

FINAL CONSTRUCTION F **CENTER GROVE HIGH SCHO** SOFTBALL & GOLF FACILIT

TONES CROSSING RD/W



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Renningtan Re

OWNER

CENTER GROVE COMMUNITY SCHOOL CORPORATION 3653 WEST WHITELAND ROAD BARGERSVILLE, IN 46106 PHONE: (317) 881-0515 CONTACT: DARRELL THOMPSON EMAIL: THOMPSONJRD@CENTERGROVE.K12.IN.US EMAIL: gilko@crossroadengineers.com

emminance

PLANNING

PLANNING ENGINEER

86 WEST COURT STREET FRANKLIN, IN 46131 PHONE: (317) 346-4352 CONTACT: RICHARD HOOVER

COUNTY SURVEYOR JOHNSON COUNTY PLANNING & ZONING JOHNSON COUNTY SURVEYOR'S OFFICE **86 WEST COURT STREET** FRANKLIN, IN 46131 PHONE: (317) 346-4343 CONTACT: GREGG CANTWELL EMAIL: gcantwell@co.johnson.in.us

ENGINEER

CROSSROAD ENGINEERS, PC

115 N 17th AVENUE

BEECH GROVE, IN 46107

PHONE: (317) 780-1555

CONTACT: GREGORY J. ILKO



PROPOSED IMPROVEMENTS: 0.661 acres

	ANS		CRGSSRGAD ENGINEERS, PC Transportation & Development Consultants Arth. MeME. EEH 000K, M 4107 (307) 700-1655 AFET 100
	PLAN INDEX	LITLE SHEET	/E SOFTBALL & GOLF FACILITY w LMC cHeckeD GU GNED DJM APPR. GJ
SHEET # 100 200 300 301 400 401 500 600	SUBJECTTITLE SHEETTOPOGRAPHIC PLANSITE DIMENSION, UTILITY, GRADING AND EROSION CONTROL PLANEROSION CONTROL DETAILSMISCELLANEOUS DETAILSWATER DETAILSSPECIFICATIONSLANDSCAPE PLANPHOTOMETRIC PLAN		DRA JOB No. JOB 2022 DES
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Note: Listed I SEWER GREENWOOD SANITATION 367 S. WASHINGTON ST GREENWOOD, IN 46143 PHONE: (317) 888–125 CONTACT: KEITH MEIER FIBER ZAYO 9209 CASTLE GATE DRI INDIANAPOLIS, IN 46256 PHONE: (765) 341–119 CONTACT: WAYLON HIGO METRONET 3701 COMMUNICATIONS EVANSVILLE, IN 47715 PHONE: (812) 213–105 CONTACT: LORI KEMPER	UTILITIES welow are the Indiana Underground Plant Protection Services Contacts; Others not listed may exist. WATER CABLE BARGERSVILLE WATER COMCAST A 24 N. MAIN STREET 1600 W. VERNAL PIKE BARGERSVILLE, WATER COMCAST 4 BARGERSVILLE, IN 46106 BLOOMINGTON, IN 47404 4 PHONE: (317) 422–3121 PHONE: (812) 360–3090 4 CONTACT: KEVIN KILLINGER CONTACT: STEVE MCARTOR VE 240 N. MERIDIAN STREET JOHNSON COUNTY REMC AT&T JOHNSON COUNTY REMC 750 INTERNATIONAL DRIVE PHONE: (317) 265–3050 PHONE: (317) 738–7622 CONTACT: MATT SPINDLER WAY BARGERSVILLE FIRE DEPARTMENT GAS 90 N. ST. RD. 135 ENCOWNT ENERGY 91 N. ST. RD. 135 ENCOWNT ENERGY 92 BARGERSVILLE, IN 46106 MUNCE, IN 47302 PHONE: (317) 422–5187 PHONE: (75) 287–2119 93 N. ST. KULINGER WINCE, IN 47302 94 PHONE: (317) 422–5187 CONTACT: JON EASTHAM		
<u>DTE:</u> The underground ut no guarantees The surveyor fu although the s surveyor has n	lities shown have been located from field survey information and existing drawings. The surveyor makes that the underground utilities comprise all such utilities in the area, either in-service or abandoned. rther does not warrant that the underground utilities shown are in the exact location indicated urveyor does certify that they are located as accurately as possible from information available. The ot physically located the underground utilities.	6 8 9	5 4 3 2 1 1 NO. DATE

SHEET IUU



KEYMAP

MET 370 EVAN PHON CONT

<u>NOTE:</u> surveyor has not physically located the underground utilities.



