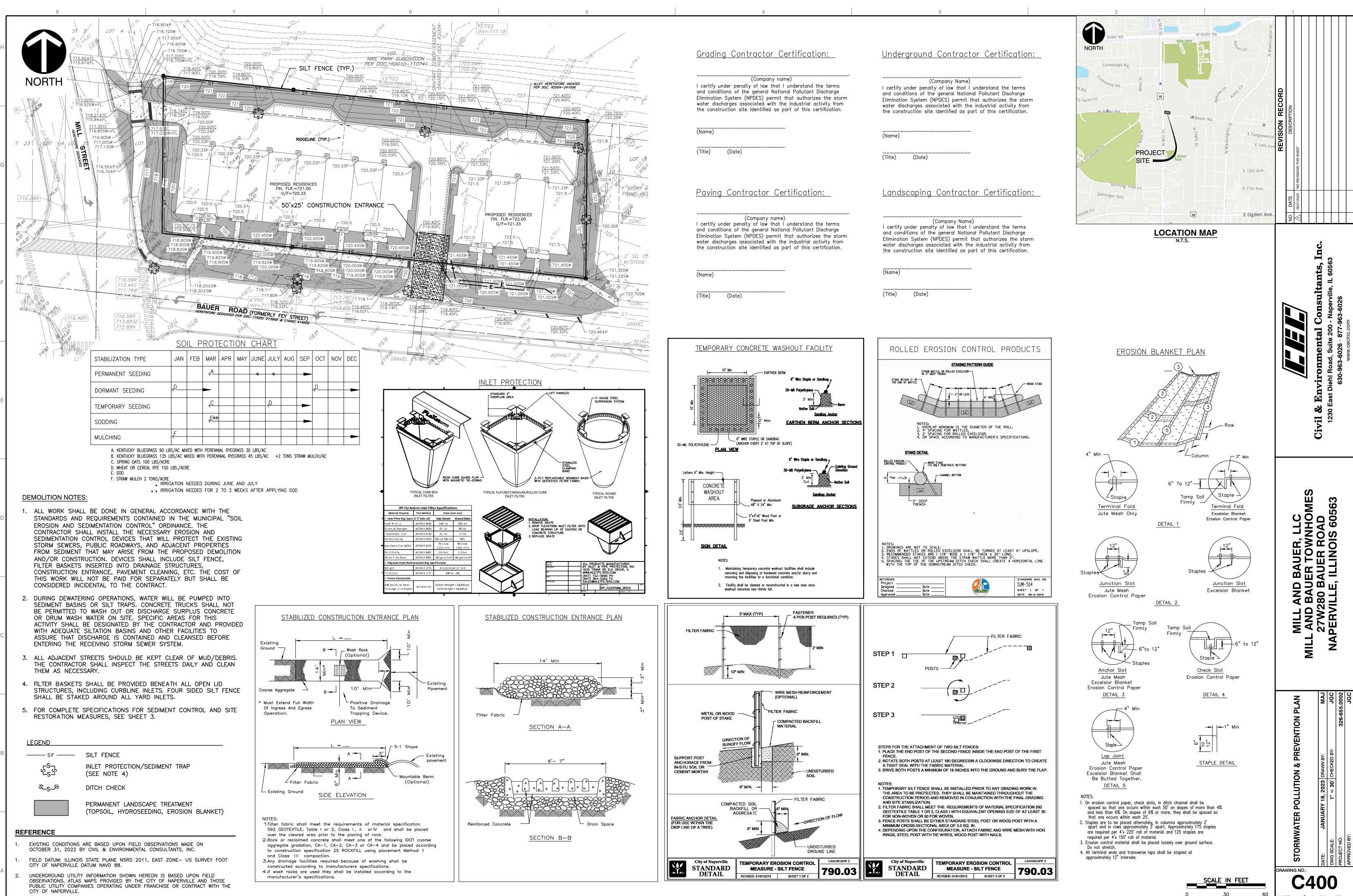






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UTILITY NOTES:

- 1. CONFLICT AREAS BETWEEN THE PROPOSED IMPROVEMENTS AND EXISTING ELECTRIC, TELEPHONE, CABLE AND GAS HAVE BEEN SHOWN ON THE PLANS. THE UNDERLYING UTILITY OWNER SHALL REVIEW THE PROPOSED IMPROVEMENTS AND MAKE HIS/HER OWN DETERMINATION ON RELOCATION, MAINTAINING SERVICE FOR EXISTING CUSTOMERS, ETC.
- 2. CONFLICT ELEVATIONS ASSUMED IN CROSSINGS (5) AND (6) ARE BASED ON NOMINAL DEPTH OF COVER TYPICALLY FOUND FOR THOSE UTILITIES. THE CONTRACTOR SHALL LOCATE, EXPOSE AND SURVEY UTILITY CROSSING ELEVATIONS AND REPORT HIS/HER FINDINGS TO THE ENGINEER PRIOR TO ORDERING THE STORM SEWER STRUCTURES.
- 3. WITH THE EXCEPTION OF WHERE DESIGNATED AS 'PUBLIC', ALL PROPOSED STORM SEWER SHALL BE PRIVATELY OWNED AND MAINTAINED.
- 4. THE STEEL CASING PIPE SHALL HAVE A MINIMUM WALL THICKNESS OF 0.375 INCHES, SHALL MEET HE REQUIREMENTS OF ASTM A-139, GRADE B AND SHALL BE BITUMINOUS COAT INSIDE AND OUT.

