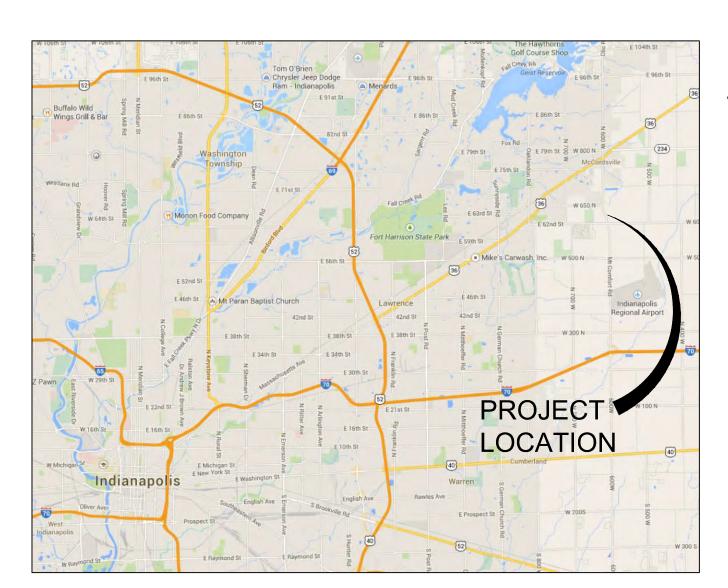
FINAL CONSTRUCTION PLANS

OUTLOOK CHRISTIAN CHURCH IMPROVEMENTS 6531 NORTH 600 WEST McCORDSVILLE, INDIANA



VICINITY MAP

OWNER

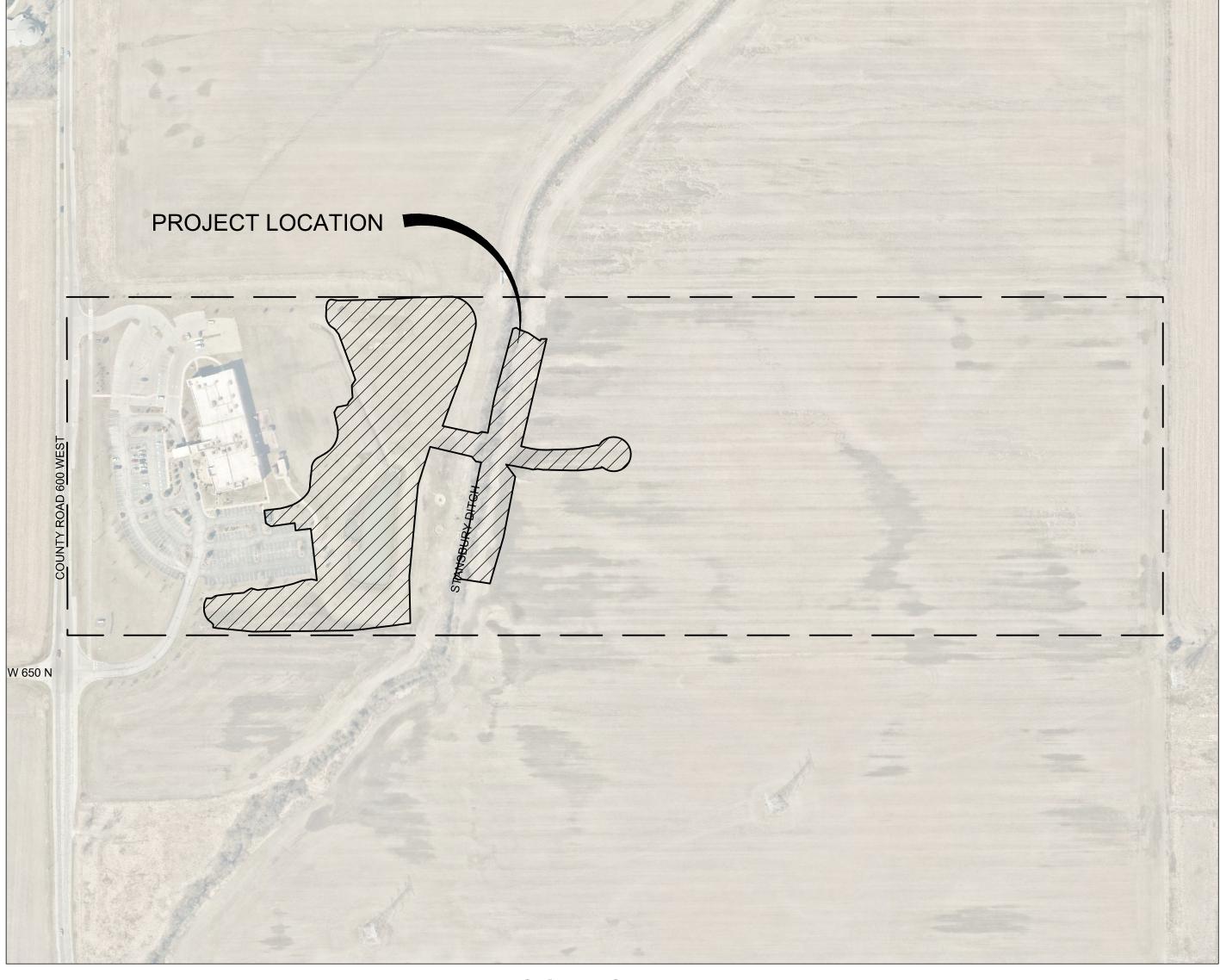
OUTLOOK CHRISTIAN CHURCH 6531 NORTH 600 WEST McCORDSVILLE, IN 46055 PHONE: (317) 335-6815 CONTACT: JOE MITCHELL EMAIL: jmitchell@outlookchurch.org

DEVELOPER

T&W CHURCH SOLUTIONS
3841 W. MORRIS STREET
INDIANAPOLIS, IN 46241
PHONE: (317) 244-7637
CONTACT: KURT WILLIAMS
EMAIL: kwilliams@twcorp.net

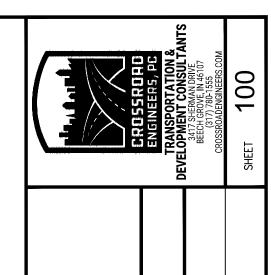
ENGINEER

CROSSROAD ENGINEERS, PC
3417 SHERMAN DRIVE
BEECH GROVE, IN 46107
PHONE: (317) 780-1555
CONTACT: GREGORY J. ILKO
EMAIL: gilko@crossroadengineers.com



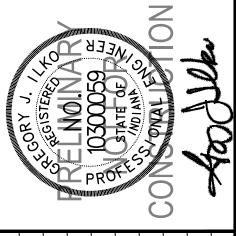
LOCATION MAP

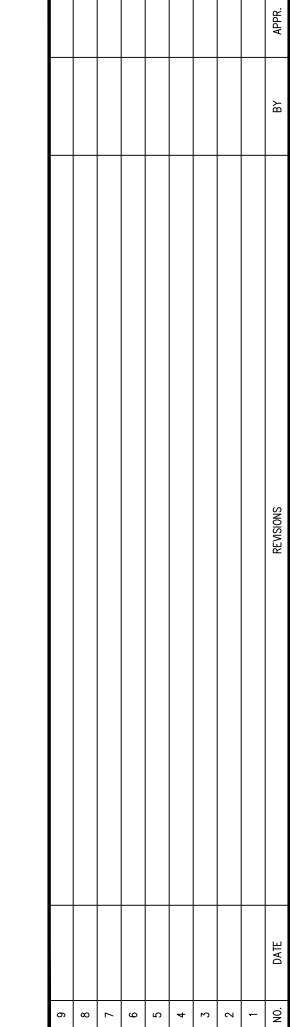
PLAN INDEX	
SHEET#	SUBJECT
100	TITLE SHEET
200	TOPOGRAPHICAL SURVEY
300	SITE DIMENSION PLAN
301	CULVERT PLAN
400	UTILITY PLAN
500	GRADING PLAN
600	EROSION CONTROL PLAN
601	EROSION CONTROL DETAILS
700	MISCELLANEOUS DETAILS AND SPECIFICATIONS
XS1-XS12	FLOODPLAIN CROSS SECTION