I	ELEMENT	RULE SHEET	5 ERO	SION C	ONTRO	- PLAN SHEET	INDEX	SHEET	
	A4 A5	301	A19 A21	300	B4 B5	300 & 301 300 & 301	B12 B13	300 & 301 301	
	A6	300	A22 A23	300 300	B6 B7	300 & 301 300 & 301	B14	301	
	A16 A18	300 301	B2 B3	301 301	B10 B11	300 & 301 300 & 301			
2	11 BY 17 I The 11x17	NCH PLAT inch Plat	has been	n submitte	d to the	respective	Soils and	Water Co	onservation
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.4	and electri in the Spri VICINITY M The Vicinit	ic utilities ing of 202 AP	shall serv 23.	the right	perty as w	vell. Const	ruction is	anticipated	to begin
5	The Vicinity Map is located in the right half of the Erosion Control Details. Latitude N 39"34'28" Longitude W 86"11'26" LEGAL DESCRIPTION The Legal Description of the project site is located in the lower right augdrant of the								
6	Ine Legal Description of the project site is located in the lower right quadrant of the Erosion Control Details. LOCATION OF ALL LOTS AND PROPOSED SITE IMPROVEMENTS All pertinent lot information is included on the plan view of the Erosion Control Plan.								
/	The Hydr 051202011	ologic Ur 40010	nit Code	for the	represer	nted wat	ershed of	this p	roject is:
8 9	STATE AND An IDEM C STORMWATI)/OR FEDE onstruction ER DISCHA	RAL WATER n Stormwa RGE	R QUALITY ter Generc	PERMITS Il Permit (CSGP) sho	III be requi	red for thi	s project.
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3	project site PROPOSED	e. POST COM		N STORMW	ATER QUAL	ITY MEAS	URES		inoff f
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	MEASURE	LINJIU	, UILUI			01		m/ / I LI/	-, ⊂ /) –
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MONITORING AND MAINTENANCE GUIDELINES ADDITIONAL MATERIAL HANDLING AND SPILL PREVENTION GRAVEL CONSTRUCTION DRIVE AND PARKING AREA: PLAN Inspect daily and after each storm event. Immediately remove mud and sediment tracked or washed A Purpose onto public roads. Top dress with clean aggregate as needed. Reshape pad as needed for drainage and runoff control. The purpose of this plan is two fold: To help protect the health and safety of those working on the site as well Flushing should only be used if the water can be conveyed into a sediment trap or basin. as the environment. 2. Preventing the contamination of storm water runoff. Pollutants generated <u>TOPSOIL:</u> onsite may include gasoline, diesel fuel, oils, grease, paints, pesticides, Inspect daily until vegetation is established. nutrients, concrete washout, soil, solvents, paper, plastic, Styrofoam, metals, Check for erosion or damage of newly spread topsoil and repair immediately. glass and other forms of liquid or solid wastes. This plan outlines procedures to help prevent health and safety issues, TEMPORARY AND PERMANENT SEEDING: Inspect seeding within 24 hours of each rain event and at least once every seven calendar days until spills and provide a response procedure should a spill occur. vegetation is established. Check for erosion or movement of mulch and repair immediately. B. Prevention and Readiness Plan to add fertilizer the following growing season according to soil test recommendations. 1. The contractor or responsible party will prepare a contact list in the event Repair damaged, bare, or sparse areas by filling any gullies, re-fertilizing, over- or re-seeding, and mulchina. 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 of the contact list and chain of command. re-preparing the seed bed. If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations. Reference the most current INDOT Specification. MULCHING: Inspect within 24 hours of each rain event to check for movement of mulch or for erosion. employees and emphasizing the importance to all employees. If washout, breakage, or erosion is present, repair damage areas, re-seed, apply new mulch, and approved by Indiana Department of Environmental Management. anchor mulch in place. Continue inspections until vegetation is firmly established. Reference the most current INDOT Specification. material during rain events. C. Spill Response EROSION CONTROL BLANKET: Minor - Small spills that typically involve oil gasoline, paint, hydraulic fluid etc. A. Inspect within 24 hours of each rain event and at least once every seven calendar days. Check for Minor spills can be controlled by the first responder at the discovery of the spill. erosion or displacement of the blanket. 1. Contain spill to prevent material from entering storm or ground water. Do If any area shows erosion, pull back that portion of the blanket covering the eroded area, add soil not flush with water or bury. and tamp, re-seed the area, and re-lay and staple the blanket. After vegetative establishment, check the treated area periodically. contaminated soil and dispose of properly. <u>SILT FENCE:</u> Inspect within 24 hours of each rain event and at least once every seven calendar days. 