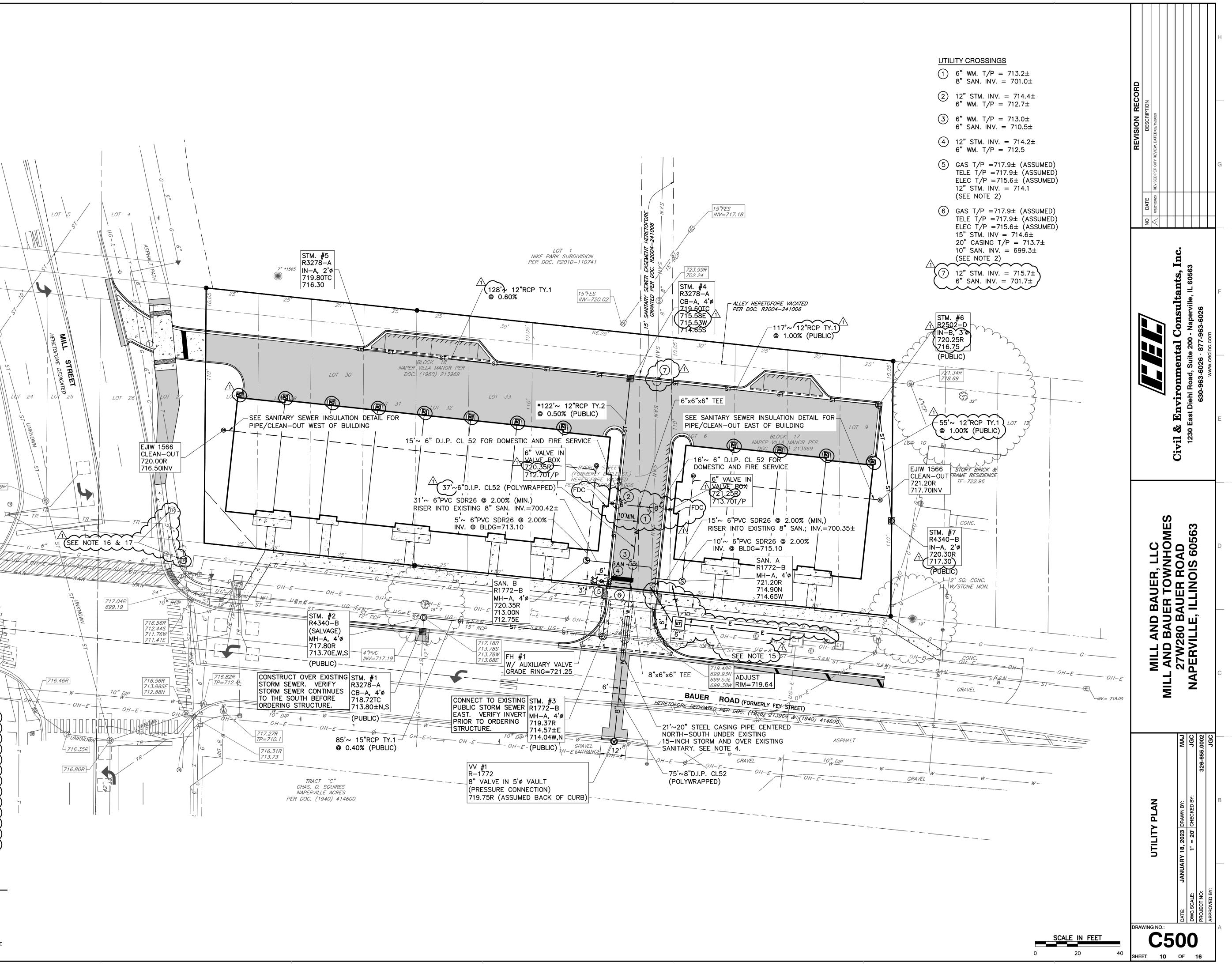
MANUFACTURED NON-METALLIC SPACERS SHALL BE USED TO SUPPORT THE PIPE WITHIN THE CASING AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION. A MINIMUM OF TWO SUPPORTS SHALL BE USED PER JOINT OF PIPE FOR LENGTHS UP TO 12.5 FEET, AND A MINIMUM OF THREE SUPPORTS SHALL BE USED PER JOINT FOR LENGTHS GREATER THAN 12.5 FEET. THE ANNULAR SPACE SHALL BE FILLED WITH PEA GRAVEL, LOW STRENGTH GROUT, OR CELLULAR FOAM CONCRETE WITH NO VOIDS REMAINING IN THE CASING PIPE. A MEMBER OF DPU-WATER SHALL WITNESS THE ANNULAR SPACING FILLING OPERATIONS.

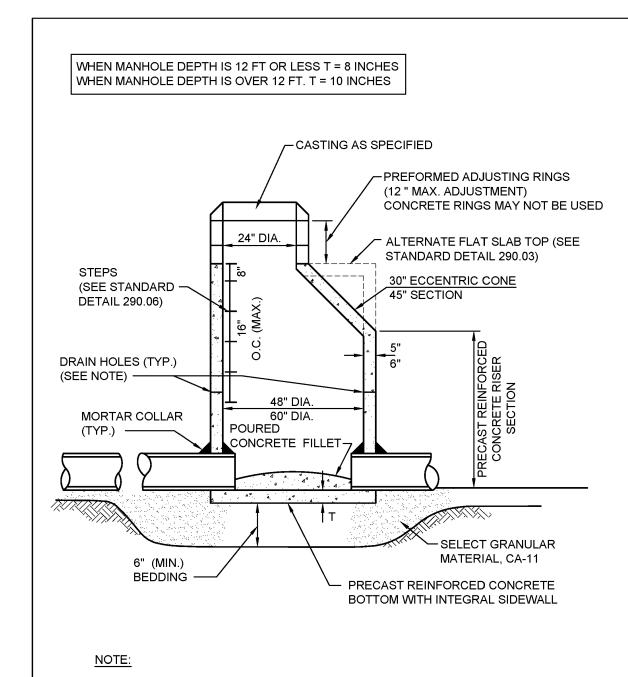
PAYMENT FOR "CASING PIPE, 20-INCH" SHALL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT, WHICH SHALL INCLUDE ALL MATERIAL, EQUIPMENT, AND LABOR TO FURNISH AND INSTALL THE INSTALLATION NOTED ABOVE.

- 5. ALL DUCTILE IRON PIPE, FITTINGS, ETC., SHALL BE POLYWRAPPED.
- 6. ALL BENDS SHALL BE PROVIDED WITH 'MEGA—LUG' TYPE FLANGES AND SHALL HAVE PROPER BLOCKAGE.
- 7. THE CONTRACTOR SHALL PROVIDE INLET FILTER BASKETS BENEATH ALL OPEN LID STRUCTURES TO MINIMIZE INTRUSION OF DEBRIS/SILT INTO THE STORM SEWER SYSTEM.
- 8. UPON COMPLETION OF THE UTILITY INSTALLATIONS, THE PUBLIC RIGHT OF WAY SHALL BE RESTORED TO ITS ORIGINAL CONDITION. THIS SHALL INCLUDE BUT NOT BE LIMITED TO 6 INCH TOPSOIL PLACEMENT, HYDROSEED, DRIVEWAY REMOVAL AND REPLACEMENT, SIDEWALK REMOVAL AND REPLACEMENT, AND LANDSCAPING REMOVAL AND REPLACEMENT.
- THE PROPOSED WATERMAIN CROSSING SHALL BE CONSTRUCTED UNDER A ONE-LANE ROAD CLOSURE. THE TIMING OF WHICH SHALL BE COORDINATED WITH CITY STAFF. SEE URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED STANDARD 701-501.
- 10. SEE SHEET C802 FOR CITY OF NAPERVILLE STANDARD DETAIL 590.13 UTILITY TRENCH PAVING SECTION (FLEXIBLE PAVEMENTS).
- 11. CLEANOUT RISERS ARE REQUIRED ON EACH SANITARY SERVICE. THE RISERS SHALL BE INSULATED AND ENCLOSED IN A SERVICE BOX, EJIW 1566, OR APPROVED EQUAL.
- 12. ALL CASTINGS SHALL BE SHOP PAINTED WITH ASPHALTIC BASE PAINT.
- 13. "*" DENOTES STORM SEWER TO BE CONSTRUCTED WITH REINFORCED CONCRETE LOW-HEAD PRESSURE PIPE (ASTM C361) WITH JOINTS FOR CIRCULAR CONCRETE SEWER USING RUBBER GASKETS (ASTM C443)
- 14. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN INSTALLING PROPOSED INFRASTRUCTURE NEAR THE OVERHEAD UTILITIES LOCATED IN THE NORTH PARKWAY OF BAUER ROAD.
- 15. THE PROPOSED TRANSFORMER LOCATION IS NEAR VEHICULAR TRAFFIC. THE DEVELOPER IS RESPONSIBLE FOR PROVIDING AND INSTALLING 8-INCH BOLLARDS PER DPU-ELECTRIC SPECIFICATION C10-2222.
- 16. THE EXISTING PEDESTRIAN PUSH-BUTTON DETECTOR SHALL BE RELOCATED FROM THE EXISTING MAST ARM TO A PROPOSED PEDESTRIAN POST. MS. MARYANNE SIOSON, DUPAGE COUNTY'S TRAFFIC SIGNAL ENGINEER (630/407-6908) SHALL BE CONTACTED 48 HOURS IN ADVANCE OF INSTALLATION SO THAT THE PROPOSED POST LOCATION CAN BE REVIEWED AND APPROVED.
- 17. THE TRAFFIC SIGNAL MODIFICATIONS MUST BE INSTALLED BY AN IDOT PRE-QUALIFIED ELECTRICAL CONTRACTOR. THE OWNER SHALL PROVIDE THE ELECTRICAL CONTRACTOR'S NAME AND CONTACT INFORMATION (IN ADDITION TO THE GENERAL CONTRACTOR INFORMATION) WHEN COMPLETING THE APPLICATION FOR HIGHWAY PERMIT.