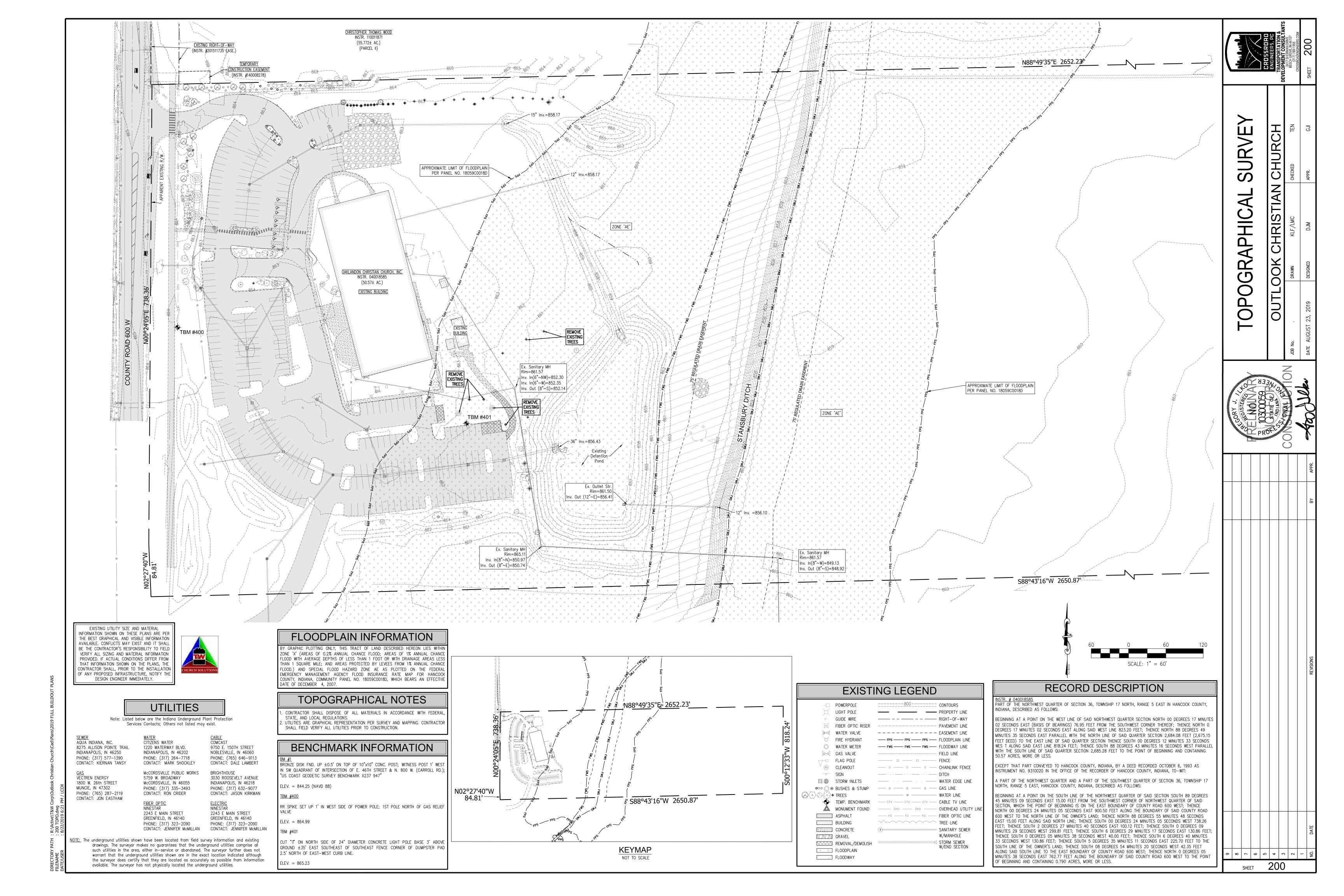
HRISTIAN CHURCH

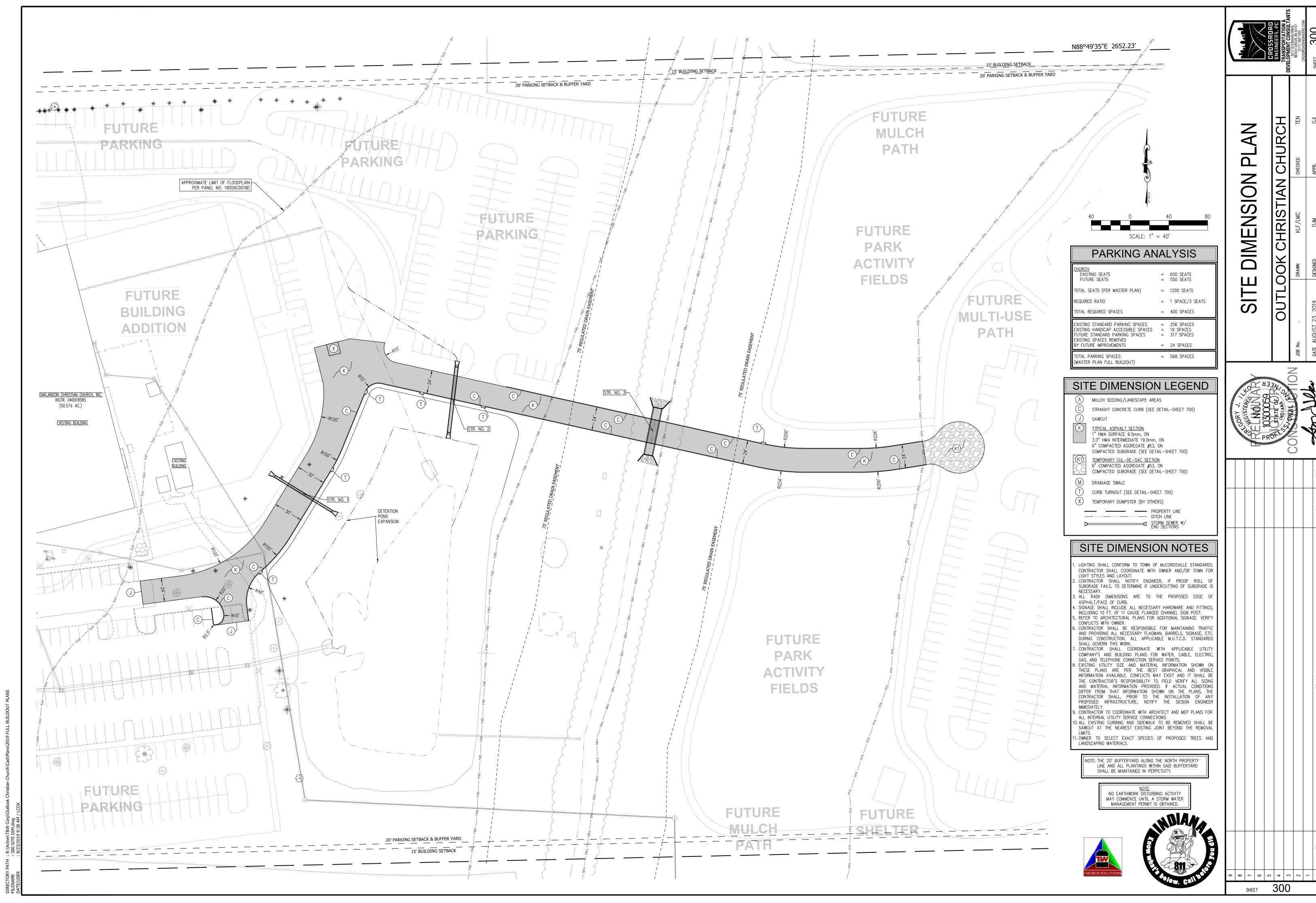
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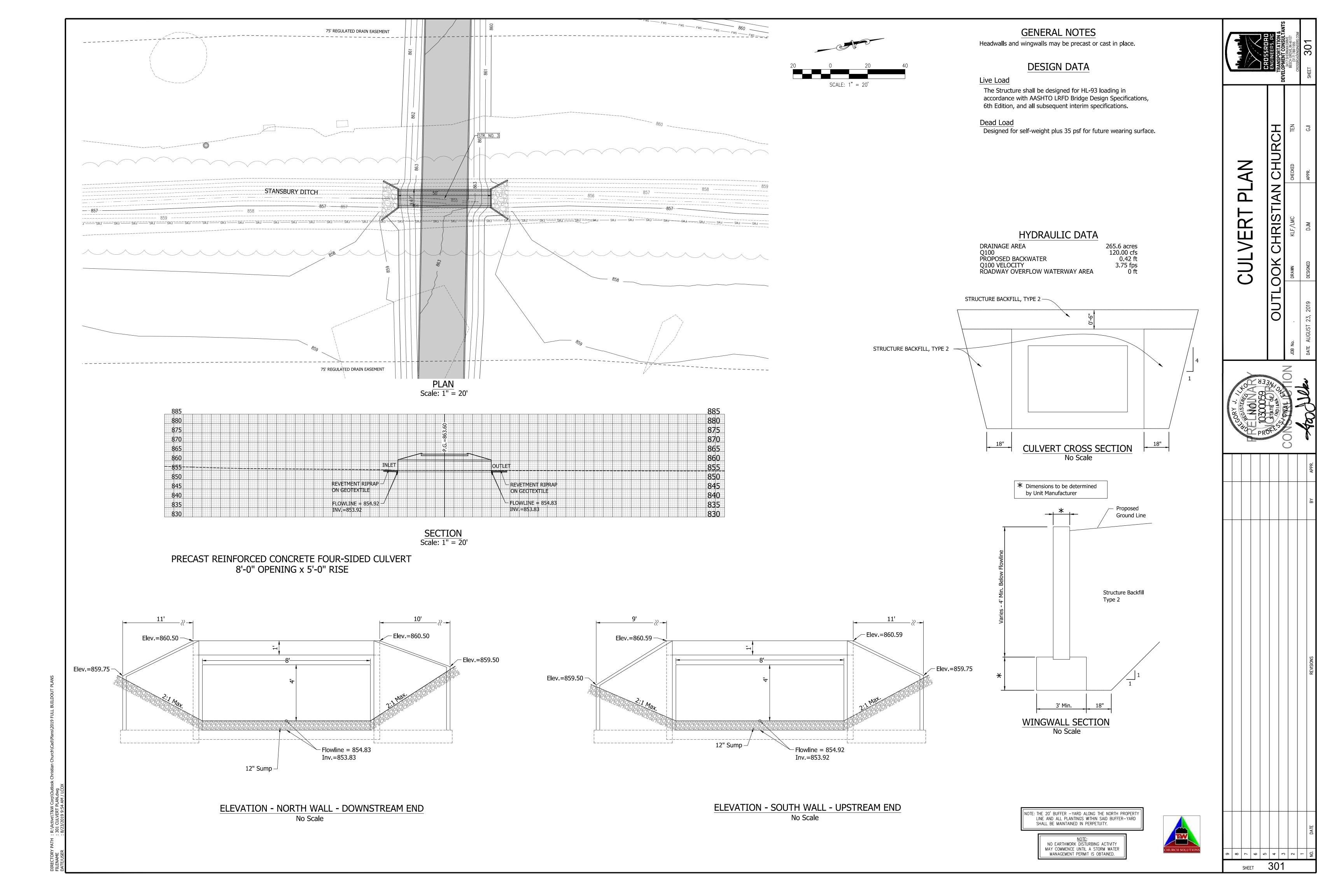


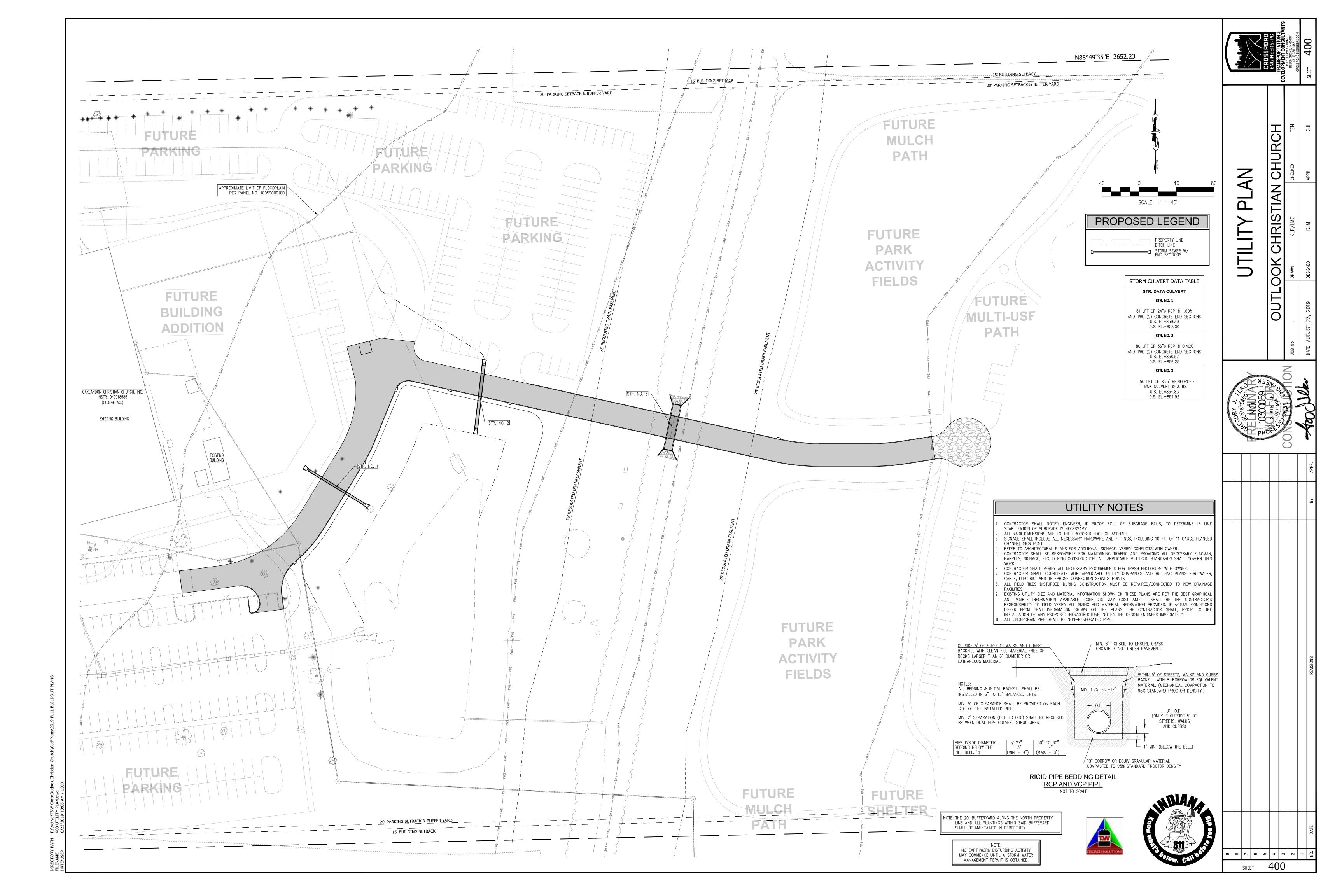


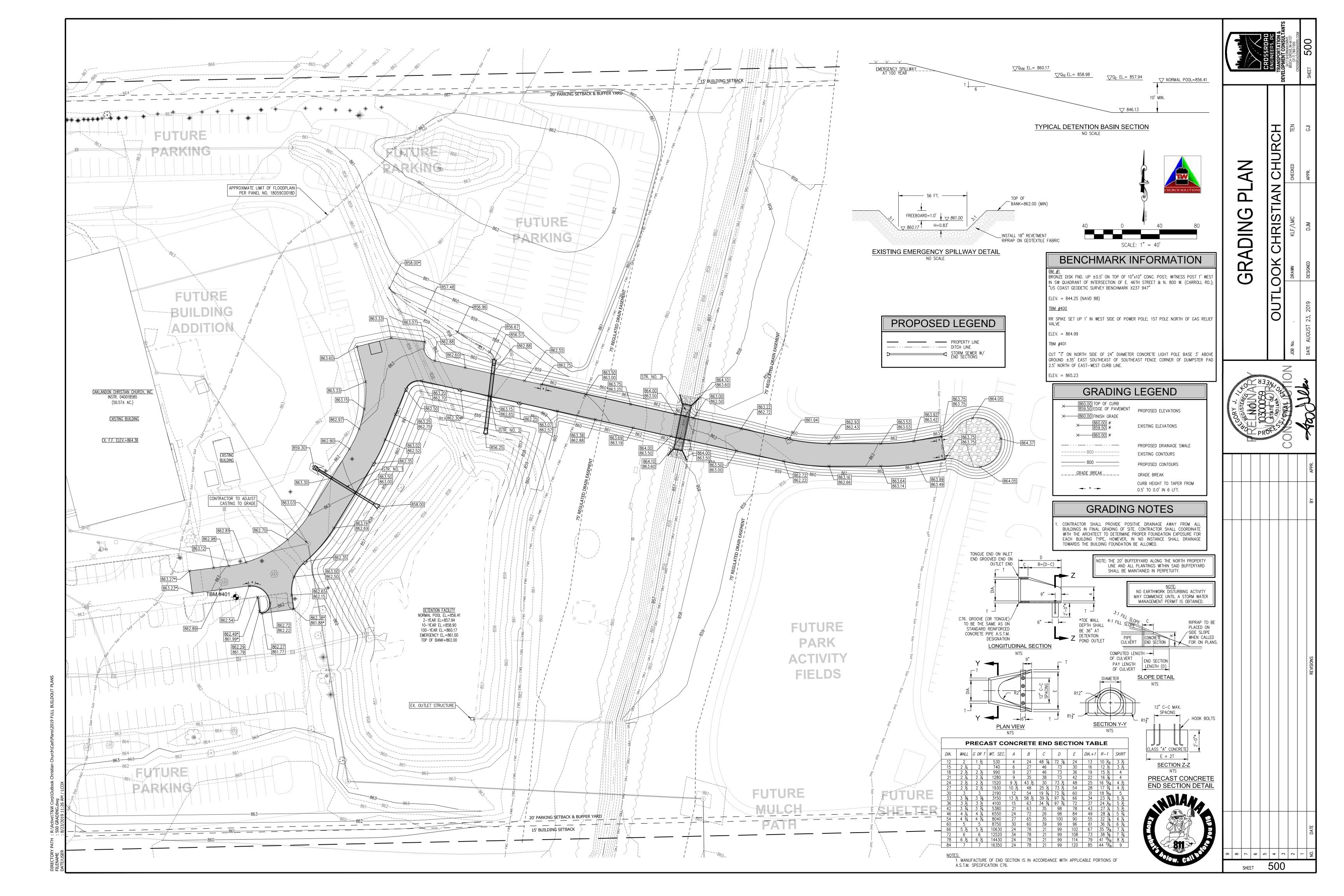


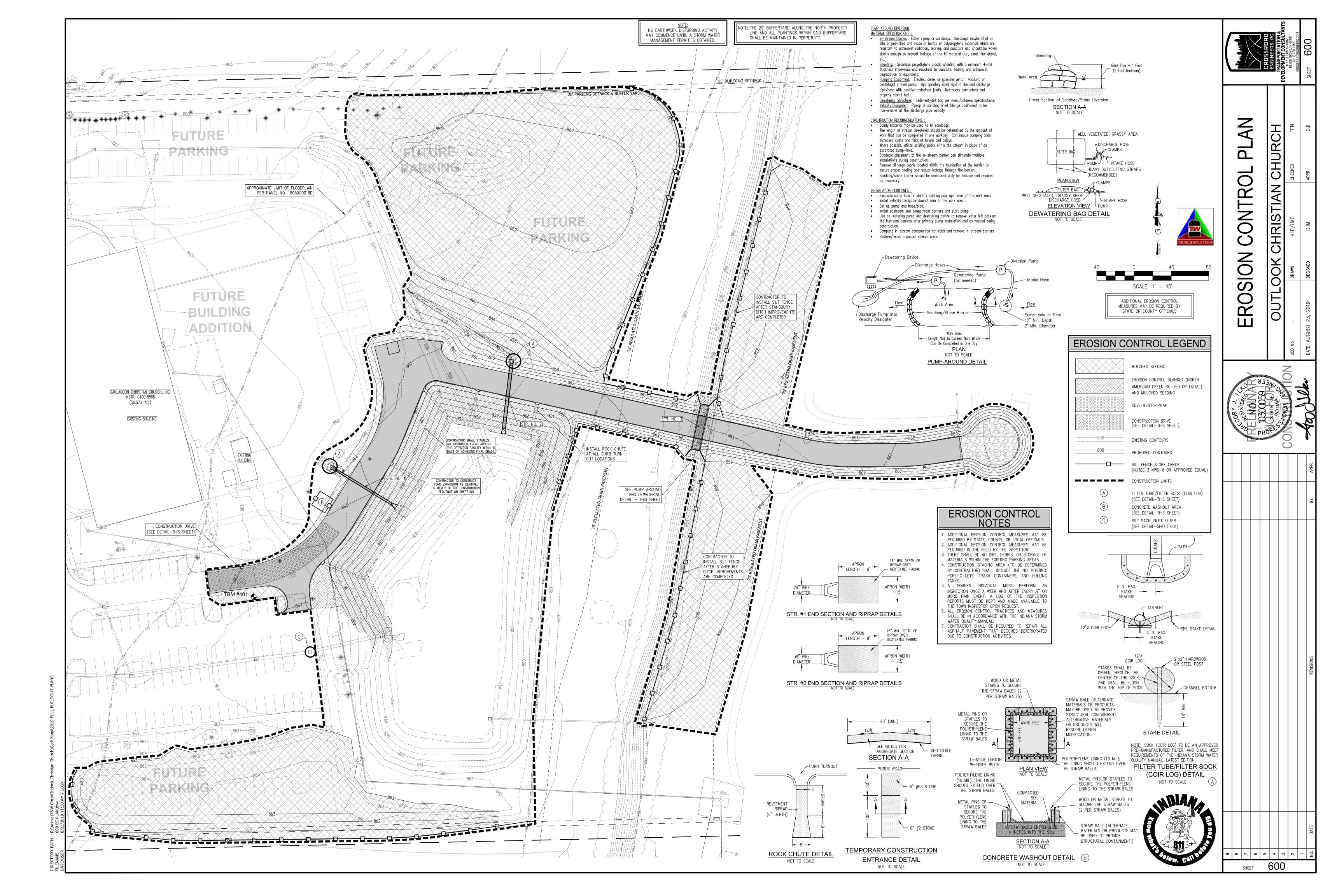












The 11x17 inch Plat has been submitted to the respective Soils and Water Conservation

The project involves the construction of an access drive, a reinforced box culvert installation within Stansbury Ditch, modifications to the existing detention facility, and grading activities for future improvements. The project is located on the east side of Mt. Comfort Road just north of the CR 650 N and Mt. Comfort Road Intersection in the Town of McCordsville. Streets, curbs, grading work that is necessary for the development shall be constructed as part of the construction plans herein. Proposed culverts shall collect runoff and convey it to the modified existing detention facility. Treated drainage will discharge into Stansbury Ditch. All necessary utilities currently serve the property as well. Construction is anticipated to begin in the Spring of 2020.