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 addressed. At the discovery of the spill: causing the fabric to bulge. Take care to avoid undermining the fence during clean out. not flush with water or bury. After the contributing drainage area has been stabilized, remove the fence and sediment deposits, bring the disturbed area to grade and stabilize. FABRIC DROP INLET PROTECTION: Inspect the fabric barrier periodically and after each $\chi^{\prime\prime}$ rain event, and make needed repairs Contact 911 if this spill could be a safety issue. immediately Contact supervisors and designated inspectors immediately Remove sediment from the pool area to provide storage for the next storm. Avoid damaging or 5. Contaminated solids to be removed to an approved landfill. undercutting the fabric during sediment removal. When the contributing drainage area has been stabilized, remove and properly dispose of all construction material and sediment, grade the area to the elevation of the top of the inlet, then stabilize. groundwater pollution. CONCRETE WASHOUT: Concrete washout area shall be installed prior to any concrete placement on site. stormwater system. 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 material spill. pump rigs. The concrete washout area shall be repaired and enlarged or cleaned out as necessary to maintain capacity for wasted concrete. At the end of construction, all concrete shall be removed from the site and disposed of at an approved waste site. submitted to the owner as soon as possible. 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. reports to IDEM or the National Response Center o The location of the spill. CONSTRUCTION SEQUENCE & SCHEDULE OF EROSION CONTROL IMPLEMENTATION o The time of the spill. o Identification of the spilled substance. Schedule a Rule 5 Pre-Construction Meeting with the Johnson County MS4 Coordinator at least 48 hours prior to start of work. may be further spilled. 2. Install silt fence & storm sewer inlet protection per the Erosion Control Plan (Sheet 300) before any land o The duration and source of the spill. disturbing activity begins. o Name and location of the damaged waters. 3. Strip topsoil and stockpile as needed. o Name of spill response organization. 4. Rough grade site. Disturbed areas should be seeded immediately following rough grading. Areas that will o What measures were taken in the spill response. not be disturbed again should be permanently seeded. No unvegetated areas should be exposed for more o Other information that may be significant. than seven days. 5. Construct building, sidewalks and other site improvements. Remove concrete washout areas upon Additional regulation or requirements may be present. A spill response professional completion of concrete placement. should be consulted to make sure all appropriate and required steps have been . Remove and dispose of all trash from the site. 7. Final grade site utilizing stockpiled topsoil and install all permanent surface stabilization features including given by Emergency Response. seeding, erosion control blankets, sod, and plantings. All erosion control blankets shall be installed per The following procedures and practices will help prevent unnecessary spills manufacturers recommendations as soon as final grading is complete. I. Vehicle and Equipment Fueling Description and Purpose: GENERAL EROSION CONTROL REQUIREMENTS FOR COMPLIANCE WITH IDEM GENERAL PERMIT RULES FOR STORM WATER RUNOFF FROM CONSTRUCTION SITES and training employees and subcontractors in proper fueling procedures. 1. All Erosion Control practices shall be in accordance with the latest edition of the INDIANA STORM WATER Limitations: QUALITY MANUAL 2. 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 impractical to send vehicles and equipment offsite for fueling. 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 Implementation 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 fueling area at a site. land disturbing activity at the site. The site shall be stabilized by seeding, sodding, mulching, covering, or by Discourage "topping-off" of fuel tanks. other equivalent Erosion Control measures. 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. 6. During the period of construction activity, all sediment basins and other Erosion Control measures shall be dedicated fueling area. maintained by the contractor. At the completion of construction, the contractor shall coordinate the transfer Remove the absorbent materials promptly and dispose of properly. of required maintenance responsibilities with the owner. 7. Public or private roadways shall be kept cleared of accumulated sediment. Bulk clearing of accumulated rather, transport the equipment to designated fueling areas. sediment shall not include flushing the area with water. Cleared sediment shall be returned to the point of likely origin or other suitable location. procedures. 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 material is required. level-arade areas. 9. Additional Erosion Control measures may be required by state or county agencies. to contain spills. 10. Nozzles used in vehicle and equipment fueling should be equipped with an unattended. above ground storage tanks. Inspection and Maintenance should be removed from the project site.