REFERENCE

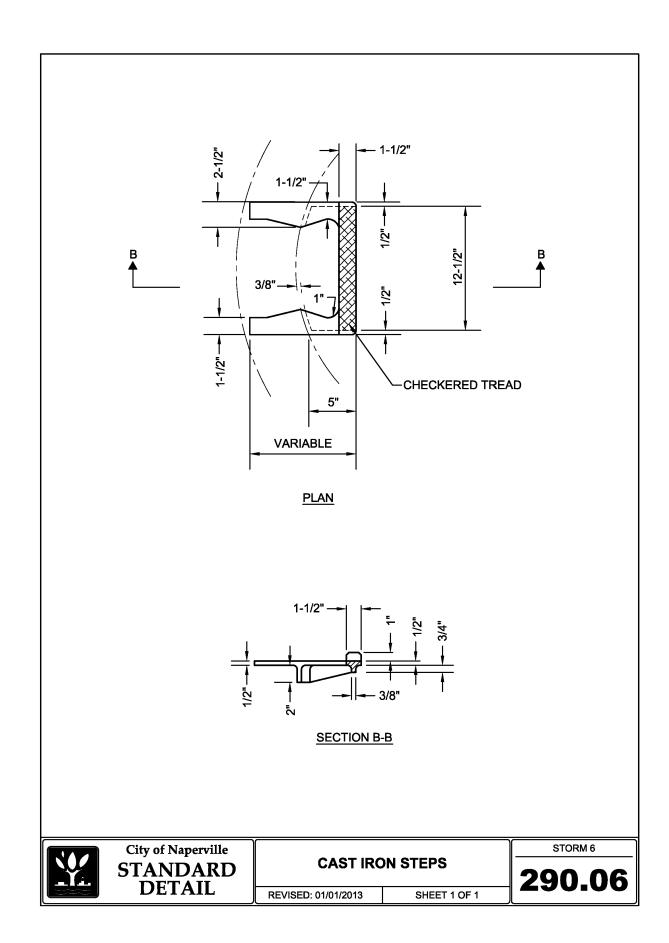
- 1. EXISTING CONDITIONS ARE BASED UPON FIELD OBSERVATIONS MADE ON OCTOBER 31, 2022 BY CIVIL & ENVIRONMENTAL CONSULTANTS. INC.
- 1. FIELD DATUM: ILLINOIS STATE PLANE NSRS 2011, EAST ZONE- US SURVEY FOOT CITY OF NAPERVILLE DATUM NAVD 88.
- 2. UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON FIELD OBSERVATIONS, ATLAS MAPS PROVIDED BY THE CITY OF NAPERVILLE AND THOSE PUBLIC UTILITY COMPANIES OPERATING UNDER FRANCHISE OR CONTRACT WITH THE CITY OF NAPERVILLE.