The Vicinity Map is located in the lower right quadrant of the Erosion Control Details (this

Latitude N 39°52'43.12" Longitude W 85°55'3.57"W LEGAL DESCRIPTION The Legal Description of the project site is located in the lower right quadrant of the Frosion Control Details (this sheet)

LOCATION OF ALL LOTS AND PROPOSED SITE IMPROVEMENTS All pertinent lot information is included on the plan view of the Erosion Control Plan

(Sheet 600). Anticipated utilities, and structures are depicted as well. HYDROLOGIC UNIT CODE The Hydrologic Unit Code for the represented watershed of this project is:

05120201100140 STATE AND/OR FEDERAL WATER QUALITY PERMITS

No State of Federal water quality permits are required for this project. STORMWATER DISCHARGE

Stormwater discharge shall leave the site via an existing storm sewer after being treated for water quality and quantity by the existing detention facility. WETLANDS, LAKES AND WATER COURSES. There are no potential wetland areas located within the project site, nor shall any

potential wetland areas be disturbed as a result of construction. RECEIVING WATERS

The receiving water for this project is the Thomas Stansbury Ditch. POTENTIAL DISCHARGES TO GROUND WATER

There are no potential locations where stormwater may enter the groundwater. 100 YEAR FLOOD PLAINS, FLOODWAYS AND FLOODWAY FRINGES

By graphic plotting only, this tract of land described hereon lies within Zone 'X' (areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.) and special flood hazard zone 'AE' as plotted on the Federal Emergency Management Agency Flood Insurance rate map for Hancock County, Indiana, community panel no. 18059C0018D, which bears an effective date of December

14 POST-CONSTRUCTION PEAK DISCHARGE Qpost Max. (10 year) = 73.03 cfs (inflow to existing detention facility) Qpost Max. (10 year) = 1.86 cfs (outflow from existing detention facility)

ADJACENT LANDUSE The adjacent landuses are labeled on the Erosion Control Plan (Sheet 600).

DISTURBED AREAS The construction limits (boundary of disturbed area) are shown on the Erosion Control Plan (Sheet 600). EXISTING VEGETATIVE COVER

The existing site is already developed with a church facility, parking lots, and all required infrastructure. The remaining areas are grass covered, or agricultural fields. SOILS MAP AND DESCRIPTIONS

The soils map and all pertinent soil type information are located on the upper right quadrant of the Erosion Control Details (this sheet). PROPOSED STORMWATER SYSTEMS

The proposed stormwater system sizes and dimensions are labeled on the Erosion Control Plan (Sheet 600). A20 OFF-SITE CONSTRUCTION ACTIVITIES

No offsite activities shall be required for this phase of construction. SOIL STOCKPILES, BORROW/DISPOSAL AREAS

Topsoil shall be stockpiled in a convenient location (as determined by the owner and/or contractor) within the construction site as shown on the Erosion Control Plan (Sheet 22 EXISTING SITE TOPOGRAPHY

Existing one—foot contours are shown on the Erosion Control Plan (Sheet 600). PROPOSED SITE TOPOGRAPHY Proposed one—foot contours are shown on the Erosion Control Plan (Sheet 600).

STORMWATER POLLUTION PREVENTION - DURING CONSTRUCTION

POTENTIAL POLLUTANT SOURCES ASSOCIATED WITH CONSTRUCTION ACTIVITIES There is a potential for pollutants associated with construction machinery including diesel fuel, hydraulic fluid, engine oils and lubricants, antifreeze and other petroleum products. It is unavoidable for a small amount of these pollutants to contaminate soil in the grading and construction of the site. Sediment pollution from site disturbing activities shall be remedied by Erosion Control measures (see following sections).

SEQUENCE OF STORMWATER QUALITY MEASURE IMPLEMENTATION The Construction Sequence & Schedule of Erosion Control Measure Implementation is located to the right of this section.

CONSTRUCTION ENTRANCE The construction entrance shall be installed south of the existing building off of an existing drive aisle. Specifications and details are located on the Erosion Control Plan (Sheet 600).

SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS Sediment Control measures for Sheet flow areas are shown on the Erosion Control Plan (Sheet 600). Specifications and details are located on the Erosion Control Plan Details sheets (Sheets 600-601).

SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS Sediment Control measures for concentrated flow areas are shown on the Erosion Control Plan (Sheet 600-601). Specifications and details are located on the Erosion Control Details (this sheet)

STORM SEWER INLET PROTECTION MEASURES Storm sewer inlet protection measures are shown on the Erosion Control Plan (Sheet 600). Specifications and details are located on the Erosion Control Details (this sheet). RUNOFF CONTROL MEASURES

Runoff control measures are shown on the Erosion Control Plan (Sheet 600). Specifications and details are located on the Erosion Control Details (this sheet). STORMWATER OUTLET PROTECTION MEASURES Stormwater outlet protection measures are shown on the Erosion Control Plan (Sheet

600). Specifications and details are located on the Erosion Control Details (this sheet). GRADE STABILIZATION STRUCTURES No grade stabilization structures are required for this project LOCĂTION, DIMENSIONS, SPECIFICATIONS AND DETAILS OF EACH STORMWATER QUALITY

Each stormwater quality measure is shown on the Erosion Control Plan (Sheet 600) and associated details/specifications are shown on the Erosion Control Details (this sheet). TEMPORARY SURFACE STABILIZATION Temporary surface stabilization methods are shown on the Erosion Control Plan (Sheet

600) and detailed on the Erosion Control Details (this sheet). PERMANENT SURFACE STABILIZATION

Permanent surface stabilization methods are shown on the Erosion Control Plan (Sheet 600) and detailed on the Erosion Control Details (this sheet). MATERIAL HANDLING AND SPILL PREVENTION

Spill prevention shall be accomplished by utilizing spillguards for equipment fueling and servicing operations. Spillguards shall be 3'x3'x6" and shall be constructed of a material resistant petroleum products (including diesel fuel and oil). On—site fuel storage tanks shall have emergency storage capacity directly below the tank in case of rupture. Any hazardous material spillage shall be collected and/or cleaned immediately by a trained individual and disposed of in accordance with all federal, state and local regulations. Indiana Department of Environmental Management

Office of Emergency Response (317) 233-7745, Toll Free (800) 233-7745 *Additional Material Handling and Spill Prevention (this sheet)* MONITORING AND MAINTENANCE GUIDELINES

Monitoring and Maintenance Guidelines are located in the middle on the Erosion Control Details (this sheet) EROSION & SEDIMENT CONTROL MEASURES FOR INDIVIDUAL BUILDING LOTS

Not applicable, as this is an existing church development. STORMWATER POLLUTION PREVENTION - POST CONSTRUCTION

PROPOSED POLLUTANTS AND SOURCES ASSOCIATED WITH PROPOSED LAND USE Potential pollutants include petroleum products and antifreeze from automobiles using the from various sources.

PROPOSED POST CONSTRUCTION STORMWATER QUALITY MEASURES Post construction stormwater quality measures shall consist of the existing detention facility for detention and water quality purposes

The location of the existing water quality measure can be found on sheet 600. MAINTENANCE GUIDELINES OF POST CONSTRUCTION STORMWATER QUALITY MEASURES The approved existing O&M Manual shall be followed for all inspection and maintenance

auidelines.

MONITORING AND MAINTENANCE GUIDELINES

GRAVEL CONSTRUCTION DRIVE AND PARKING AREA: A. Inspect existing site entrance and parking lot weekly and after each storm event and log condition per IDEM.

A. Inspect weekly until vegetation is established and log condition per IDEM.

A. Inspect periodically, especially after storm events, until the stand is successfully B. Plan to add fertilizer the following growing season according to soil test recommendations.

C. Repair damaged, bare, or sparse areas by filling any gullies, re—fertilizing, over— or **B.** re-seeding, and mulching. D. If plant cover is sparse or patchy, review the plant materials chosen, soil fertility,

moisture condition, and mulching; repair the affected area either by over-seeding or by

re-seeding and mulching after re-preparing the seed bed. E. If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. F. If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.

A. Inspect after storm events to check for movement of mulch or for erosion. B. If washout, breakage, or erosion is present, repair the surface, then re—seed, re—mulch,

and, if applicable, install new netting Continue inspections until vegetation is firmly established. Reference the latest INDOT Specification.

G. Reference the latest INDOT Specification.

EROSION CONTROL BLANKET:

A. During vegetative establishment, inspect after storm events for any erosion below the B. If any area shows erosion, pull back that portion of the blanket covering it, add soil, re—seed the area, and re—lay and staple the blanket. C. After vegetative establishment, check the treated area periodically.

A. Inspect the silt fence periodically and after each storm event. B. If fence fabric tears, starts to decompose, or in any way becomes ineffective, replace the affected portion immediately.

Remove deposited sediment when it reaches half the height of the fence at its lowest point or is causing the fabric to bulge. Take care to avoid undermining the fence during clean out. After the contributing drainage area has been stabilized, remove the fence and sediment

deposits, bring the disturbed area to grade and stabilize. A. Inspect periodically for displaced rock material, slumping, and erosion at edges,

SILT SACK INLET PROTECTION

especially downstream or downslope.

A. Inspect the silt sack inlet protection periodically and after each $\frac{1}{2}$ " storm event. . Remove deposited sediment when it reaches half the height of the filter at the lowest

C. Remove the Silt Sack Inlet Protection and sediment deposits after contributing drainage area is stabilized.

CONCRETE WASHOUT

Concrete washout area shall be installed prior to any concrete placement on site. B. Signs shall be placed at the construction entrance, at the washout area, and elsewhere as necessary to clearly indicate the location of the concrete washout area to operators of concrete trucks and pump rigs.

C. The concrete washout area shall be repaired and enlarged or cleaned out as necessary to maintain capacity for wasted concrete. D. At the end of construction, all concrete shall be removed from the site and disposed of at an approved waste site.

E. When the concrete washout area is removed, the disturbed area shall be seeded and mulched or otherwise stabilized in a manner approved by the inspector.

CONSTRUCTION SEQUENCE & SCHEDULE OF EROSION CONTROL IMPLEMENTATION

1. Silt fence shall be placed around existing structures and in ditches as shown in these plans before any land disturbing activities are started.

2. Schedule a pre-construction meeting with the Town of McCordsville and Hancock County SWCD 48 hours prior to start of earthwork. 3. All erosion control measures shall be installed and constructed as shown at the beginning of the project.

4. Construct temporary gravel entrance in accordance with the "INDIANA STORM WATER QUALITY MANUAL" 5. Construct detention facility expansion. Contractor shall excavate the proposed pond while maintaining the top of bank of the existing pond, which shall act as a levee or barrier between the new expansion and the existing water level. After completing the pond

expansion, the contractor shall remove the existing bank and complete the excavation of the pond expansion. Constructing the pond expansion in this fashion shall limit the amount of sediment that will migrate into the existing pond. Strip topsoil and stockpile as shown. Rough grade site. Disturbed areas should be seeded immediately following rough grading

Areas that will not be disturbed again should be permanently seeded. No unvegetated greas should be exposed for more than seven days. Place drainage structures. Erosion control measures shall be placed around proposed structures as soon as they are in place and until vegetation is secure. 9. Final grade site. All erosion control blankets shall be installed per manufacturers

ecommendations as soon as final grading is complete. 10. Final paving operations. Temporary erosion control measures shall remain in place until

GENERAL EROSION CONTROL REQUIREMENTS FOR COMPLIANCE WITH IDEM GENERAL PERMIT RULES FOR STORM WATER RUNOFF FROM CONSTRUCTION SITES

1. All Erosion Control practices shall be in accordance with the latest edition of the INDIANA STORM WATER QUALITY MANUAL.

The Erosion Control measures included in this plan shall be installed prior to initial land disturbance activities or as soon as practical. Sediment shall be prevented from discharging from the project site by installing and maintaining silt fence, sediment basins, etc. As shown on this plan. If shown on this plan, energy—dissipation devices or Erosion Control at the outfall of the storm sewer system shall be installed at the time of the construction of the outfall.

3. All on-site storm drain inlets shall be protected against sedimentation with silt sack inlet filters, filter fabric, or equivalent barriers as shown on this plan.

4. Except as prevented by inclement weather conditions or other circumstances beyond the control of the contractor/developer appropriate Erosion Control practices will be initiated within (7) seven days of the last land disturbing activity at the site. The site shall be stabilized by seeding, sodding, mulching, covering, or by other equivalent Erosion Control

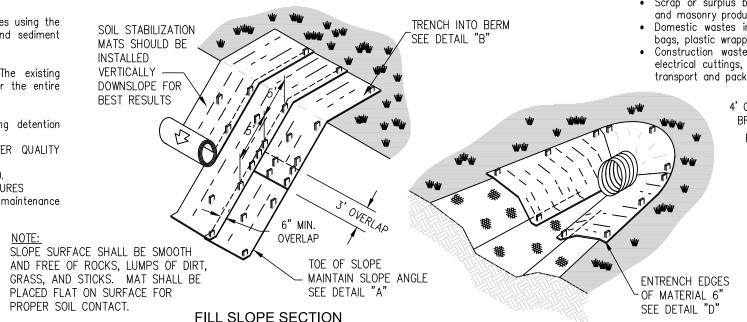
5. This Erosion Control plan shall be implemented on all disturbed areas within the construction site. All measures involving Erosion Control practices shall be installed under the guidance of a qualified person experienced in Erosion Control and following the plans and specifications included herein.