contamination of storm water by onsite pollutants, help prevent fuel and chemical

- 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
- 2. The contractor/owner shall maintain a list of qualified 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 4. All materials used in the course of a cleanup will be disposed in a manor
- 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
- 2. Use absorbent material to clean-up spill material and any subsequently

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 1. Contain spill to prevent material from entering storm or ground water. Do

- 2. Use absorbent material to clean-up spills and dispose of properly. Spills on impervious surfaces should be contained with a dry absorbent. Spills on clavey 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 aroundwater. Dispose of contaminated soils or absorbents properly.

Major or Hazardous Spills - More than ten gallons, there is the potential for death, injury or illness to humans or animals or has the potential for surface or

- 1. Control or contain the spill without risking bodily harm. Temporarily plug storm drains if possible to prevent migration of the spill into the
- 2. Immediately contact the local Fire Department at 911 to report any hazard 3. Contact supervisors and designated inspectors immediately. Other county or municipal 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 site. A written report should be 4. As soon as possible but within 2 hours of discovery, contact the
- Department of Environmental Management, Office of Emergency Response 1-888-233-7745. The following information should be noted for future o Name, address and phone number of person making the spill report.
- o Approximate quantity of the substance that has been spilled or

taken. Contaminated solids should only be removed from the site after approval is

1. 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,

- 1. Onsite vehicle and equipment fueling should only be used where it is
- 1. 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 by eliminating the need for a separate
- Absorbent spill cleanup materials and spill kits should be available in fueling areas and on fueling trucks, and should be disposed of properly after use. 4. Drip pans or absorbent pads should be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a
- Use absorbent materials on small spills. Do not hose down or bury the spill.
- 6. Avoid mobile fueling of mobile construction equipment around the site; 7. Train employees and subcontractors in proper fueling and cleanup
- 8. 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
- 9. Protect fueling areas with berms and dikes to prevent run—on, runoff, and
- automatic shutoff to control drips. Fueling operations should not be left 11. Federal, state, and local requirements should be observed for any stationary

1. Vehicles and equipment should be inspected each day of use for leaks. Leaks should be repaired immediately or problem vehicles or equipment Keep ample supplies of spill cleanup materials onsite.

Immediately clean up spills and properly dispose of contaminated soils.

II. Solid Waste Management Description of Purpose:

1. 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 stored:
- 1. Solid waste generated from trees and shrubs removed during land clearing, demolition of 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.
- 4. Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers. and ciaarettes. 5. Construction waste including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts. Styrofoam and

other materials send transport and package construction materials.