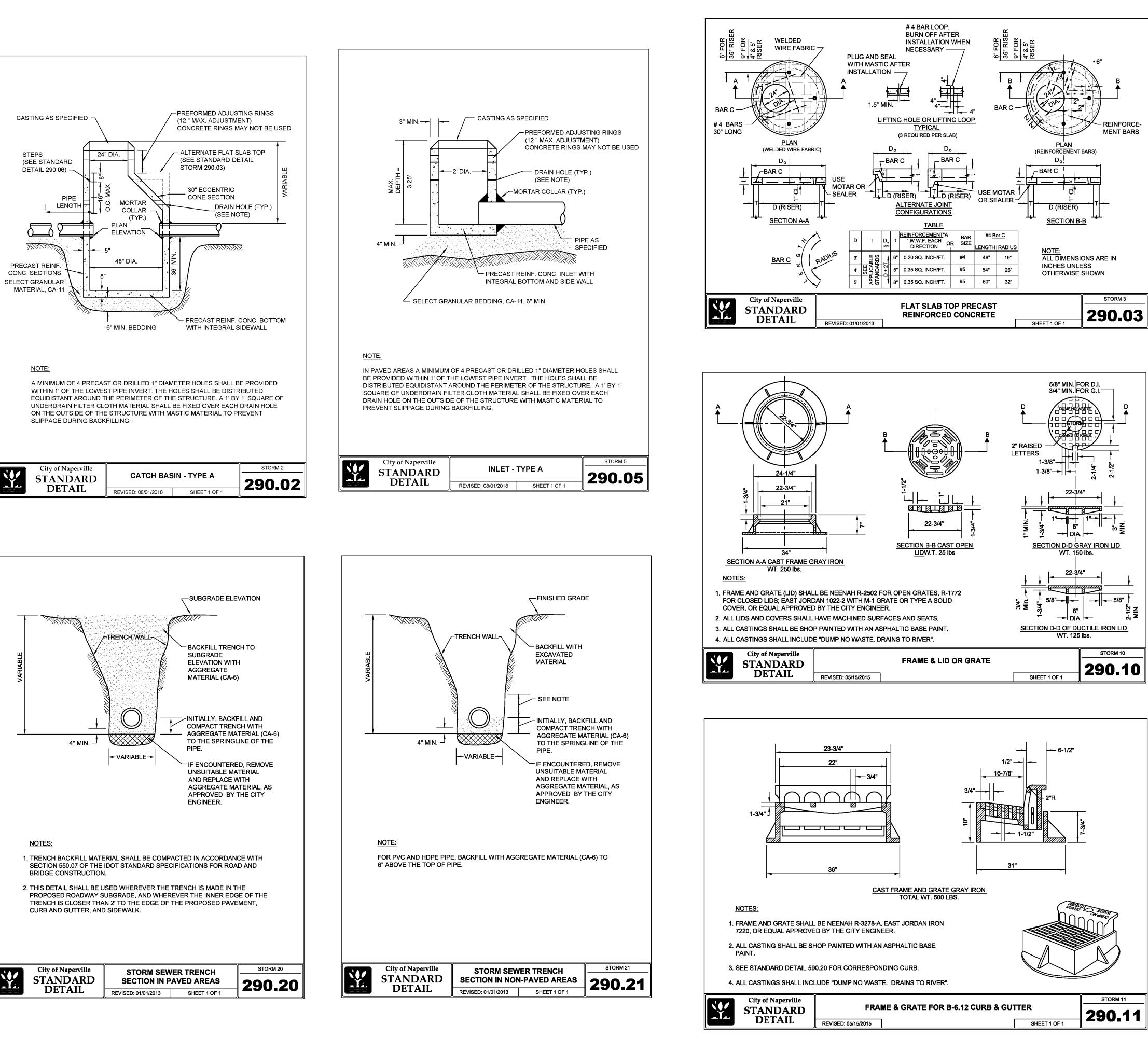


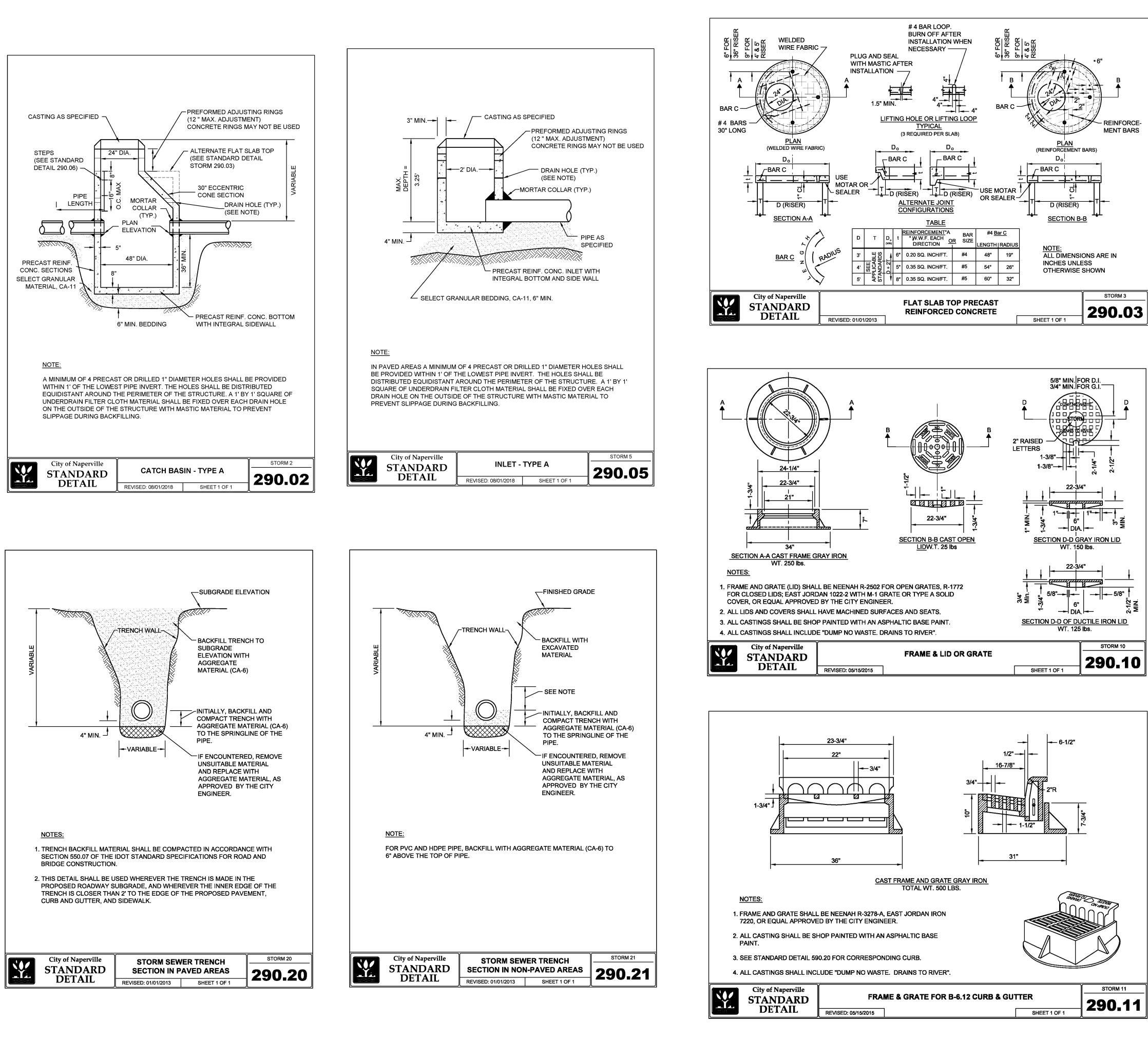


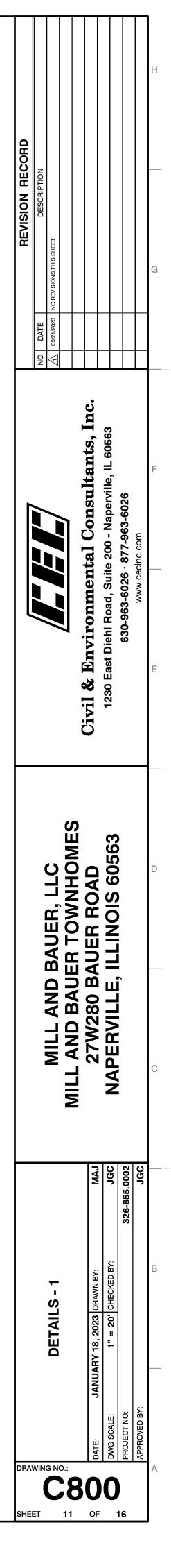
A MINIMUM OF 4 PRECAST OR DRILLED 1" DIAMETER HOLES SHALL BE PROVIDED WITHIN 1' OF THE LOWEST PIPE INVERT. THE HOLES SHALL BE DISTRIBUTED EQUIDISTANT AROUND THE PERIMETER OF THE STRUCTURE. A 1' BY 1' SQUARE OF UNDERDRAIN FILTER CLOTH MATERIAL SHALL BE FIXED OVER EACH DRAIN HOLE ON THE OUTSIDE OF THE STRUCTURE WITH MASTIC MATERIAL TO PREVENT SLIPPAGE DURING BACKFILLING.