During the period of construction activity, all sediment basins and other Erosion Control measures shall be maintained by the contractor. At the completion of construction, the contractor shall coordinate the transfer of required maintenance responsibilities with the

7. Public or private roadways shall be kept cleared of accumulated sediment. Bulk clearing of accumulated sediment shall not include flushing the area with water. Cleared

sediment shall be returned to the point of likely origin or other suitable location. 8. The contractor shall control wastes, garbage, debris, wastewater, and other substances on the site in such a way that they shall not be transported from the site by the action of winds, storm water runoff, or other forces. Proper disposal or management of all wastes and unused building materials appropriate to the nature of the waste or

9. Additional Erosion Control measures may be required by state or county agencies.



ADDITIONAL MATERIAL HANDLING AND SPILL PREVENTION PLAN

The purpose of this plan is two fold: 1. To help protect the health and safety of those working on the site as well as the 2. Preventing the contamination of storm water runoff. Pollutants generated onsite may include gasoline, diesel fuel, oils, grease, paints, pesticides, nutrients, concrete washout,

soil, solvents, paper, plastic, Styrofoam, metals, glass and other forms of liquid or solid This plan outlines procedures to help prevent health and safety issues, contamination of storm water by onsite pollutants, help prevent fuel and chemical spills and provide a response procedure should a spill occur.

. The contractor or responsible party will prepare a contact list in the event of a spill on the site. The contact list will have names and contact numbers. The contact list will specify first responders and a chain of command. Include information on what

circumstances require the initiation of the contact list and chain of command. 2. The contractor/owner shall maintain a list of audified contractors. Vac—trucks, tank pumpers and other equipment or businesses auglified to do clean-up operations. Absorbent materials and supplies need to be available onsite in sufficient quantities to address minor spills. All employees need to be educated on the proper application of the absorbent materials. 3. All maintenance and equipment operators must be aware and trained for prevention of

spills. A continuing education program is required for new employees and emphasizing the importance to all employees. 4. All materials used in the course of a cleanup will be disposed in a manor approved by

Minor — Small spills that typically involve oil gasoline, paint, hydraulic fluid etc. Minor spills can be controlled by the first responder at the discovery of the spill. • Contain spill to prevent material from entering storm or ground water. Do not flush with

• Use absorbent material to clean-up spills and dispose of properly. Spills on impervious surfaces should be contained with a dry absorbent. Spills on clayey soils should be contained by constructing an earthen dike and should be disposed of as soon as possible to prevent migration deeper into the soil and groundwater. Dispose of contaminated soils or absorbents properly.

• Contaminated solids to be removed to an approved landfill.

or illness to humans or animals or has the potential for surface or aroundwater pollution. if possible to prevent migration of the spill into the stormwater system.

• Contact supervisors and designated inspectors immediately. Other county or municipal site. A written report should be submitted to the owner as soon as possible. • As soon as possible but within 2 hours of discovery, contact the Department of Environmental Management.

> should be noted for future reports to IDEM or the National Response Center. o Name, address and phone number of person making the spill report o The location of the spill

o Identification of the spilled substance further spilled

o The duration and source of the spill o Name and location of the damaged waters o Name of spill response organization

o Other information that may be significant Additional regulation or requirements may be present. A spill response professional should be consulted to make sure all appropriate and required steps have been taken. Contaminated solids should only be removed from the site after approval is given by Emergency Response.

The following procedures and practices will help prevent unnecessary spills

Description and Purpose: Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater. This can be accomplished by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors in proper fueling procedures.

• Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling.

by eliminating the need for a separate fueling area at a site. • Discourage "topping—off" of fuel tanks. • Absorbent spill cleanup materials and spill kits should be available in fueling areas and

absorbent materials promptly and dispose of properly. • Avoid mobile fueling of mobile construction equipment around the site; rather, transport

• Train employees and subcontractors in proper fueling and cleanup procedures. • Dedicated fueling areas should be protected from stormwater run—on and runoff, and should be located at least 50 feet away from the downstream drainage facilities and watercourses. Fueling must be performed on level—grade areas. Protect fueling areas with berms and dikes to prevent run—on, runoff, and to contain

shutoff to control drips. Fueling operations should not be left unattended.

Inspection and Maintenance • Vehicles and equipment should be inspected each day of use for leaks. Leaks should be repaired immediately or problem vehicles or equipment should be removed from the

• Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

Suitable Applications: This BMP is suitable for construction sites where the following wastes are generated or

existing structures (rubble), and building construction.

 Packaging materials including wood, paper, and plastic. • Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces, and masonry products. • Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes,

electrical cuttings, non-hazardous equipment parts. Styrofoam and other materials send TALL FESCUE RED CLOVER ** TOP OF KENTUCKY BLUEGRASS CREEPING RED FESCUE KENTUCKY BLUEGRASS TALL FESCUE 35
EMERALD CROWNVETCH ** 10

The following steps will help keep a clean site and reduce stormwater pollution:

 Select designated waste collection areas onsite. • Inform trash-hauling contractors that you will accept only watertight dumpsters for onsite use. • Inspect dumpsters for leaks and repair any dumpster that is not watertight.

 Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it is windy. Plan for additional containers and more frequent pickup during the demolition phase of

• Collect site trash daily, especially during rainy and windy conditions. • Remove this solid waste promptly since erosion and sediment control devices tend to

 Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acid, pesticides, additives, curing compounds) are not disposed of in dumpsters designed for

• Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the

trash hauling contractor.

 Arrange for regular waste collection before containers overflow. Clean up immediately if a container does spill. • Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas. Solid waste storage areas should be located in areas prone to flooding or ponding.

• Locate solid waste dumpster a minimum of 50' away from storm water inlets or other drainage facilities. • Locate dumpster on stone or earth to minimize the potential for spills or leaks to drain immediately into a drainage facility.

Inspection and Maintenance: • Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly to verify continued BMP implementation. • Inspect BMPs subject to non-stormwater discharge daily while non-stormwater

 Inspect construction waste are regularly. Arrange for regular waste collection.

<u>III. Concrete Washout</u>

The following steps will help reduce stormwater pollution from concrete wastes: • Discuss the concrete management techniques described in the BMP (such as handling of concrete waste and washout) with the reddy-mix concrete supplier before any deliveries are made. • Incorporate requirements for concrete waste management into material supplier and

subcontractors' agreements. Store dry and wet materials under cover, away from drainage areas. Avoid mixing excess amounts of fresh concrete. Perform washout of concrete trucks offsite or in designed areas only.

• Do not wash concrete trucks into storm drains open ditches, streets, or streams. Do no allow excess concrete to be dumped onsite, except in designed areas. For onsite washout:

• Locate washout areas at least 50 feet from storm drains, open ditches, or water

• Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste · Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly. • Avoid creating runoff by drinking water to a bermed or level area when washing concrete to remove fine particles and expose the aggregate.

Purpose— To prevent spills during the normal maintenance of construction machinery.

• Do not wash sweepings form exposed aggregate concrete into the street or storm drain.

Collect and return sweepings to aggregate base stockpile or dispose in the trash.

Implementation— Where and when feasible, maintenance shall be preformed offsite in covered facility with an impervious floor. Use a dedicated site for machinery maintenance

• Site the maintenance area at least 50 feet from storm water inlets or water bodies • Maintain clean up materials close at hand. Utilize drip pans and absorbent pads to prevent oils from reaching the soil surface Inspect equipment daily for leaks or worn hoses. Repair or replace to prevent onsite

 Properly dispose of all fluids removed or spilled from machinery. V. Fluids, paints, solvents and other chemicals storage and use

Purpose— To prevent spills during the use and storage of the materials

Implementation-• Store materials in there original containers

inlet or other drainage facility.

protected to prevent soil erosion.

 Maintain safety data sheets on all products Store materials in a weather proof/vandal resistant locker or building

 Keep materials away from flammable sources • Provide and read instructions for the proper use and storage of all materials • For bulk material stored onsite, provide diking or double containment in case of leaks or

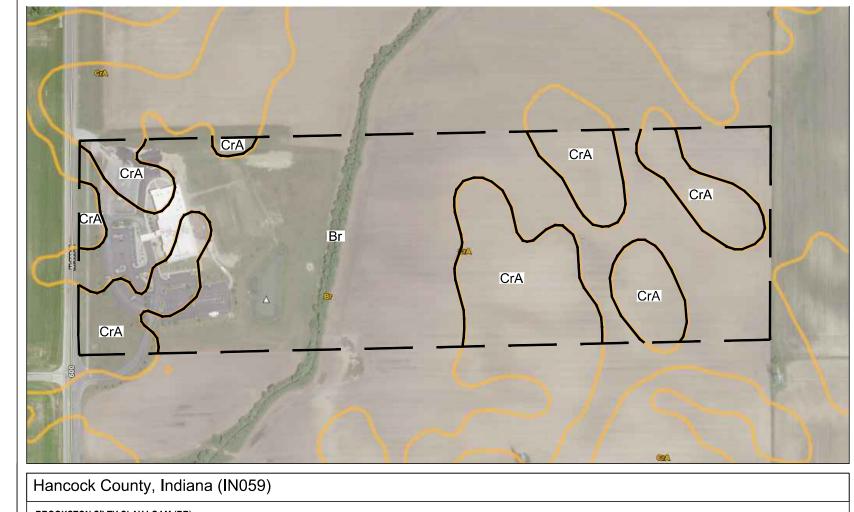
<u>VI. Disposal of sediment laden water</u> Purpose— To prevent the purposeful discharge of sediment laden water into waters of the United States.

• No washout of solvent from paint supplies should be done near or into a storm water

• The sediment and any other pollutant from all pumping or dewatering operations that discharge into storm sewers, wetlands, drainage ways or water bodies must be removed from the water before it's discharged. • A suitable practice is needed at the discharge to allow the suspended solids to be removed from the water column. Slow moving water and time are needed components for an effective practice. Mechanical filters and chemical flocculants can do an excellent

job of removing the fine materials. • Sediment removal pumping bags may be used at the outlet of a pump. The bags must be sized appropriately for the amount of flow. The practice needs to be installed on erosion resistant surfaces. The outlet of the pumping bag must be erosion resistant to prevent additional sedimentation. • Pumping operations that are moving clean water through a site are not required to

have a pumping bag or similar device at the outlet. The point of discharge should be

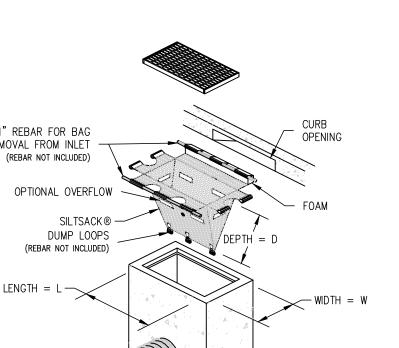


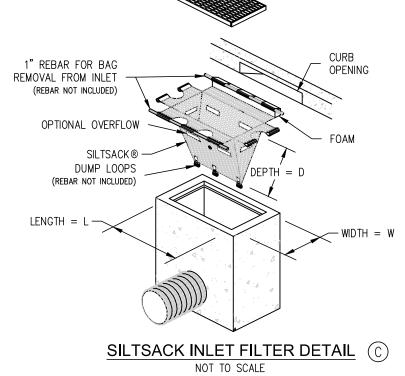
This nearly level soil is in depressions, on flats, and in narrow drainageways between better drained soils on broad, undulating plains. Slopes are 0 to 2 percent. Runoff is very slow. Wetness is the main limitation. Soil has limitations for building sites and must be artificially drained and protected from flooding.

limitation. Soil has limitations for building sites and must be artificially drained and protected from flooding.

This nearly level soil is on broad plains, on ridge tops in rolling greas, or in low drainageways. Slopes are 0 to 2 percent. Runoff is slow. Wetness is the main

SOIL MAP AND DESCRIPTION





1 MED. 1 20-25 12-18 7-21

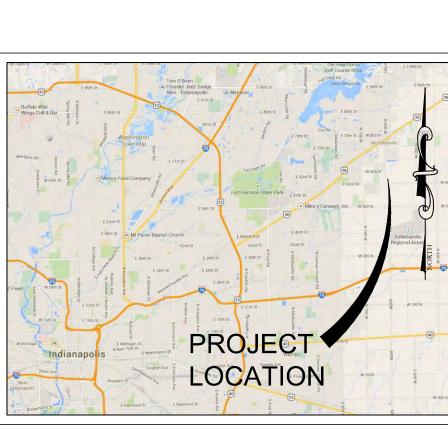
1 MFD. 1 25-35 12-18 10-20

LOW 1 24-35 24-36 5-14

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- 1 | - | 2 | - | - | MED. | 1 | 7-10 | 18 | 5-10 | S | S |



<u>STR. # 040018585</u> .RT OF THE NORTHWEST QUARTER OF SECTION 36, TOWNSHIP 17 NORTH, RANGE 5 EAST IN HANCOCK COUNTY,

0.57 ACRES, MORE OR LESS.

BEGINNING AT A POINT ON THE WEST LINE OF SAID NORTHWEST QUARTER SECTION NORTH OO DEGREES 17 MINUTES 2 SECONDS EAST (BASIS OF BEARINGS) 76.95 FEET FROM THE SOUTHWEST CORNER THEREOF; THENCE NORTH 0 ₩ES T ALONG SAID EAST LINE 818.24 FEET: THENCE SOUTH 88 DEGREES 43 MINUTES 16 SECONDS WEST PARALLEL

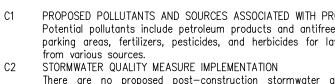
EXCEPT THAT PART CONVEYED TO HANCOCK COUNTY, INDIANA, BY A DEED RECORDED OCTOBER 6, 1993 AS INSTRUMENT NO. 9310020 IN THE OFFICE OF THE RECORDER OF HANCOCK COUNTY, INDIANA, TO-WIT: PART OF THE NORTHWEST QUARTER AND A PART OF THE SOUTHWEST QUARTER OF SECTION 36, TOWNSHIP 17

BEGINNING AT A POINT ON THE SOUTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION SOUTH 89 DEGREES 45 MINUTES 09 SECONDS EAST 15.00 FEET FROM THE SOUTHWEST CORNER OF NORTHWEST QUARTER OF SAID SECTION, WHICH THE POINT OF BEGINNING IS ON THE EAST BOUNDARY OF COUNTY ROAD 600 WEST; THENCE NORTH 00 DEGREES 24 MINUTES 05 SECONDS EAST 900.50 FEET ALONG THE BOUNDARY OF SAID COUNTY ROAD 600 WEST TO THE NORTH LINE OF THE OWNER'S LAND; THENCE NORTH 88 DEGREES 55 MINUTES 48 SECONDS EAST 15.00 FEET ALONG SAID NORTH LINE; THENCE SOUTH 00 DEGREES 24 MINUTES 05 SECONDS WEST 738.26 FEET; THENCE SOUTH 2 DEGREES 27 MINUTES 40 SECONDS EAST 100.12 FEET; THENCE SOUTH 0 DEGREES 09 MINUTES 29 SECONDS WEST 299.81 FEET; THENCE SOUTH 6 DEGREES 29 MINUTES 17 SECONDS EAST 130.86 FEET; THENCE SOUTH 0 DEGREES 05 MINUTES 38 SECONDS WEST 40.00 FEET; THENCE SOUTH 6 DEGREES 40 MINUTES 33 SECONDS WEST 130.86 FEET; THENCE SOUTH 5 DEGREES 35 MINUTES 11 SECONDS EAST 225.70 FEET TO THE SOUTH LINE OF THE OWNER'S LAND; THENCE SOUTH 08 DEGREES 54 MINUTES 20 SECONDS WEST 42.35 FEET ALONG SAID SOUTH LINE TO THE EAST BOUNDARY OF COUNTY ROAD 600 WEST; THENCE NORTH O DEGREES 05 ■ MINUTES 38 SECONDS EAST 762.77 FEET ALONG THE BOUNDARY OF SAID COUNTY ROAD 600 WEST TO THE POINT OF BEGINNING AND CONTAINING 0.790 ACRES, MORE OR LESS.