ADDITIONAL EROSION CONTROL

MEASURES MAY BE REQUIRED BY

STATE, CITY OR COUNTY OFFICIALS

Implementation:

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.
- 4. 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 construction. Collect site trash daily, especially during rainy and windy conditions. Remove this solid waste promptly since erosion and sediment control devices tend to collect litter.
- 8. 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 construction debris.
- 9. Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor.
- 10. Arrange for regular waste collection before containers overflow.
- 11. Clean up immediately if a container does spill. 12. 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.
- 13. Locate solid waste dumpster a minimum of 50' away from storm water inlets or other drainage facilities. 14. Locate dumpster on stone or earth to minimize the potential for spills or leaks to drain immediately into a drainaae facility.

Inspection and Maintenance:

1. 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 discharges occur. Inspect construction waste are regularly

4. Arrange for regular waste collection. <u>III. Concrete Washout</u>

The following steps will help reduce stormwater pollution from concrete wastes:

- 1. 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. 2. Incorporate requirements for concrete waste management into material supplier and subcontractors'
- aareements. 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 bodies.
- Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
- 3. Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed
- 4. Avoid creating runoff by drinking water to a bermed or level area when washing concrete to remove fine
- particles and expose the aggregate. 5. 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.

- IV. Vehicle Maintenance Areas Purpose- To prevent spills during the normal maintenance of construction machinery.
- Implementation- Where and when feasible, maintenance shall be preformed offsite in covered facility with an impervious
- 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.
- 4. Inspect equipment daily for leaks or worn hoses. Repair or replace to prevent onsite spills 5. Properly dispose of all fluids removed or spilled from machinery.

Store materials in a weather proof/vandal resistant locker or building

Provide and read instructions for the proper use and storage of all materials.

Purpose- To prevent the purposeful discharge of sediment laden water into waters of the United States.

A suitable practice is needed at the discharge to allow the suspended solids to be

filters and chemical flocculants can do an excellent job of removing the fine materials

outlet of the pumping bag must be erosion resistant to prevent additional sedimentation.

LEVEL & SLOPING, OPEN AREAS

TALL FESCUE

RED CLOVER **

KENTUCKY BLUEGRASS

CREEPING RED FESCUE

KENTUCKY BLUEGRASS

EMERALD CROWNVETCH **

KENTUCKY BLUEGRASS

CREEPING RED FESCUE 4

CREEPING RED FESCUE

KENTUCKY BLUEGRASS

TALL FESCUE FESTUCA L ARUNDINACEA

PERENNIAL RYEGRASS

LOLIUM PERENNE

CORANILLA VARIA

TRIFOLIUM PRATENSE

RANKIN 1 GOOD 2 MEDIUM

SEEDBED PREPARATION

- NOT TOLERANT

CROWNVETCH

RED CLOVER

FESTUCA RUBRA

POA PROTINSIS

CONDITION

AWNS & HIGH MAINTENANCE AREAS

STEEP BANKS AND CU

V. Fluids, paints, solvents and other chemicals storage and use Purpose- To prevent spills during the use and storage of the materials.

Store materials in there original containers.

Maintain safety data sheets on all products.

Keep materials away from flammable sources.

Implementation

drainage facility.

TEMPORARY SEEDING DATES

EB MAR APR MAY JUN JUL AUG SEP OCT NOV DE

RMANENT SEEDING DATES

IRRIGATION NEEDED DURING THIS PERIOD. TO CONTROL EROSION AT TIMES OTHER THAN IN THE SHADED AREAS,

** -INCREASE SEEDING APPLICATION BY 50%.

* NOT NECESSARY WHERE MULCH IS APPLIED.

KIND OF SEED | PER 1,000 SQ. FT. | PER ACRE | REMARKS

* -LATE SUMMER SEEDING DATES MAY BE EXTENDED 5 DAYS IF MULCH IS APPLIED.

TEMPORARY SEEDINGS

MULCH ANCHORING METHODS

APPLICATION METHOD

OF THE SLOPE.

DOZER CLEATS.

RECOMMENDATIONS.

RECOMMENDATIONS.

SHOULD BE FOLLOWED.

CRIMP OR PUNCH THE STRAW OR HAY

TWO TO FOUR INCHES INTO THE SOIL.