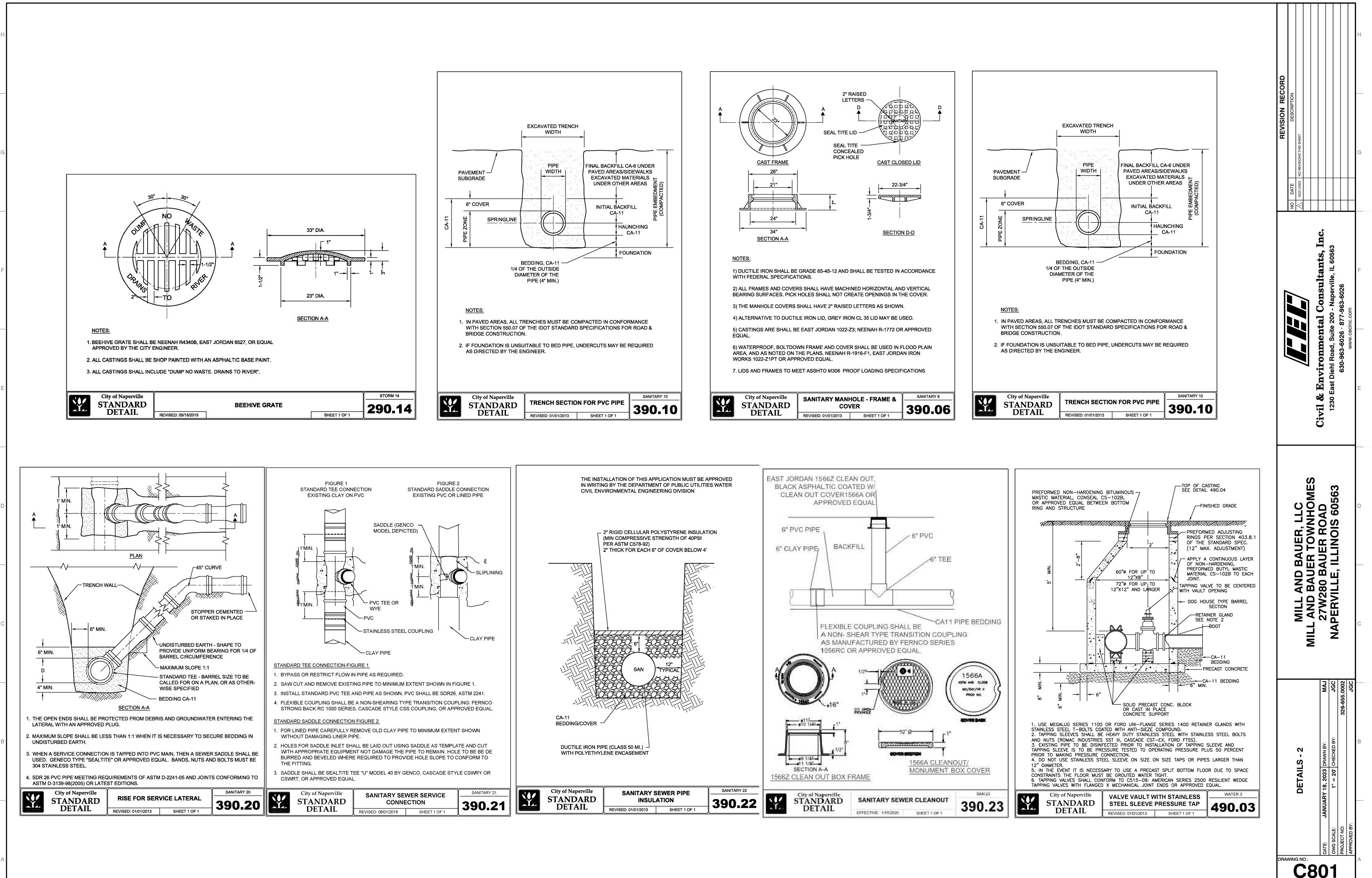
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Y	STANDARD	TYPE A		290.01
	DETAIL	REVISED: 08/01/2018	SHEET 1 OF 1	