ADDITIONAL EROSION CONTROL

MEASURES MAY BE REQUIRED BY

STATE OR COUNTY OFFICIALS



parking areas, fertilizers, pesticides, and herbicides for lawn maintenance and sediment There are no proposed post-construction stormwater quality measures. The existing detention facility was master planned to provide water quality treatment for the entire

LOCATION, DIMENSIONS, SPECIFICATIONS AND DETAILS OF EACH STORMWATER QUALITY

FILL SLOPE SECTION

Indiana Department of Environmental Management 5. Using water to flush spilled material will not be permitted unless authorized by a state. federal, or local agency. Tarps can be used to cover spilled material during rain events. Spill Response • Use absorbent material to clean—up spill material and any subsequently contaminated soil and dispose of properly.

Semi-significant Spills — Approximately ten gallons or less of pollutant with no contamination of ground or surface waters. Minor spills can be generally controlled by the first responder with help from other site personnel. This response may require other operations to stop to make sure the spill is quickly and safely addressed. At the discovery of the spill: • Contain spill to prevent material from entering storm or ground water. Do not flush with water or bury.

• Contact 911 if this spill could be a safety issue. • Contact supervisors and designated inspectors immediately

Major or Hazardous Spills — More than ten gallons, there is the potential for death, injury • Control or contain the spill without risking bodily harm. Temporarily plug storm drains • Immediately contact the local Fire Department at 911 to report any hazard material

officials (list as needed) responsible for storm water facilities should be contacted as well. The contractor is responsible for having these contact numbers available at the job Office of Emergency Response 1-888-233-7745. The following information

o The time of the spill o Approximate quantity of the substance that has been spilled or may be

o What measures were taken in the spill response

I. Vehicle and Equipment Fueling

Implementation: • Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical

on fueling trucks, and should be disposed of properly after use. • Drip pans or absorbent pads should be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area. • Use absorbent materials on small spills. Do not hose down or bury the spill. Remove the

the equipment to designated fueling areas.

• Nozzles used in vehicle and equipment fueling should be equipped with an automatic • Federal, state, and local requirements should be observed for any stationary above ground storage tanks.

• Keep ample supplies of spill cleanup materials onsite. • Immediately clean up spills and properly dispose of contaminated soils.

II. Solid Waste Management

• Solid waste generated from trees and shrubs removed during land clearing, demolition of

Construction waste including brick, mortar, timber, steel and metal scraps, pipe and

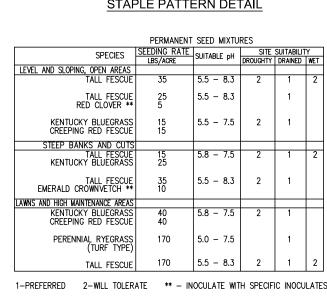
transport and package construction materials. BREAK POINT BOTTOM OF-FILL SLOPE BOTTOM OF/ TAMP DIRT CUT SLOPE PRIOR TO LAYING-TOP LAP OVER DETAIL "A" DETAIL "B"

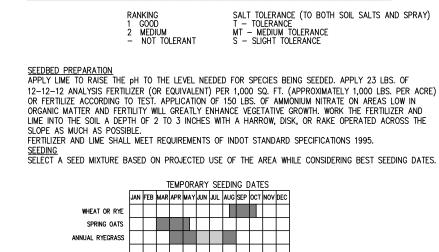
EROSION CONTROL BLANKET

SLOPE INSTALLATION

NOT TO SCALE

3:1 2:1 1:1 LOW MED/HIGH
SLOPE GRADIENT CHANNEL CHANNEL
SLOPE GRADIENT CHANNEL 1.5' - 1.5' 1.5 STAPLES PER SYD **EROSION CONTROL BLANKET** STAPLE PATTERN DETAIL



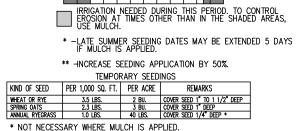


KENTUCKY BLUEGRASS POA PROTINSIS

TALL FESCUE FESTUCA L ARUNDINACEA

PERENNIAL RYEGRASS LOLIUM PERENNE

TRIFOLIUM PRATENSE





VICINITY MAP RECORD DESCRIPTION

INDIANA, DESCRIBED AS FOLLOWS: DEGREES 17 MINUTES 02 SECONDS EAST ALONG SAID WEST LINE 823.20 FEET; THENCE NORTH 88 DEGREES 49 MINUTES 35 SECONDS EAST PARALLEL WITH THE NORTH LINE OF SAID QUARTER SECTION 2,684.08 FEET (2,675.15 FEET DEED) TO THE EAST LINE OF SAID QUARTER SECTION THENCE SOUTH OO DEGREES 12 MINUTES 33 SECONDS WITH THE SOUTH LINE OF SAID QUARTER SECTION 2,685.28 FEET TO THE POINT OF BEGINNING AND CONTAINING

NORTH, RANGE 5 EAST, HANCOCK COUNTY, INDIANA, DESCRIBED AS FOLLOWS:

- A. EXTENT: THE WORK REQUIRED UNDER THIS SECTION CONSISTS OF ALL EXCAVATING, FILLING, ROUGH GRADING AND RELATED ITEMS NECESSARY TO COMPLETE THE WORK INDICATED ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS. THE CONTRACTOR SHALL NOTIFY IN WRITING THE OWNER AND THE ENGINEER OF ANY CHANGES, ERRORS OR OMISSIONS FOUND ON THE PLANS OR IN THE FIELD, BEFORE
- WORK IS STARTED OR RESUMED. 1. IN GENERAL, THE ITEMS OF WORK TO BE PERFORMED UNDER THIS SECTION SHALL INCLUDE CLEARING AND GRUBBING, REMOVAL OF TREES AND STUMPS, STRIPPING AND STORAGE OF TOPSOIL, 6. ROLLING FILL COMPACTION AND ROUGH GRADING OF ENTIRE SITE. ALL TREES SHALL BE REMOVED UNLESS
- OTHERWISE NOTED IN PLANS OR DIRECTED BY OWNER. 2. EXCAVATED MATERIAL THAT IS SUITABLE MAY BE USED FOR FILLS. ALL UNSUITABLE MATERIAL AND ALL SURPLUS EXCAVATED MATERIAL NOT REQUIRED SHALL BE REMOVED FROM THE SITE. THE LOCATION OF DUMP AND LENGTH OF HAUL SHALL BE THE CONTRACTOR'S RESPONSIBILITY. 3. PROVIDE AND PLACE ANY ADDITIONAL FILL MATERIAL FROM OFF THE SITE AS MAY BE NECESSARY TO PRODUCE THE GRADES REQUIRED. FILL OBTAINED FROM OFF SITE SHALL BE OF KIND AND
- QUALITY AS SPECIFIED FOR FILLS HEREIN AND THE SOURCE APPROVED BY THE OWNER. 4. THE CONTRACTOR SHALL ACCEPT THE SITE AS HE FINDS IT AND SHALL REMOVE ALL TRASH, RUBBISH AND DEBRIS FROM THE SITE PRIOR TO STARTING EXCAVATION 2. BENCHMARK
- A. MAINTAIN CAREFULLY ALL BENCH MARKS, MONUMENTS AND OTHER REFERENCE POINTS; IF DISTURBED OR DESTROYED. CONTRACTOR SHALL CONTACT ENGINEER. 3. REMOVAL OF TREES
- A. THE INTEGRITY OF THE TOPOGRAPHIC FEATURES (INCLUDING TREES) SHALL BE PERSEVERED AS MUCH AS POSSIBLE THE CONTRACTOR SHALL COORDINATE WITH OWNER AND/OR ENGINEER PRIOR TO CLEARING
- B. ALL BRUSH, STUMPS, WOOD AND OTHER REFUSE FROM THE TREES REMOVED SHALL BE HAULED TO DISPOSAL AREAS OFF OF THE SITE. DISPOSAL BY BURNING SHALL NOT BE PERMITTED UNLESS PROPER PERMITS ARE OBTAINED (WHERE APPLICABLE) 4. HANDLING OF TOPSOIL
- A. REMOVE ALL ORGANIC MATERIAL FROM THE AREAS TO BE OCCUPIED BY BUILDINGS, ROADS, WALKS AND PARKING AREAS. PILE AND STORE TOPSOIL AT A LOCATION WHERE IT WILL NOT INTERFERE WITH CONSTRUCTION OPERATIONS. TOPSOIL SHALL BE REASONABLE FREE FROM SUBSOIL, DEBRIS, WEEDS,
- GRASS, STONES, ETC. B. AFTER COMPLETION OF SITE GRADING AND SUBSURFACE UTILITY INSTALLATION, TOPSOIL SHALL BE REPLACED IN AREAS DESIGNATED ON THE EROSION CONTROL PLAN FOR SEEDING AND/OR SODDING. ANY REMAINING TOPSOIL SHALL BE USED FOR FINISHED GRADING AROUND STRUCTURES AND LANDSCAPING
- 5. DISPOSITION OF UTILITIES A. RULES AND REGULATIONS GOVERNING THE RESPECTIVE UTILITIES SHALL BE OBSERVED IN EXECUTING ALL
- WORK UNDER THIS SECTION B. IF ACTIVE UTILITIES ARE ENCOUNTERED BUT NOT SHOWN ON THE DRAWINGS, THE ENGINEER SHALL BE
- ADVISED BEFORE WORK IS CONTINUED. C. INACTIVE AND ABANDONED UTILITIES ENCOUNTERED IN EXCAVATING AND GRADING OPERATIONS SHALL BE REPORTED TO THE ENGINEER. THEY SHALL BE REMOVED, PLUGGED OR CAPPED AS DIRECTED BY THE UTILITY COMPANY OR THE ENGINEER.
- D. IT SHALL BE THE RESPONSIBILITY OF EACH CONTRACTOR TO VERITY ALL EXISTING UTILITIES AND CONDITIONS PERTAINING TO HIS PHASE OF THE WORK. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNERS OF THE VARIOUS UTILITIES BEFORE WORK IS STARTED.
- 6. SITE GRADING A. GRADES: CONTRACTOR SHALL PERFORM ALL CUTTING, FILLING, COMPACTING OF FILLS AND ROUGH
 - GRADING REQUIRED TO BRING ENTIRE PROJECT AREA TO GRADE AS SHOWN ON THE DRAWINGS. B. ROUGH GRADING: THE TOLERANCE FOR PAVED AREAS SHALL NOT EXCEED 0.10 FEET PLUS OR MINUS ABOVE THE ESTABLISHED SUBGRADE. ALL OTHER AREAS SHALL NOT EXCEED 0.10 FEET PLUS OR MINUS THE ESTABLISHED GRADE. ALL BANKS AND OTHER BREAKS IN GRADE SHALL BE ROUNDED AT THE TOP AND BOTTOM.
 - C. COMPACTION REQUIREMENTS: 1. ALL BUILDING PAD AREAS SHALL BE COMPACTED TO STANDARDS SPECIFIED BY LOCAL AND/OR STATE BUILDING CODES. 2. COMPACTION REQUIREMENTS OF PAVED AREAS SHALL BE 95% OF MAXIMUM DRY DENSITY.
- 7. EARTH WORK BALANCE A. THE CONTRACTOR SHALL CONFIRM ALL EARTHWORK QUANTITIES PRIOR TO START OF CONSTRUCTION. IF AN EXCESS OR SHORTAGE OF EARTH IS ENCOUNTERED, THE CONTRACTOR SHALL CONFIRM WITH THE OWNER AND ENGINEER THE REQUIREMENTS FOR STOCKPILING, REMOVAL OR IMPORTING OF EARTH.
 - MINOR ADJUSTMENTS TO THE GRADES MAY BE REQUIRED TO EARTHWORK BALANCES WHEN MINOR EXCESS MATERIAL OR SHORTAGES ARE ENCOUNTERED. IT IS RECOGNIZED BY THE PARTIES HERETO THAT THE CALCULATIONS OF THE ENGINEER IN ACCORDANCE WITH THE AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARDS FOR SUCH CALCULATIONS. FURTHER, THAT THESE CALCULATIONS ARE SUBJECT TO THE INTERPRETATIONS OF SOIL BORINGS AS THE PHYSICAL LIMITS IN FINISH GRADE AND COMPACTION PERMITTED THE CONTRACTOR, AND THAT ALL OF THESE PARAMETERS MAY CAUSE EITHER AN EXCESS OR SHORTAGE OF ACTUAL EARTHWORK MATERIALS TO COMPLETE THE PROJECT. IF SUCH AN ACTUAL MINOR EXCESS OR SHORTAGE OF ACTUAL EARTHWORK MATERIALS OCCURS, THE CONTRACTOR SHALL CONTACT THE ENGINEER TO DETERMINE IF ADJUSTMENTS CAN BE MADE TO CORRECT THE IMBALANCE OF