OPERATE MACHINERY ON THE CONTOUR

OPERATE DOZER UP AND DOWN SLOPE

APPLY ACCORDING TO MANUFACTURER'S

APPLY ACCORDING TO MANUFACTURER'S

INSTALL NETTING IMMEDIATELY AFTER

APPLYING MULCH. ANCHOR NETTING

STRIPS SHOULD OVERLAP WITH EACH

UP-SLOPE STRIP OVERLAPPING FOUR

TO SIX INCHES OVER THE ADJACENT

DOWN-SLOPE STRIP. BEST SUITED TO

SLOPE APPLICATIONS. IN MOST INSTANCES,

INSTALLATION DETAILS ARE SITE SPECIFIC

SO MANUFACTURER'S RECOMMENDATIONS

WITH STAPLES. EDGES OF NETTING

TO PREVENT FORMATION OF RILLS BY

 WHEAT OR RYE
 3.5 LBS.
 2 BU.
 COVER SEED 1" TO 1 1/2" DEEP

 CODING GATE
 2.3 LBS.
 3 BU.
 COVER SEED 1" TO 1 1/2" DEEP

ANNUAL RYEGRASS 1.0 LBS. 40 LBS. COVER SEED 1/4" DEEP *

<u>VI. Disposal of sediment laden water</u>

Implementation

WHEAT OR RYE

SPRING OATS

ANNUAL RYEGRASS

NON-IRRIGATED 3

IRRIGATED

ANCHORING METHODS

SET STRAIGHT)

MULCH ANCHORING TOOL OR FARM

LEATING WITH DOZER TRACKS

SYNTHETIC TACKIFIERS, BINDERS, OR

NETTING (SYNTHETIC OR BIO-

DEGRADABLE MATERIAL)

WOOD HYDROMULCH FIBERS

SOIL STABILIZERS

DISK (DULL, SERRATED, AND BLADES

DORMANT SEEDING **

YmcB2

(1) (C)

(mdD3

MnC2

For bulk material stored onsite, provide diking or double containment in case of leaks or failures. No washout of solvent from paint supplies should be done near or into a storm water inlet or other