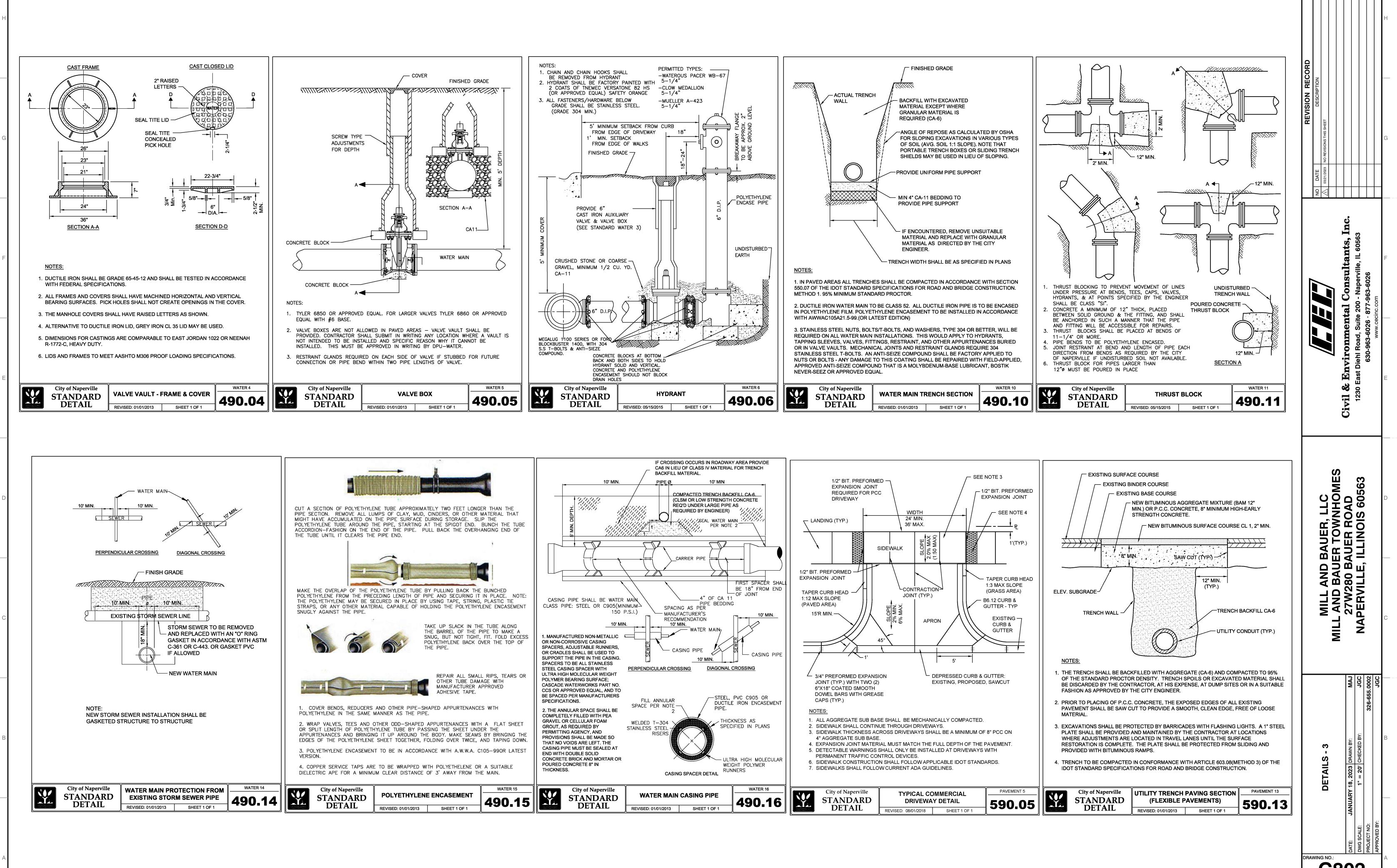




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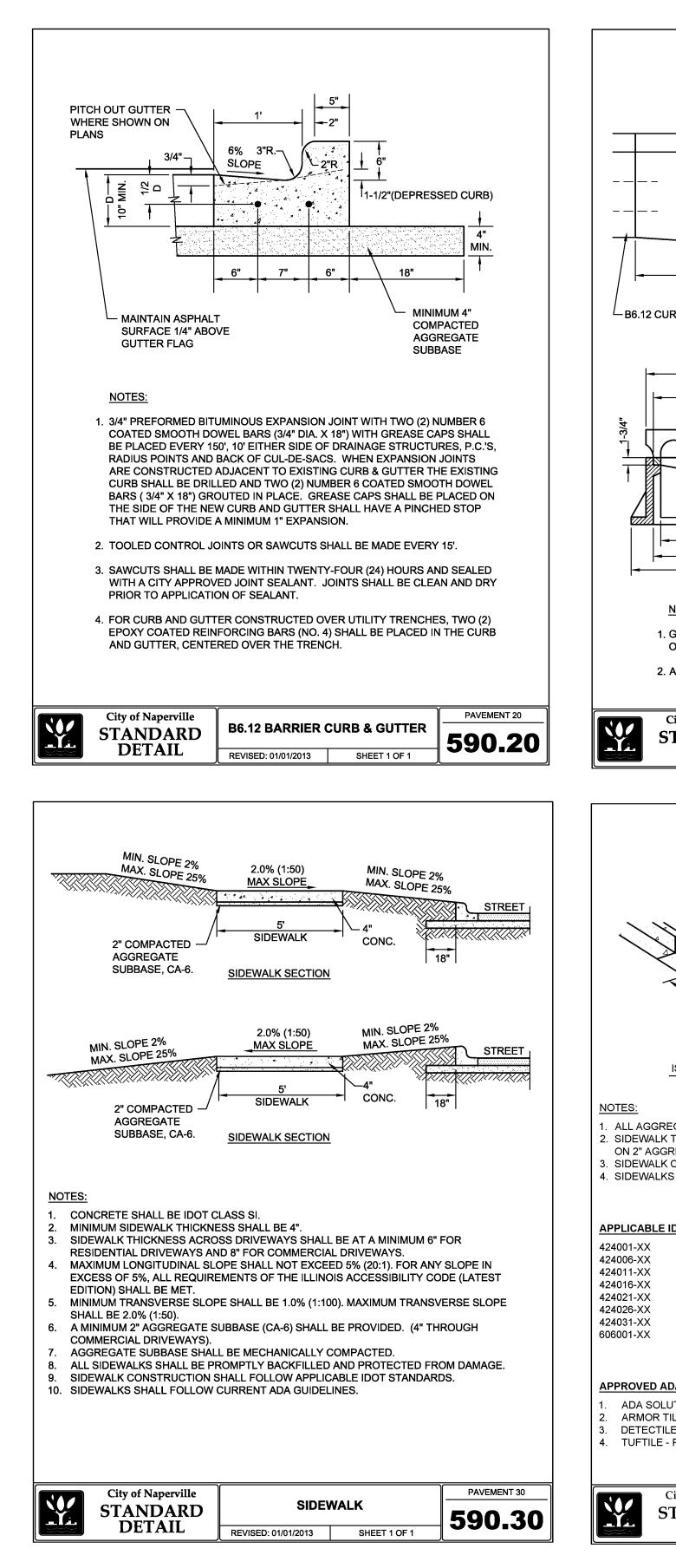
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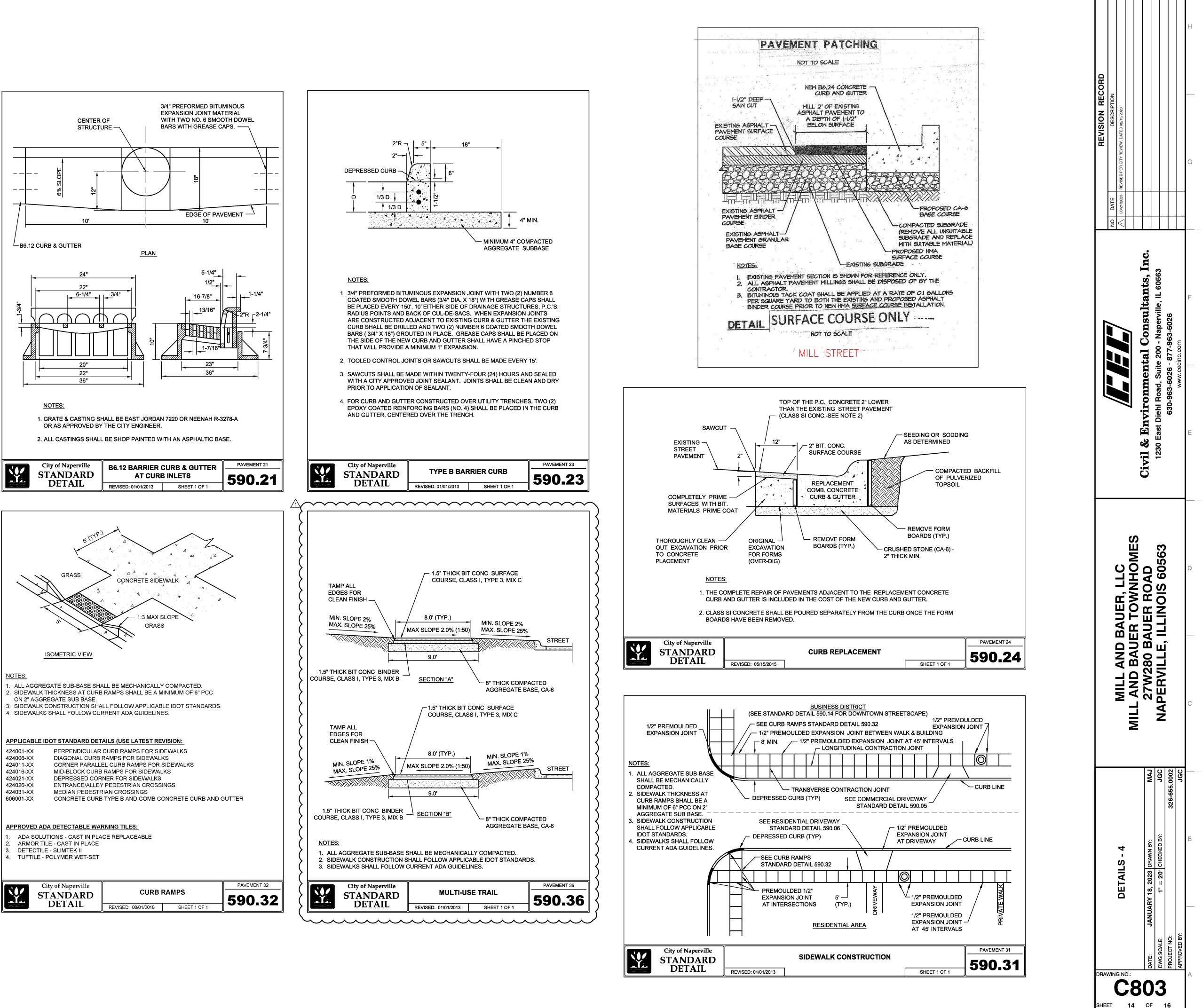