STREETS/PARKING LOTS

- A. THE WORK REQUIRED UNDER THIS SECTION INCLUDES ALL CONCRETE AND BITUMINOUS PAVING AND KELATED HEMS NECESSARY TO COMPLETE THE WORK INDICATED ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS. INCLUDING BUT NOT LIMITED TO:
 - I. ALL STREETS, PARKING AREAS WITHIN THE CONTRACT LIMITS.
- CURBS AND CONCRETE RAMPS SIDEWALKS AND CONCRETE SLABS
- 4. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL SPECIFICATIONS THE MORE STRINGENT SHALL APPLY. B. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL
- SPECIFICATIONS THE MORE STRINGENT SHALL APPLY. PAVEMENT CONSTRUCTION A. ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND
- CONFORM TO THE MINIMUM STANDARDS OF THE TOWN OF McCORDSVILLE, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED. B. FLEXIBLE PAVEMENT
- 1. MATERIALS
- A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS. B. COMPACTED AGGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG.
- COURSE AGGREGATE SHALL BE CLASS A, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903. C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL
- BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903. D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL, CRUSHED SLAB. AND SHARP EDGED NATURAL SAND. SURFACE COARSE AGGREGATES SHALL BE CLASS A AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.
- E. ASPHALT CEMENT: PETROLEUM ASPHALT CEMENT, AP 5 WITH PENETRATION OF 60-70 OR VISCOSITY GRADED ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.
- F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 408. G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.
- STANDARD SPECIFICATIONS SECTION 409. H. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115),
- 3. ASPHALT-AGGREGATE MIXTURE ALL BITUMINOUS MIXTURES ARE TO CONFORM TO CURRENT I.N.D.O.T. SPECIFICATIONS
- A. SURFACE COURSE: HMA SURFACE 9.5mm
- BINDER COURSE: HMA INTERMEDIATE 19.0mm C. BASE COURSE: TYPE: HMA BASE 25.0mm
- **PROVIDED A JOB MIX FORMULA FOR EACH TYPE OF ASPHALT PRIOR TO THE BEGINNING OF THE CONSTRUCTION PROJECT. 4. SURFACE PREPARATION
- A. REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE SURFACE IMMEDIATELY BEFORE APPLYING PRIME I) PROOF ROLL SUBGRADE SURFACE WITH LOADED TRI-AXLE TRUCK (48 HOUR NOTICE IS REQUIRED TO
 - BE GIVEN TO THE TOWN OF McCORDSVILLE TO CHECK FOR UNSTABLE AREAS AND AREAS REQUIRING ADDITIONAL COMPACTION. II) NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL
 - DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING. B. AGGREGATE BASE: AFTER PLACEMENT, PROOF ROLL COMPACTED AGGREGATE BASE SURFACE TO CHECK FOR UNSTABLE AREAS AND AREAS REQUIRING ADDITIONAL COMPACTION. NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL
 - DEFICIENT AGGREGATE BASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING. II) REMOVE LOOSE MATERIAL FROM COMPACTED AGGREGATE BASE SURFACE IMMEDIATELY BEFORE APPLYING PRIME COAT.
- 5. PLACING THE MIX A. GENERAL: PLACE BITUMINOUS AGGREGATE MIXTURE ON PREPARED SURFACE, SPREAD AND STRIKE-OFF. SPREAD MIXTURE AT MINIMUM TEMPERATURE OF 225 DEGREES F.(107 DEGREES C). PLACE INACCESSIBLE AND SMALL AREAS BY HAND. PLACE EACH COURSE TO REQUIRED GRADE, CROSS-SECTION, AND COMPACTED THICKNESS.
 - B. BASE COURSE, COMPACTED AGGREGATE: SPREAD AND COMPACT IN TWO LIFTS AS FOLLOWS: I) FIRST LIFT: NO. 5'S SHALL BE A MINIMUM OF 4" OR ½ THE TOTAL DEPTH OF AGGREGATE. EXTEND THE FIRS LIFT 4" OR A DISTANCE EQUAL TO THE DEPTH OF THE LIFT BEYOND THE SECOND LIFT.
 - II) SECOND LIFT: SIZE NO. 53 C. PRIME COAT: SUBBASE SURFACE SHALL BE PRIMED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SECTION 408 OF I.N.D.O.T. STANDARD SPECIFICATIONS. D. HOT ASPHALT CONCRETE BINDER COURSE: SPREAD AND ROLL TO MINIMUM FINISH DEPTHS INDICATED ON
 - E. TACK COAT: BINDER COURSE SHALL BE TACKED PRIOR TO THE INSTALLATION OF THE SURFACE COURSE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SECTION 409 OF I.N.D.O.T. STANDARD

- F. SURFACE COURSE: SPREAD AND ROLL TO MINIMUM FINISH DEPTH INDICATED ON DETAILS. FINISH ELEVATION SHALL BE TRUE TO LINE AND GRADE WITHIN "" OF TRUE ELEVATIONS.
- G. PAVER PLACING: PLACE IN STRIPS NOT LESS THAN 10' WIDE, UNLESS OTHERWISE ACCEPTABLE TO ARCHITECT/ENGINEER. AFTER FIRST STRIP HAS BEEN PLACED AND ROLLED, PLACE SUCCEEDING STRIPS AND EXTEND ROLLING TO OVERLAP PREVIOUS STRIPS. COMPLETE BINDER COURSE FOR A SECTION BEFORE PLACING SURFACE COURSE
- H. JOINTS: MAKE JOINTS BETWEEN OLD AND NEW PAVEMENTS, OR BETWEEN PAVER PASSES, OR BETWEEN SUCCESSIVE DAYS WORK, TO ENSURE CONTINUOUS BOND BETWEEN ADJOINING WORK. CONSTRUCT JOINTS TO HAVE SAME TEXTURE, DENSITY AND SMOOTHNESS AS OTHER SECTIONS. CLEAN CONTACT SURFACES AND APPLY TACT COAT.
- A. GENERAL: BEGIN ROLLING WHEN MIXTURE WILL BEAR ROLLER WEIGHT WITHOUT EXCESSIVE
- DISPLACEMENT.
-) COMPACT MIXTURE WITH HOT HAND TAMPERS OR VIBRATING PLATE COMPACTORS IN AREAS INACCESSIBLE TO ROLLERS. B. BREAKDOWN ROLLING: ACCOMPLISH BREAKDOWN OR INITIAL ROLLING IMMEDIATELY FOLLOWING ROLLING OF JOINTS AND OUTSIDE EDGE. CHECK SURFACE AFTER BREAKDOWN ROLLING, AND REPAIR
- DISPLACED AREAS BY LOOSENING AND FILLING, IF REQUIRED, WITH HOT MATERIAL. SECOND ROLLING: FOLLOW BREAKDOWN ROLLING AS SOON AS POSSIBLE, WHICH MIXTURE IS HOT. CONTINUE SECOND ROLLING UNTIL MIXTURE HAS BEEN THOROUGHLY COMPACTED. D. FINISH ROLLING: PERFORM FINISH ROLLING WHILE MIXTURE IS STILL WARM ENOUGH FOR REMOVAL OF
- ROLLER MARKS. CONTINUE ROLLING UNTIL ROLLER MARKS ARE ELIMINATED AND COURSE HAS ATTAINED MAXIMUM DENSITY. E. PATCHING: REMOVE AND REPLACE PAVING AREAS MIXED WITH FOREIGN MATERIALS AND DEFECTIVE AREAS. CUT OUT SUCH AREAS AND FILL WITH FRESH, HOT BITUMINOUS AGGREGATE MIX. COMPACT
- BY ROLLING TO MAXIMUM SURFACE DENSITY AND SMOOTHNESS. F. PROTECTION: AFTER FINAL ROLLING, DO NOT PERMIT VEHICULAR TRAFFIC ON PAVEMENT UNTIL IT HAS COOLED AND HARDENED G. ERECT BARRICADES TO PROTECT PAVING FROM TRAFFIC UNTIL MIXTURE HAS COOLED ENOUGH NOT TO BECOME MARKED.
- 7. TRAFFIC AND LANE MARKINGS A. CLEANING: SWEEP AND CLEAN SURFACE TO ELIMINATE LOOSE MATERIAL AND DUST. B. STRIPPING: USE CHLORINATED RUBBER BASE TRAFFIC LANE-MARKING PAINT, FACTORY MIXED,
 - QUICK-DRYING, AND NON-BLEEDING. COLOR: YELLOW/WHITE/BLUE I) DO NOT APPLY TRAFFIC AND LANE MARKING PAINT UNTIL LAYOUT AND PLACEMENT HAS BEEN VERIFIED WITH ARCHITECT/ENGINEER
- II) APPLY PAINT WITH MECHANICAL EQUIPMENT TO PRODUCE UNIFORM STRAIGHT EDGES. APPLY IN TWO COATS AT MANUFACTURER'S RECOMMENDED RATES.
- 8. FIELD QUALITY CONTROL A. TESTING AND INSPECTION SERVICE:
 - I) OWNER SHALL EMPLOY A TESTING LABORATORY TO PERFORM PAVEMENT TESTING AND INSPECTION SERVICE FOR QUALITY CONTROL DURING PAVING OPERATIONS. II) TESTING SERVICE SHALL HAVE REPRESENTATIVE PRESENT TO OBSERVE AND PERFORM TESTS
 - AT ALL TIMES PAVING WORK IS IN PROGRESS B. GENERAL: TESTING SERVICE REPRESENTATIVE SHALL TAKE A MINIMUM OF TWO SAMPLES PER LIFT OF BITUMINOUS AGGREGATE MIX EACH DAY BEFORE PAVING OPERATION. LABORATORY TEST SHALL BE PERFORMED ON THESE SAMPLES TO DETERMINE AGGREGATE GRADATION AND ASPHALT CONTENT.) TEST IN-PLACE COMPACTED BITUMINOUS AGGREGATE MIX COURSES FOR COMPLIANCE WITH REQUIREMENTS FOR THICKNESS, DENSITY AND AIR VOIDS AND SURFACE SMOOTHNESS. REPAIR
 - OR REMOVE AND REPLACE UNACCEPTABLE PAVING AS DIRECTED BY ENGINEER. II) A TEST SECTION AT A MINIMUM SIZE OF 100'X12' SHALL BE PLACED AT A LOCATION AS DIRECTED BY THE COUNTY PRIOR TO FULL PRODUCTION FOR EACH TYPE OF MIX. THE TEST SECTION SHALL BE COMPACTED TO DETERMINE A TARGET DENSITY FOR THE REMAINDER OF
- THE PAVEMENT. C. THICKNESS: IN-PLACE COMPACTED THICKNESS WILL NOT BE ACCEPTABLE IF EXCEEDING FOLLOWING ALLOWABLE VARIATION FROM REQUIRED THICKNESS:
 - AGGREGATE BASE COURSE: 1/2", PLUS OR MINUS BASE COURSE: 1/2", PLUS OR MINUS
 - BINDER COURSE: 1/4", PLUS OR MINUS SURFACE COURSE: 1/4", PLUS OR MINUS
 - I) A MINIMUM OF TWO PAVEMENT CORES PER COMPACTED LIFT SHALL BE TAKEN. CORES ARE TO BE TAKEN AT LOCATIONS AND AT TIMES OF DAY AS DIRECTED BY THE TESTING SERVICE. THE FOLLOWING TESTS SHALL BE PERFORMED BY THE TESTING SERVICE, ON EACH PAVEMENT CORE: II) A TEST SECTION AT A MINIMUM SIZE OF 100'X12' SHALL BE PLACED AT A LOCATION AS DIRECTED BY THE COUNTY PRIOR TO FULL PRODUCTION FOR EACH TYPE OF MIX. THE TEST SECTION SHALL BE COMPACTED TO DETERMINE A TARGET DENSITY OF THE REMAINDER OF THE
- D. PAVEMENT THICKNESS

PAVEMENT

- AIR VOIDS) TESTING SERVICE SHALL SUBMIT CERTIFIED RESULTS TO THE OWNER AND ARCHITECT/ENGINEER WITHIN 72 HOURS AFTER TESTS ARE MADE, WITH THEIR COMMENTS AND RECOMMENDATIONS FOR ACTION.
- II) PAVEMENT WHICH FAILS TO COMPLY WITH APPROVED JOB MIX FORMULA SHALL BE REPLACED AS DIRECTED BY THE ARCHITECT/ENGINEER. E. SURFACE SMOOTHNESS: TEST FINISHED SURFACE FOR SMOOTHNESS, USING 10' STRAIGHTEDGE
- APPLIED PARALLEL WITH, AND AT RIGHT ANGLES TO CENTERLINE OF PAVED AREA. SURFACE WILL NOT BE ACCEPTABLE IF EXCEEDING THE FOLLOWING TOLERANCES FOR SMOOTHNESS. AGGREGATE BASE COURSE SURFACE: 1/4"
- BASE COURSE SURFACE: 1/4" RINDER COLLEGE SURFACE: 1/8"
- WEARING COURSE SURFACE: 1/8" I) CHECK SURFACED AREAS AT INTERVALS AS DIRECTED BY TESTING SERVICE.
- F. DENSITY TESTS: DENSITY TESTS SHALL BE MADE AT EACH LIFT. TEST SHALL BE AS FOLLOWS: I) TESTS WILL BE REQUIRED AT VARIOUS TIMES AND LOCATIONS FOR SUBGRADE AND BASE COURSES FOR ASPHALT PAVING AREAS.
- G. TESTING SERVICE SHALL SUBMIT CERTIFIED RESULTS TO THE OWNER AND ENGINEER WITHIN 72 HOURS AFTER TESTS ARE MADE WITH THEIR COMMENTS AND RECOMMENDATIONS FOR ACTION. I) SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH I.N.D.O.T. STANDARD SPECIFICATIONS, SECTION 207 AND SUBSECTION 501.07. NO TRAFFIC SHALL BE PERMITTED ON THE PREPARED SUBGRADE PRIOR TO PAVING.
- II) SEE SITE GRADING, UNDER THE 'EARTHWORK' SECTION FOR ADDITIONAL COMPACTION REQUIREMENTS. 9. APPLICATION
 - A. GRADING: DO ANY NECESSARY GRADING IN ADDITION TO THAT PERFORMED IN ACCORDANCE WITH EARTHWORK SECTION TO BRING SUBGRADES, AFTER FINAL COMPACTION, TO THE REQUIRED GRADES AND SECTIONS FOR SITE IMPROVEMENTS. B. PREPARATION OF SUBGRADE: REMOVE SPONGY AND OTHERWISE UNSUITABLE MATERIAL AND REPLACE
 - WITH STABLE MATERIAL. NO TRAFFIC WILL BE ALLOWED ON PREPARED SUBGRADE PRIOR TO PAVING. C. COMPACTION OF SUBGRADE: THE FIRST 6 INCHES BELOW THE SUBGRADE SHALL BE COMPACTED TO AT LEAST 100% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE PROVISIONS OF AASHO T-99. WATER SHALL BE PREVENTED FROM STANDING ON THE COMPACTED SUBGRADE.
- D. UTILITY STRUCTURES: CHECK FOR CORRECT ELEVATION OF ALL MANHOLE COVERS, VALVE BOXES AND SIMILAR STRUCTURES LOCATED WITHIN AREAS TO BE PAVED, AND MAKE, OR HAVE MADE, ANY NECESSARY ADJUSTMENTS IN SUCH STRUCTURES. F. PLACING CONCRETE
- 1. SUBGRADE: PLACE CONCRETE ONLY ON A MOIST, COMPACTED SUBGRADE OR BASE FREE FROM LOOSE MATERIAL. PLACE NO CONCRETE ON A MUDDY OR FROZEN SUBGRADE. 2. FORMS: ALL FORMS SHALL BE FREE FROM WARP. TIGHT ENOUGH TO PREVENT LEAKAGE AND SUBSTANTIAL ENOUGH TO MAINTAIN THEIR SHAPE AND POSITION WITHOUT SPRINGING OR
- SETTLING, WHEN CONCRETE IS PLACED. FORMS SHALL BE CLEAN AND SMOOTH IMMEDIATELY BEFORE CONCRETING. 3. PLACING CONCRETE: CONCRETE SHALL BE DEPOSITED SO AS TO REQUIRE AS LITTLE REHANDLING AS PRACTICABLE. WHEN CONCRETE IS TO BE PLACED AT AN ATMOSPHERIC TEMPERATURE OF 35 DEGREES F. OR LESS, PARAGRAPH 702.10 OF THE I.N.D.O.T. SPECIFICATIONS LATEST
- REVISIONS SHALL BE FOLLOWED. F. CONCRETE CURB 1. EXPANSION JOINTS: SHALL BE 1/2 INCH THICK PREMOULDED AT ENDS OF ALL RETURNS AND AT A MAXIMUM SPACING OF 100 FEET.
- 2. CONTRACTION JOINTS UNLESS OTHERWISE PROVIDED, CONTRACTION JOINTS SHALL BE SAWED JOINTS SPACED 10 FEET ON CENTER.
- 3. FINISH: TAMP AND SCREED CONCRETE AS SOON AS PLACED, AND FILL ANY HONEY COMBED PLACES. FINISH SQUARE CORNERSTONE 1/4 INCH RADIUS AND OTHER CORNERS TO RADII SHOWN. G. CONCRETE WALKS AND EXTERIOR STEPS 1. SLOPES: PROVIDE 1/4 INCH PER FOOT CROSS SLOPE. MAKE ADJUSTMENTS ON SLOPES AT WALK
- INTERSECTIONS AS NECESSARY TO PROVIDE PROPER DRAINAGE. 2. DIMENSIONS: WALKS AND STEPS SHALL BE ONE COURSE CONSTRUCTION AND OF WIDTHS AND DETAILS SHOWN ON THE DRAWINGS. 3. FINISH: SCREED CONCRETE AND TROWEL WITH A STEEL TROWEL TO A HARD DENSE SURFACE AFTER SURFACE WATER HAS DISAPPEARED. APPLY MEDIUM BROOM FINISH AND SCRIBE TRANSVERSE JOINTS AT 6 FOOT SPACING. PROVIDE 1/2 INCH EXPANSION JOINTS WHERE

SIDEWALKS INTERSECT, AND AT A MAXIMUM SPACING OF 48 FEET BETWEEN EXPANSION JOINTS.