EARTHWORK	F. SURFACE COURSE: SPREAD AND ROLL TO MINIMUM FINISH DEPTH INDICATED ON DETAILS. FINISH ELEVATION SHALL BE TRUE TO LINE AND GRADE WITHIN ½" OF TRUE ELEVATIONS.
1. SCOPE OF WORK A. EXTENT: THE WORK REQUIRED UNDER THIS SECTION CONSISTS OF ALL EXCAVATING, FILLING, ROUGH	G. PAVER PLACING: PLACE IN STRIPS NOT LESS THAN 10' MIDE, 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
GRADING AND RELATED THEMS 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	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
CLEARING AND GRUBBING, REMOVAL OF TREES AND STUMPS, STRIPPING AND STORAGE OF TOPSOIL, FILL COMPACTION AND ROUGH GRADING OF ENTIRE SITE. ALL TREES SHALL BE REMOVED UNLESS 6.	AND APPLY TACT COAT. . ROLLING A. GENERAL: BEGIN ROLLING WHEN MIXTURE WILL BEAR ROLLER WEIGHT WITHOUT EXCESSIVE DISPLACEMENT.
 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 LOCATED OF DUAD AND LENGTH OF HALL SUALL SUITABLE THE CONTRACTOR'S DESPONDENTLY. 	 I) 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
 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 OUTDATE OF STREET FOR STREET AND THE SOURCE DAY SHEED BY THE OWNER. 	JOINTS AND OUTSIDE EDGE. CHECK SURFACE AFTER BREAKDOWN ROLLING, AND REPAIR DISPLACED AREAS BY LOOSENING AND FILLING, IF REQUIRED, WITH HOT MATERIAL. C. SECOND ROLLING: FOLLOW BREAKDOWN ROLLING AS SOON AS POSSIBLE, WHICH MIXTURE IS HOT.
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	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 FLIMINATED AND COURSE HAS ATTAINED
 BENCHMARK MAINTAIN CAREFULLY ALL BENCH MARKS, MONUMENTS AND OTHER REFERENCE POINTS; IF DISTURBED OR DESTROYED, CONTRACTOR SHALL CONTACT ENGINEER. 	MAXIMUM DENSITY. E. PATCHING: REMOVE AND REPLACE PAVING AREAS MIXED WITH FOREIGN MATERIALS AND DEFECTIVE AREAS CUT OUT SUCH AREAS AND FUL WITH FRESH HOT BITUMINOUS AGGREGATE MIX COMPACT BY
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	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
THE SITE FOR CONSTRUCTION. 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 7	G. ERECT BARRICADES TO PROTECT PAVING FROM TRAFFIC UNTIL MIXTURE HAS COOLED ENOUGH NOT TO BECOME MARKED. TRAFFIC AND LANE MARKINGS
PERMITS ARE OBTAINED (WHERE APPLICABLE). 4. HANDLING OF TOPSOIL	A. CLEANING: SWEEP AND CLEAN SURFACE TO ELIMINATE LOOSE MATERIAL AND DUST. B. STRIPPING: USE CHLORINATED RUBBER BASE TRAFFIC LANE-MARKING PAINT, FACTORY MIXED, OUCK DRYING AND NON REFERENCE
A. REMOVE ALL ORGANIC MATERIAL FROM THE AREAS TO BE OCCUPIED BT 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, CRASS, STONES, EC.	COLOR: YELLOW/WHITE/BLUE I) DO NOT APPLY TRAFFIC AND LANE MARKING PAINT UNTIL LAYOUT AND PLACEMENT HAS BEEN
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 AREAS	VERIFIED WITH ARCHITECT/ENGINEER. II) APPLY PAINT WITH MECHANICAL EQUIPMENT TO PRODUCE UNIFORM STRAIGHT EDGES. APPLY IN TWO COATS AT MANUFACTURER'S RECOMMENDED RATES. . FIELD QUALITY CONTROL
5. DISPOSITION OF UTILITIES A. RULES AND REGULATIONS GOVERNING THE RESPECTIVE UTILITIES SHALL BE OBSERVED IN EXECUTING ALL	 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.
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.	 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
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.	BITUMINOUS AGGREGATE MIX EACH DAY BEFORE PAVING OPERATION. LABORATORY TEST SHALL BE PERFORMED ON THESE SAMPLES TO DETERMINE AGGREGATE GRADATION AND ASPHALT CONTENT.
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.	REQUIREMENTS FOR THICKNESS, DENSITY AND AIR VOIDS AND SURFACE SMOOTHNESS. REPAIR OR REMOVE AND REPLACE UNACCEPTABLE PAVING AS DIRECTED BY ENGINEER.
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.	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.
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	ALLOWABLE VARIATION FROM REQUIRED THICKNESS WILL NOT BE ACCEPTABLE IF EXCEEDING FOLLOWING ALLOWABLE VARIATION FROM REQUIRED THICKNESS: AGGREGATE BASE COURSE: ½", PLUS OR MINUS
AND BOTTOM. C. COMPACTION REQUIREMENTS: 1. ALL BUILDING PAD AREAS SHALL BE COMPACTED TO STANDARDS SPECIFIED BY LOCAL AND/OR	BASE COURSE: ½", PLUS OR MINUS BINDER COURSE: ¼", PLUS OR MINUS SURFACE COURSE: ¼", PLUS OR MINUS