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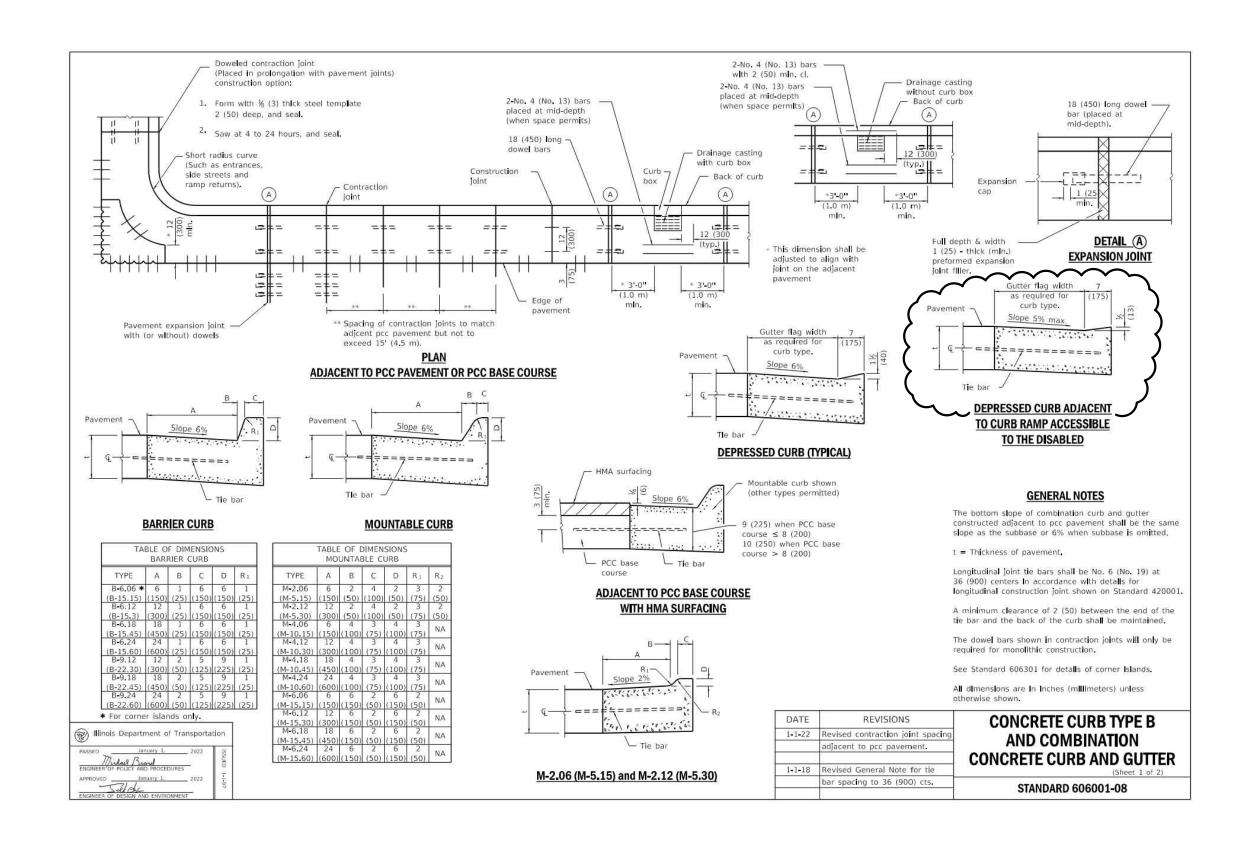
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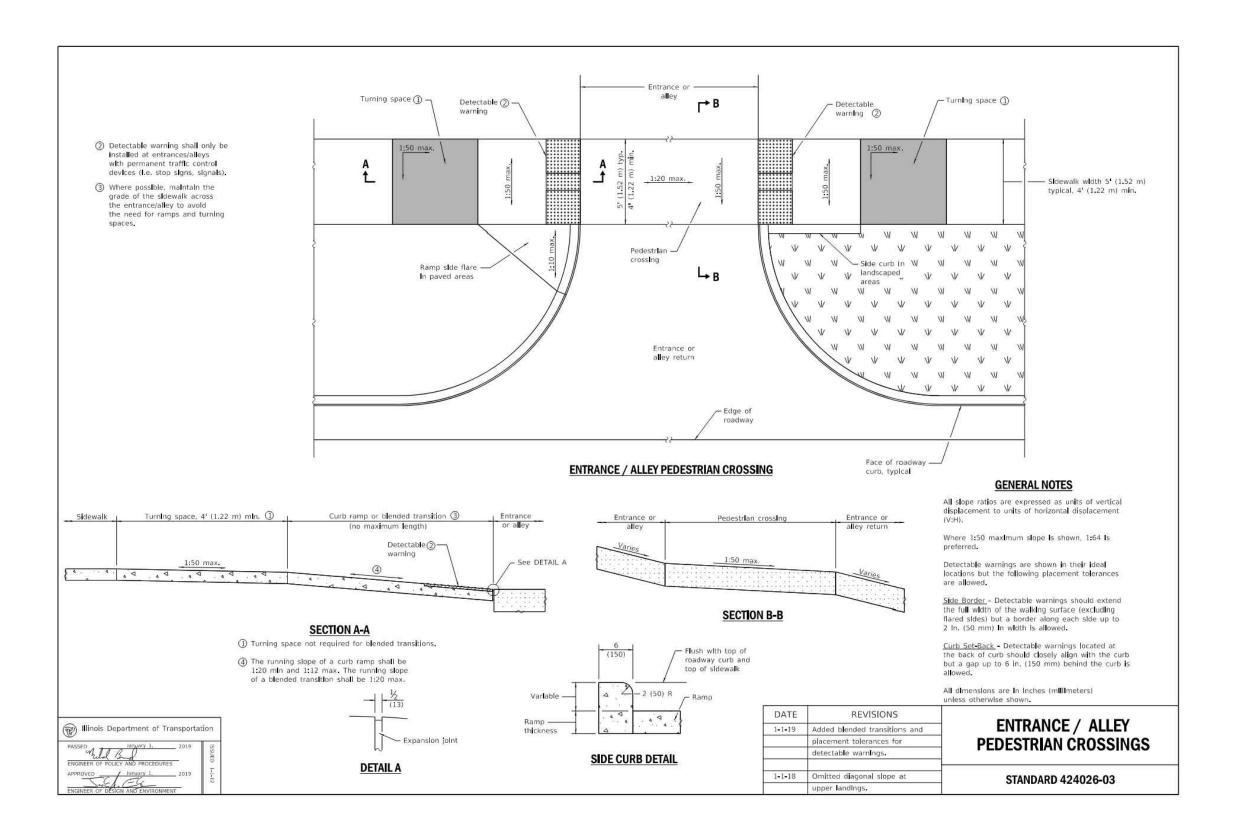
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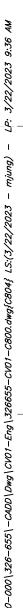