BY ONE OF THE METHODS DESCRIBED IN SECTION 501.17 OF THE I.N.D.O.T. SPECIFICATIONS, LATEST I. BITUMINOUS PAVEMENT: HOT MIX ASPHALT PAVEMENT SHALL BE AS SPECIFIED IN SECTION 402 OF THE I.N.D.O.T. SPECIFICATIONS LATEST REVISIONS. PAVING WILL NOT BE PERMITTED DURING

H. CURING CONCRETE FOR WALKS AND CURBS: EXCEPT AS OTHERWISE SPECIFIED, CURE ALL CONCRETE

- UNFAVORABLE WEATHER OR THEN THE TEMPERATURE IS 40 DEGREES F. AND FALLING. J. COMPACTED AGGREGATE SUBBASE: THE THICKNESS SHOWN ON THE DRAWINGS IS THE MINIMUM THICKNESS OF THE FULL COMPACTED SUBBASE. COMPACTION SHALL BE ACCOMPLISHED BY ROLLING WITH A SMOOTH WHEELED ROLLER WEIGHING 8 TO 10 TONS. COMPACT TO 95% COMPACTION USING STANDARD TESTING PROCEDURES. ALONG CURBS, HEADERS AND WALLS AND AT ALL PLACES NOT ACCESSIBLE TO THE ROLLER, THE AGGREGATE MATERIAL SHALL BE TAMPED WITH MECHANICAL
- K. CONCRETE RAMPS 1. CONCRETE RAMPS FOR THE DISABLED SHALL BE REQUIRED AS SPECIFIED IN THE PLANS AND SHALL CONFORM WITH CURRENT SPECIFICATIONS ESTABLISHED BY THE AMERICAN DISABILITIES ACT (ADA), SECTION 4.7, "CURB RAMPS."

TAMPERS OR WITH APPROVED HAND TAMPERS.

2. THE CONCRETE RAMP SHALL BE FLUSH AND FREE OF ABRUPT CHANGES WITH SIDEWALKS, GUTTERS OR STREETS, AND PROVIDE A MAXIMUM SLOPE OF 1:12. 3. THE MINIMUM WIDTH OF A CONCRETE RAMP SHALL BE (48) INCHES EXCLUSIVE OF FLARED SIDES. 4. SIDES OF CONCRETE RAMPS SHALL HAVE FLARED SIDES AS SHOWN IN THE PLANS.

STORM SEWER SYSTEMS

- A. THE WORK UNDER THIS SECTION INCLUDES ALL STORM SEWERS, STORM WATER INLETS, AND RELATED ITEMS, INCLUDING EXCAVATING AND BACKFILLING NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS. B. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL
- SPECIFICATIONS THE MORE STRINGENT SHALL APPLY. 2. STORM SEWER CONSTRUCTION A. STORM SEWERS
- 1. STORM SEWER STRUCTURES SHALL COMPLY WITH CURRENT SPECIFICATIONS OF THE TOWN OF McCORDSVILLE AND ALL OTHER RESPONSIBLE AGENCIES IN RESPECT TO DESIGN AND QUALITY OF CONSTRUCTION
- 2. ALL STORM SEWER CONSTRUCTION INSIDE PUBLIC RIGHT-OF-WAY, EITHER EXISTING OR TO BE DEDICATED, SHALL BE IN ACCORDANCE WITH THE MOST CURRENT I.N.D.O.T. STANDARD SPECIFICATION.
- 3. WHERE REINFORCED CONCRETE PIPE IS SHOWN ON THE CONSTRUCTION PLANS, IT SHALL BE IN ACCORDANCE WITH A.S.T.M. C-76 CLASS III WALL "C" UNLESS OTHERWISE SPECIFIED ON THE
- 4. WHERE CORRUGATED METAL PIPE IS SHOWN ON THE CONSTRUCTION PLANS, IT SHALL BE 14 GAUGE ALUMINIZED UNLESS OTHERWISE SPECIFIED AND SHALL HAVE THE CONNECTING BANDS AND SEALS AS SPECIFIED BY THE MANUFACTURER. C.M.P. SHALL BE ALUMINIZED PIPE IN ACCORDANCE WITH A.S.T.M. A-444.
- 5. MANHOLES, CATCH BASINS AND INLETS SHALL BE PRECAST CONCRETE. A. IF THE CONTRACTOR ELECTS TO USE ALTERNATE PRECAST STRUCTURES, HE SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER PRIOR TO ANY CONSTRUCTION. 6. PRECAST CONCRETE AND STEEL FOR MANHOLES AND INLETS SHALL BE IN ACCORDANCE WITH A.S.T.M. C-478.
- 7. CASTINGS SHALL BE AS SHOWN ON THE DETAIL SHEET(S) FOR MANUFACTURER, TYPE AND 8. B-BORROW GRANULAR BACKFILL SHALL BE REQUIRED UNDER ALL PAVEMENT AREAS AND TRENCHES WITHIN FIVE(5) FEET OF THE EDGE OF PAVEMENT.

9. ALL TRENCHES UNDER PAVEMENT SHALL BE COMPACTED TO 95 PERCENT MODIFIED PROCTOR

- APPLICATION A. PERMITS AND CODES: THE INTENT OF THIS SECTION OF THE SPECIFICATIONS IS THAT THE CONTRACTOR'S BID ON THE WORK COVERED HEREIN SHALL BE BASED UPON THE DRAWINGS AND SPECIFICATIONS BUT THAT THE WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. THE CONTRACTOR SHALL FURNISH ALL BONDS
 - NECESSARY TO GET PERMITS FOR CUTS AND CONNECTIONS TO EXISTING SEWERS. B. LOCAL STANDARDS: THE TERM "LOCAL STANDARDS" AS USED HEREIN MEANS THE STANDARDS OF DESIGN AND CONSTRUCTION OF THE RESPECTIVE MUNICIPAL DEPARTMENT OR UTILITY COMPANY. C. EXISTING IMPROVEMENTS: THE CONTRACTOR SHALL MAINTAIN IN OPERATING CONDITION ALL ACTIVE
 - UTILITIES, SEWERS AND OTHER DRAINS ENCOUNTERED IN THE SEWER INSTALLATION. THE CONTRACTOR SHALL REPAIR TO THE SATISFACTION OF THE OWNER ANY DAMAGE TO EXISTING ACTIVE IMPROVEMENTS. D. WORKMANSHIP: THIS WORK SHALL CONFORM TO ALL LOCAL, STATE AND NATIONAL CODES AND TO
- E. TRENCHING: LAY ALL PIPE IN OPEN TRENCHES. EXCEPT WHEN THE LOCAL AUTHORITY GIVES WRITTEN PERMISSION FOR TUNNELING. OPEN THE TRENCH SUFFICIENTLY AHEAD OF PIPE-LAYING TO REVEAL ANY OBSTRUCTIONS. THE MIN. WIDTH OF TRENCH SHALL BE 1.25 TIMES THE OUTSIDE DIA OF PIPE. SHEET AND BRACE TRENCH AS NECESSARY TO PROTECT WORKMEN AND ADJACENT STRUCTURES. ALL TRENCHING TO COMPLY WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS, KEEP TRENCHES FREE FROM WATER WHILE CONSTRUCTION IS IN PROGRESS. UNDER NO CIRCUMSTANCES SHALL PIPE OR APPURTENANCES BE LAID IN STANDING WATER. CONDUCT THE DISCHARGE FROM TRENCH DE-WATERING TO DRAINS OR NATURAL DRAINAGE

BE APPROVED BY ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION.

- F. SPECIAL SUPPORTS: WHENEVER, IN THE OPINION OF THE ENGINEER, THE SOIL AT OR BELOW THE PIPE GRADE IS UNSUITABLE FOR SUPPORTING SEWERS AND APPURTENANCES SPECIFIED IN THIS SECTION. SUCH SPECIAL SUPPORT. IN ADDITION TO THOSE SHOWN OR SPECIFIED, SHALL BE
- PROVIDED AS THE ENGINEER MAY DIRECT. AND THE CONTRACT WILL BE ADJUSTED G. BACKFILLING: BACKFILL SHALL BE PLACED AS SHOWN IN THE PLANS. NOTE THAT PVC & HDPE PIPE SHALL BE COVERED WITH 12" MINIMUM OF #8 STONE. COMPACT THIS BACKFILL THOROUGHLY TAKING CARE NOT TO DISTURB THE PIPE. BACKFILL UNDER AND WITHIN 5 FEET OF WALKS, PARKING AREAS, DRIVEWAYS AND STREETS SHALL BE "B" BORROW OR EQUIVALENT GRANULAR MATERIAL ONLY AND THOROUGHLY COMPACTED BY APPROVED METHODS.
- H. MANHOLE INVERTS: CONSTRUCT MANHOLE FLOW CHANNELS OF CONCRETE SEWER PIPE OR BRICK SMOOTHLY FINISHED AND OF SEMICIRCULAR SECTION CONFORMING TO THE INSIDE DIAMETER OF THE CONNECTING SEWERS. MAKE CHANGES IN SIZE OR GRADE GRADUALLY AND CHANGES INDIRECTION BY TRUE CURVES. PROVIDE SUCH CHANNELS FOR ALL CONNECTING SEWERS AT EACH MANHOLE. I. SUBDRAINS: ALL SUBDRAINS SHALL BE OF THE SIZE SHOWN ON THE PLANS AND SHALL BE
- CONSTRUCTED TO THE GRADES SHOWN. ALL DRAINS CONSTRUCTED OFF-SITE AS PART OF THE OUTLET DRAIN WILL BE LOCATED AS SHOWN. J. UTILITIES: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERITY ALL EXISTING UTILITIES AND CONDITIONS PERTAINING TO HIS WORK IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNERS OF THE VARIOUS UTILITIES BEFORE WORK IS STARTED. THE CONTRACTOR SHALL NOTIFY IN WRITING THE OWNER AND THE ENGINEER OF ANY CHANGES. ERRORS OR OMISSIONS FOUND ON THESE PLANS OR IN THE FIELD BEFORE WORK IS STARTED OR RESUMED.

WATER LINE SYSTEM

- 1. SCOPE OF WORK
- A. THE WORK UNDER THIS SECTION INCLUDES ALL WATER MAIN, FIRE HYDRANTS, SERVICES AND RELATED ITEMS, INCLUDING EXCAVATING AND BACKFILLING NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS.
- 2. MATERIALS A. ALL MATERIALS SHALL CONFORM TO ALL LOCAL, STATE, AND NATIONAL CODES AND SHALL BE APPROVED BY ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION.
- APPLICATION A. PERMITS AND CODES: THE INTENT OF THIS SECTION OF THE SPECIFICATIONS IS THAT THE CONTRACTOR'S BID ON THE WORK COVERED HEREIN SHALL BE BASED UPON THE DRAWINGS AND SPECIFICATIONS BUT THAT THE WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. THE CONTRACTOR SHALL FURNISH ALL BONDS NECESSARY TO GET PERMITS FOR CUTS AND CONNECTIONS TO EXISTING WATER MAINS.
- B. LOCAL STANDARDS: THE TERM "LOCAL STANDARDS" AS USED HEREIN MEANS THE STANDARDS OF DESIGN AND CONSTRUCTION OF THE RESPECTIVE MUNICIPAL DEPARTMENT OR UTILITY COMPANY. C. EXISTING IMPROVEMENTS: THE CONTRACTOR SHALL MAINTAIN IN OPERATING CONDITION ALL ACTIVE UTILITIES, SEWERS AND OTHER DRAINS ENCOUNTERED IN THE WATER LINE INSTALLATION. THE
- CONTRACTOR SHALL REPAIR TO THE SATISFACTION OF THE OWNER ANY DAMAGE TO EXISTING ACTIVE IMPROVEMENTS D. WORKMANSHIP: THIS WORK SHALL CONFORM TO ALL LOCAL, STATE AND NATIONAL CODES AND TO BE APPROVED BY ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION. THIS INCLUDES ALL REQUIRED CLEANING AND TESTING PROCEDURES REQUIRED BY THE STATE AND LOCAL AGENCIES. E. TRENCHING: LAY ALL PIPE IN OPEN TRENCHES. EXCEPT WHEN THE LOCAL AUTHORITY GIVES WRITTEN PERMISSION FOR TUNNELING. OPEN THE TRENCH SUFFICIENTLY AHEAD OF PIPE—LAYING TO REVEAL ANY OBSTRUCTIONS. THE MIN. WIDTH OF TRENCH SHALL BE 1.25 TIMES THE OUTSIDE DIA OF PIPE. SHEET AND BRACE TRENCH AS NECESSARY TO PROTECT WORKMEN AND ADJACENT STRUCTURES. ALL TRENCHING TO COMPLY WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. KEEP TRENCHES FREE FROM WATER WHILE CONSTRUCTION IS IN
- WATER. CONDUCT THE DISCHARGE FROM TRENCH DE-WATERING TO DRAINS OR NATURAL DRAINAGE F. SPECIAL SUPPORTS: WHENEVER, IN THE OPINION OF THE ENGINEER, THE SOIL AT OR BELOW THE PIPE GRADE IS UNSUITABLE FOR SUPPORTING PIPE AND APPURTENANCES SPECIFIED IN THIS SECTION, SUCH SPECIAL SUPPORT, IN ADDITION TO THOSE SHOWN OR SPECIFIED, SHALL BE

PROGRESS. UNDER NO CIRCUMSTANCES SHALL PIPE OR APPURTENANCES BE LAID IN STANDING

- PROVIDED AS THE ENGINEER MAY DIRECT, AND THE CONTRACT WILL BE ADJUSTED. G. BACKFILLING: BACKFILL SHALL BE PLACED AS SHOWN IN THE PLANS. NOTE THAT PVC & HDPE PIPE SHALL BE COVERED WITH 12" MINIMUM OF #8 STONE. COMPACT THIS BACKFILL THOROUGHLY, TAKING CARE NOT TO DISTURB THE PIPE. BACKFILL UNDER AND WITHIN 5 FEET OF WALKS, PARKING AREAS, DRIVEWAYS AND STREETS SHALL BE "B" BORROW OR EQUIVALENT GRANULAR MATERIAL
- ONLY AND THOROUGHLY COMPACTED BY APPROVED METHODS. H. UTILITIES: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING UTILITIES AND CONDITIONS PERTAINING TO HIS WORK. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNERS OF THE VARIOUS UTILITIES BEFORE WORK IS STARTED. THE CONTRACTOR SHALL NOTIFY IN WRITING THE OWNER AND THE ENGINEER OF ANY CHANGES, ERRORS OR OMISSIONS FOUND ON THESE PLANS OR IN THE FIELD BEFORE WORK IS STARTED OR RESUMED.

SANITARY SEWER SYSTEMS

- 1. SCOPE OF WORK
- A. THE WORK UNDER THIS SECTION INCLUDES ALL SANITARY SEWERS, MANHOLES, CLEANOUTS AND RELATED ITEMS INCLUDING EXCAVATING AND BACKFILLING, NECESSARY TO COMPLETE THE WORK SHOWN IN THE DRAWINGS, STARTING OUTSIDE THE BUILDING WALLS. THE END OF SEWERS SHALL BE TIGHTLY PLUGGED OR CAPPED AT THE TERMINAL POINTS, ADJACENT TO THE BUILDING DRAIN AS SPECIFIED IN THE PLUMBING SPECIFICATIONS AND/OR ARCHITECTURAL DRAWINGS.
- 2. MATERIALS
 - 1. ALL GRAVITY PLASTIC SEWER PIPE FITTINGS SHALL CONFORM TO ASTM D3034 WITH A CELL CLASSIFICATION OF 12454-B OR 12454-C. FLEXIBLE GASKETED COMPRESSION JOINTS SHALL BE USED FOR PVC & PVC TRUSS PIPE. NO SOLVENT CEMENT JOINTS SHALL BE ALLOWED. 2. ABS SEWER PIPE AND FITTINGS SHALL CONFORM TO ASTM D2680 LATEST REVISION. 3. TRACER WIRE SHALL BE INSTALLED WITH ALL NEW SANITARY PIPE.
- B. MANHOLES 1. PRECAST REINFORCED CONCRETE MANHOLE SECTIONS AND STEPS SHALL CONFORM TO ASTM C-478 LATEST REVISION. EXTERIOR OF THE MANHOLE SHALL BE WATERPROOFED WITH BISMATIC MATERIAL. 2. CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOW HOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL-CLEANED BY SHOT-BLASTING OR BY SOME OTHER APPROVED METHOD. THEY SHALL BE COATED WITH ASPHALT PAINT WHICH SHALL RESULT IN A SMOOTH COATING. TOUGH AND TENACIOUS WHEN COLD, NOT TACKY OR BRITTLE. THEY SHALL BE GRAY IRON MEETING ASTM A-48 LATEST REVISION. MANHOLE COVERS FOR SANITARY SEWER SHALL BE NEENAH
- TYPE R-1077-A W/R-1712-B-SP FRAME W/SELF-SEALING APPLICATION. 3. JOINTS: MANHOLE SECTIONS SHALL BE JOINED WITH A NOMINAL ½ INCH SIZE BUTYL RUBBER BASE GASKET MATERIAL, CONFORMING TO AASHTO M-198 AND FEDERAL SPECIFICATION SS-S-210A. JOINT
- CONFORMS TO ASTM C-443. 4. MANHOLES SHALL INCLUDE STEPS. SANITARY SEWER STANDARDS REVISIONS SHALL BE THAT STEPS ARE TO BE POLYPROPYLENE COATED STEEL REINFORCING OR AN APPROVED NON-CORROSIVE FIBERGLASS MATERIAL. THE COPOLYMER POLYPROPYLENE SHALL MEET THE REQUIREMENTS OF ASTMD-4101 WITH DEFORMED 3/8 INCH DIAMETER OR LARGER REINFORCING STEEL CONFORMING TO ASTM A-615, GRADE 60. STEPS SHALL BE A MAXIMUM OF 24 INCHES FROM TOP, 24 INCHES FROM BOTTOM AND 16 INCHES SPACING BETWEEN.
- C. SANITARY FORCE MAINS 1. ALL SANITARY FORCE MAIN PIPE AND FITTINGS SHALL CONFORM TO ASTM D2241, STANDARD SPECIFICATION FOR POLY VINYL CHLORIDE (PVC) PRESSURE-RATED PIPE, (SDR 21, GREATER THAN 4 INCH DIAMFTER) 2. TRACER WIRE SHALL BE INSTALLED WITH ALL SANITARY FORCE MAIN PIPE.
- D. CASING 1. SANITARY SEWERS CONSTRUCTED WITH POLYVINYL CHLORIDE (PVC) AND INSTALLED UNDER RAILROADS SHALL BE CASED IN CONFORMANCE WITH AWWA STANDARD C900-89, STANDARD FOR POLYVINYL CHLORIDE (PVC) PRESSURE PIPE, 4 IN. THROUGH 12 IN. FOR WATER DISTRIBUTION, APPENDIX A. 3. APPLICATION
- A. PERMITS AND CODES: THE INTENT OF THIS SECTION OF THE SPECIFICATIONS IS THAT THE CONTRACTOR'S BID ON THE WORK COVERED HEREIN SHALL BE BASED UPON THE DRAWINGS AND SPECIFICATIONS BUT THAT THE WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. CONTRACTOR SHALL FURNISH ALL BONDS NECESSARY TO GET PERMITS FOR CUTS AND CONNECTIONS TO EXISTING SEWERS.
- THE TERM "LOCAL STANDARDS" AS USED HEREIN MEANS THE STANDARDS OF DESIGN AND CONSTRUCTION OF THE RESPECTIVE MUNICIPAL DEPARTMENT OR UTILITY COMPANY.
- THE CONTRACTOR SHALL MAINTAIN IN OPERATING CONDITION ALL ACTIVE UTILITIES, SEWERS AND OTHER DRAINS ENCOUNTERED IN THE SEWER INSTALLATION. THE CONTRACTOR SHALL REPAIR TO THE SATISFACTION OF THE OWNER ANY DAMAGE TO EXISTING ACTIVE IMPROVEMENTS. D. WORKMANSHIP

THIS WORK SHALL CONFORM TO ALL LOCAL, STATE AND NATIONAL CODES AND TO BE APPROVED BY ALL

- LOCAL AND STATE AGENCIES HAVING JURISDICTION. E. TRENCHING LAY ALL PIPE IN OPEN TRENCHES, EXCEPT WHEN THE LOCAL AUTHORITY GIVES WRITTEN PERMISSION FOR TUNNELING. OPEN THE TRENCH SUFFICIENTLY AHEAD OF PIPE-LAYING TO REVEAL ANY OBSTRUCTIONS. THE MIN. WIDTH OF TRENCH SHALL BE 1.25 TIMES THE OUTSIDE DIA. PLUS 12 INCHES. SHEET AND BRACE TRENCH AS NECESSARY TO PROTECT WORKMEN AND ADJACENT STRUCTURES. ALL TRENCHING TO COMPLY WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. KEEP TRENCHES FREE FROM WATER WHILE CONSTRUCTION IS IN PROGRESS. UNDER NO CIRCUMSTANCES SHALL PIPE OR APPURTENANCES BE LAID IN STANDING WATER. CONDUCT THE DISCHARGE FROM TRENCH DE-WATERING TO DRAINS OR NATURAL DRAINAGE
- WHENEVER, IN THE OPINION OF THE ENGINEER, THE SOIL AT OR BELOW THE PIPE GRADE IS UNSUITABLE FOR SUPPORTING SEWERS AND APPURTENANCES SPECIFIED IN THIS SECTION. SUCH SPECIAL SUPPORT, IN ADDITION TO THOSE SHOWN OR SPECIFIED, SHALL BE PROVIDED AS THE ENGINEER MAY DIRECT, AND THE CONTRACT WILL BE ADJUSTED.
- BACKFILL SHALL BE PLACED AS SHOWN IN THE PLANS. COMPACT THIS BACKFILL THOROUGHLY, TAKING CARE NOT TO DISTURB THE PIPE. BACKFILL UNDER AND WITHIN 5 FEET OF WALKS. PARKING AREAS. DRIVEWAYS AND STREETS SHALL BE GRANULAR MATERIAL ONLY AND THOROUGHLY COMPACTED BY APPROVED METHODS. H. FLOW CHANNELS: THE FLOW CHANNELS WITHIN MANHOLES SHALL BE AN INTEGRAL PART OF THE PRECAST BASE. THE

CHANNELS SHALL BE SHAPED AND FORMED FOR A CLEAN TRANSITION WITH PROPER HYDRAULICS TO ALLOW

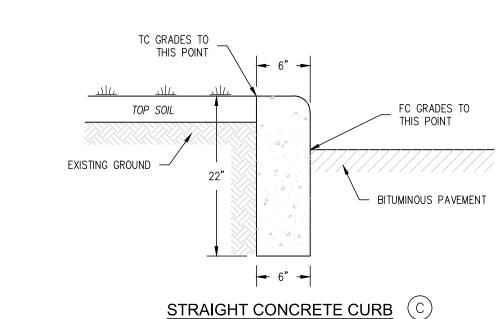
- THE SMOOTH CONVEYANCE OF FLOW THROUGH THE MANHOLE. THE BENCH WALL SHALL BE FORMED TO THE CROWN OF THE INLET AND OUTLET PIPES TO FORM A "U" SHAPED CHANNEL. THE BENCH WALL SHALL SLOPE BACK FROM THE CROWN AT 1/2 INCH PER FOOT TO THE MANHOLE WALL. LEAKAGE TESTING: THE CONTRACTOR SHALL FURNISH THE NECESSARY EQUIPMENT TO TEST SEWERS FOR INFILTRATION. ALL
- SANITARY SEWER GRAVITY LINES, UPON COMPLETION, SHALL BE REQUIRED TO PASS ONE OF THE FOLLOWING J. HYDROSTATIC TEST A HYDROSTATIC TEST SHALL BE PERFORMED WITH A MINIMUM OF TWO (2) FEET OF POSITIVE HEAD. THE
- RATE OF EXFILTRATION OR INFILTRATION SHALL NOT EXCEED TWO HUNDRED (200) GALLONS PER INCH OF PIPE DIAMETER PER LINEAR MILE PER DAY. K. LOW PRESSURE AIR TEST A LOW PRESSURE AIR TEST SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM F1417, STANDARD TEST
- METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR, FOR L. ALL SANITARY FORCE MAIN LINES, UPON COMPLETION, SHALL BE REQUIRED TO PASS A LEAKAGE TEST CONDUCTED IN ACCORDANCE WITH AWWA STANDARD C605-94, AWWA STANDARD FOR UNDERGROUND INSTALLATION OF POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND FITTINGS FOR WATER.
- M. ALL SANITARY SEWER MANHOLES SHALL ALSO BE AIR TESTED IN ACCORDANCE WITH ASTM C1244-93, STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE (VACUUM) TEST. N. FLUSHING SEWERS:
- FLUSH ALL SANITARY SEWERS EXCEPT BUILDING SEWERS WITH WATER TO OBTAIN FREE FLOW THROUGH EACH LINE. REMOVE ALL SILT AND TRASH FROM APPURTENANCES JUST PRIOR TO ACCEPTANCE OF WORK. O. PLASTIC SEWER PIPE INSTALLATION: PLASTIC SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 PER LATEST REVISION. PIPES SHALL BE TESTED AFTER THIRTY DAYS, USING A MANDREL THAT IS 95% OF THE INSIDE DIAMETER OF THE PIPE BEING TESTED. SAID MANDREL SHALL BE PULLED BY HAND THROUGH EACH PIPE SECTION TO ENSURE
- DEFLECTION IS LESS THAN ACCEPTABLE LIMITS. NO ROOF DRAINS, FOOTING DRAINS AND/OR SURFACE WATER DRAINS MAY BE CONNECTED TO THE SANITARY
- SEWER SYSTEMS, INCLUDING TEMPORARY CONNECTIONS DURING CONSTRUCTION. WHERE WATER LINES AND SANITARY SEWERS CROSS AND WATER LINES CANNOT BE PLACED ABOVE THE SEWER WITH A MINIMUM OF 18 INCHES VERTICAL CLEARANCE. THE SEWER MUST BE CONSTRUCTED OF WATER WORKS GRADE DUCTILE IRON PIPE WITH MECHANICAL JOINTS WITHIN 10 FEET OF THE WATER LINE.

INDIVIDUAL BUILDING LINES SHALL BE 6 INCHES IN DIAMETER AND OF MATERIAL EQUAL TO THAT SPECIFIED IN

2A OF THIS SECTION. SERVICE LINES SHALL BE CONNECTED TO THE MAIN SEWER AT LOCATIONS SHOWN IN

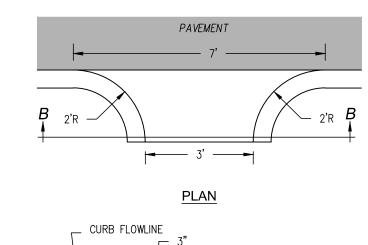
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERITY ALL EXISTING UTILITIES AND CONDITIONS PERTAINING TO HIS WORK. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNERS OF THE VARIOUS UTILITIES BEFORE WORK IS STARTED. THE CONTRACTOR SHALL NOTIFY IN WRITING THE DWNER AND THE ENGINEER OF ANY CHANGES, ERRORS OR OMISSIONS FOUND ON THESE PLANS OR IN THE FIELD BEFORE WORK IS STARTED OR RESUMED.

S. SERVICE LATERALS:

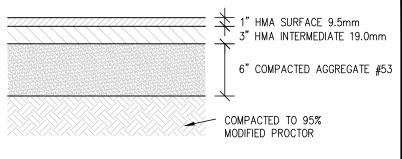


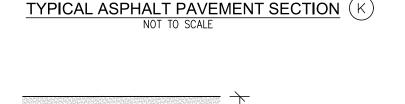
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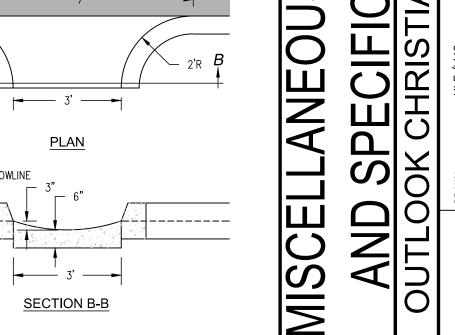
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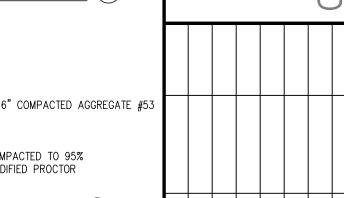


MODIFIED PROCTOR TEMPORARY CUL-DE-SAC SECTION $\,$ (K1)

COMPACTED TO 95%



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SHEET