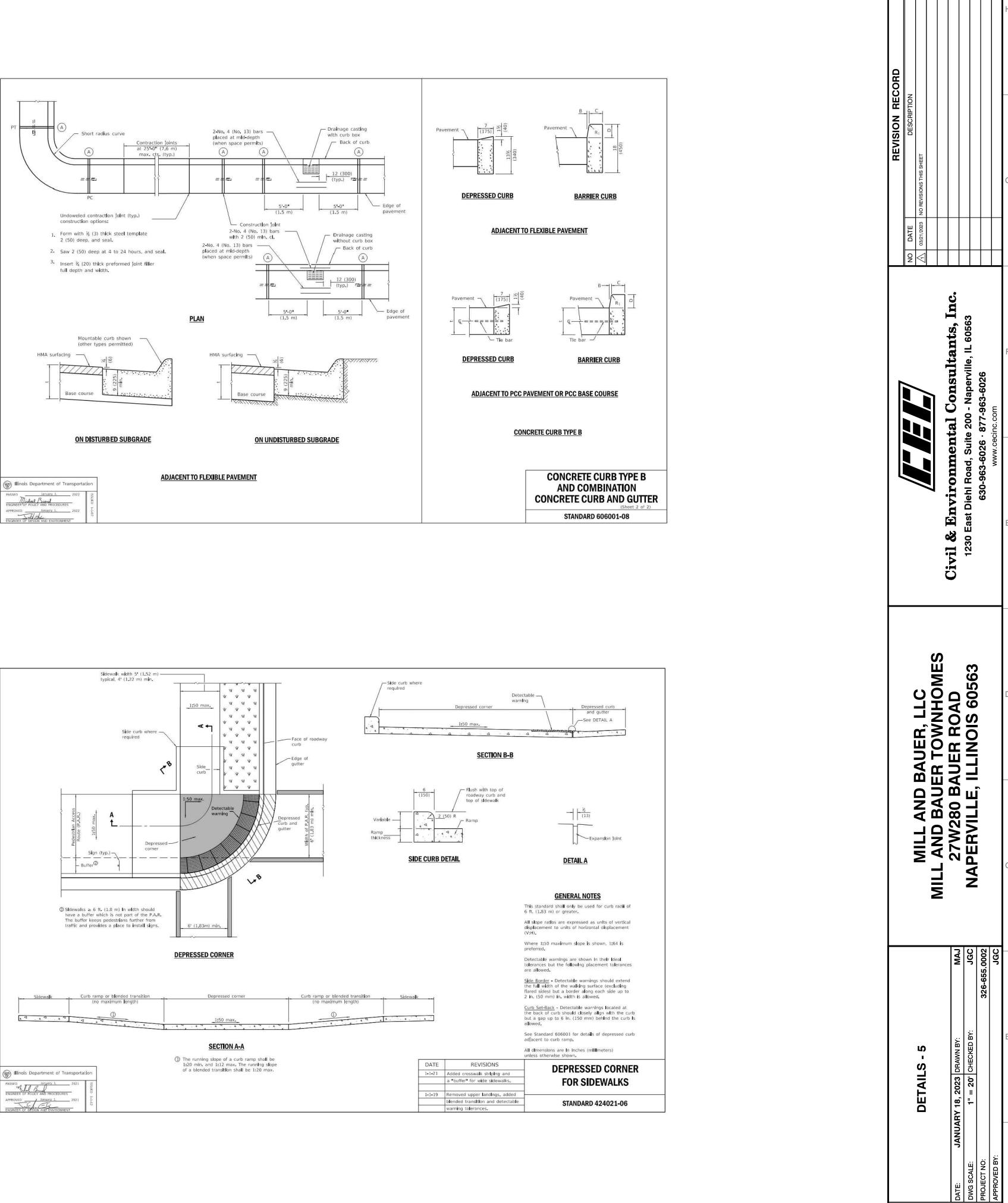


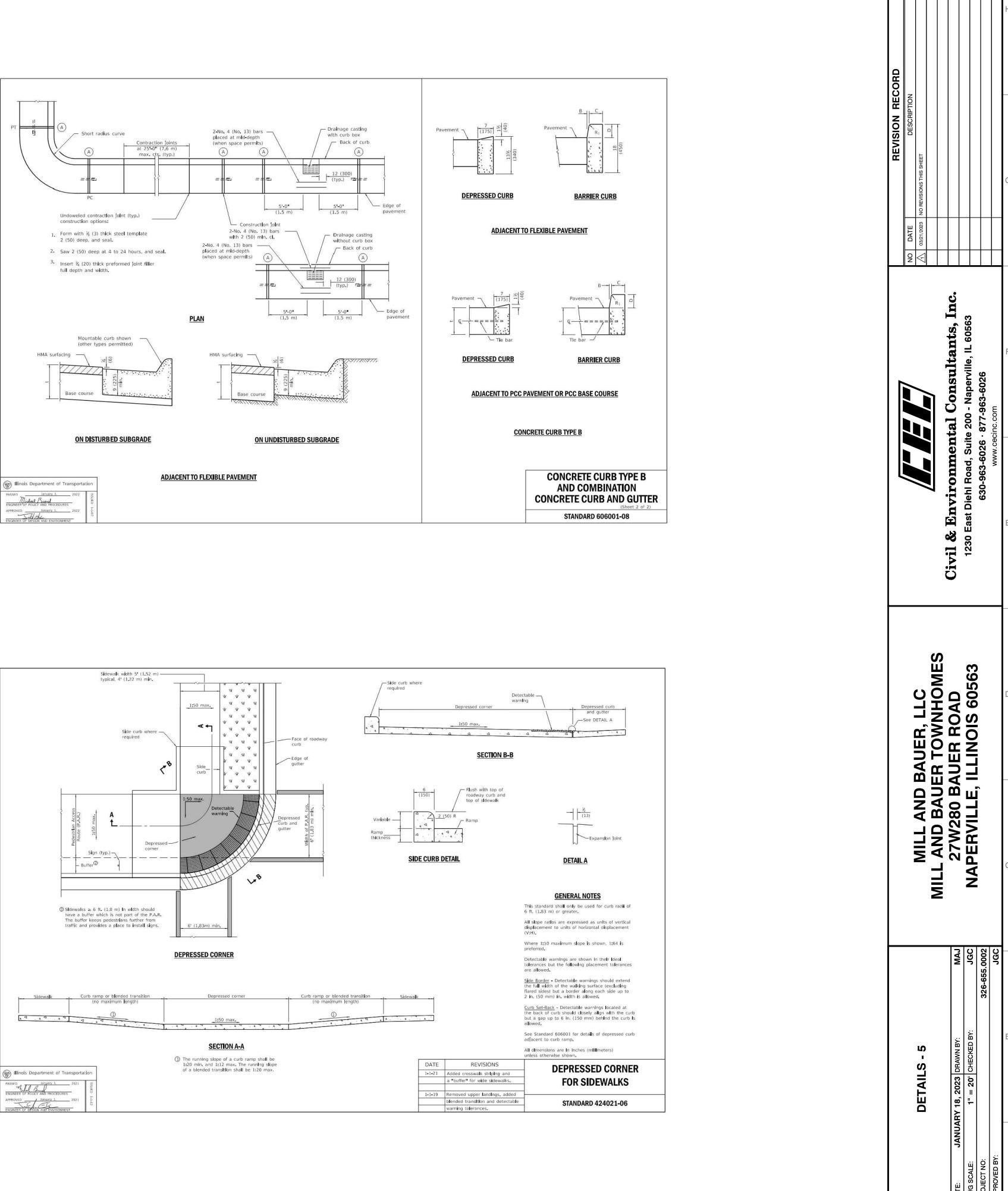
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