STATE BUILDING CODES. 2. COMPACTION REQUIREMENTS OF PAVED AREAS SHALL BE 95% OF MAXIMUM DRY DENSITY. 7. FARTH WORK BALANCE	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:
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.	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 PAVEMENT. D. PAVEMENT THICKNESS
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	DENSITY AIR VOIDS I) TESTING SERVICE SHALL SUBMIT CERTIFIED RESULTS TO THE OWNER AND ARCHITECT/ENGINEER
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 FITHER AN EXCESS	WITHIN 72 HOURS AFTER TESTS ARE MADE, WITH THEIR COMMENTS AND RECOMMENDATIONS FOR ACTION.
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 ADJUISTMENTS CAN BE MADE TO CORRECT THE IMBALANCE OF	DIRECTED BY THE ARCHITECT/ENGINEER. E. SURFACE SMOOTHNESS: TEST FINISHED SURFACE FOR SMOOTHNESS, USING 10' STRAIGHTEDGE APPLIED DARAUEL MUTL AND AT DIGUT ANGLES TO CENTERINE OF DAVED AREA. SURFACE WILL NOT DE
EARTH. STREETS/PARKING LOTS	ACCEPTABLE IF EXCEEDING THE FOLLOWING TOLERANCES FOR SMOOTHNESS. ACCEPTABLE IF EXCEEDING THE FOLLOWING TOLERANCES FOR SMOOTHNESS. AGGREGATE BASE COURSE SUFFACE: 1/4"
1. SCOPE OF WORK	BASE COURSE SURFACE: 1/4 BINDER COURSE SURFACE: 1/8" WEARING COURSE SURFACE: 1/8"
 A. THE WORK REQUIRED UNDER THIS SECTION INCLUDES ALL CONCRETE AND BITUMINOUS PAVING AND RELATED ITEMS NECESSARY TO COMPLETE THE WORK INDICATED ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO: 1. ALL STREETS, PARKING AREAS WITHIN THE CONTRACT LIMITS. 	 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.
 CURBS AND CONCRETE RAMPS. SIDEWALKS AND CONCRETE SLABS. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL 	 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 THE MOST CURRENT I.N.D.O.T. STANDARD
B. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL SPECIFICATIONS THE MORE STRINGENT SHALL APPLY. 9.	SPECIFICATION. NO TRAFFIC SHALL BE PERMITTED ON THE PREPARED SUBGRADE PRIOR TO PAVING. II) SEE SITE GRADING, UNDER THE 'EARTHWORK' SECTION FOR ADDITIONAL COMPACTION REQUIREMENTS. . APPLICATION
2. PAVEMENT CONSTRUCTION A. ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE JOHNSON COUNTY PLANNING AND HIGHWAY	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.
DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE MOST CURRENT I.N.D.O.T. STANDARD SPECIFICATION. B. FLEXIBLE PAVEMENT	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
 MATERIALS GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS. 	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.
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 THE MOST CURRENT	SIMILAR STRUCTURES LOCATED WITHIN AREAS TO BE PAVED, AND MAKE, OR HAVE MADE, ANY NECESSARY ADJUSTMENTS IN SUCH STRUCTURES.
I.N.D.O.T. STANDARD SPECIFICATION. C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS, COARSE AGGREGATES SHALL	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.
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	SUBSTANTIAL ENOUGH TO MAINTAIN THEIR SHAPE AND POSITION WITHOUT SPRINGING OR SETTLING, WHEN CONCRETE IS PLACED. FORMS SHALL BE CLEAN AND SMOOTH IMMEDIATELY BEFORE
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 THE MOST CURRENT I.N.D.O.T.	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 DECREES F. OR LESS THE MOST CURPENT IN DOT. STANDARD SPECIFICATIONS SHALL BE
STANDARD SPECIFICATION. F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO THE MOST CURRENT LN.D.O.T. STANDARD SPECIFICATION.	FOLLOWED. F. CONCRETE CURB
G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO THE MOST CURRENT I.N.D.O.T. STANDARD SPECIFICATION.	 EXPANSION JOINTS: SHALL BE 1/2 INCH THICK PREMOULDED AT ENDS OF ALL RETURNS AND AT A MAXIMUM SPACING OF 100 FEET. CONTRACTION JOINTS UNLESS OTHERWISE PROVIDED, CONTRACTION JOINTS SHALL BE SAWED JOINTS
TYPE III. 3. ASPHALT-AGGREGATE MIXTURE	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.
ALL BITUMINOUS MIXIURES ARE TO CONFORM TO CURRENT I.N.D.O.T. SPECIFICATIONS A. SURFACE COURSE: HMA SURFACE 9.5mm B. BINDER COURSE: HMA INTERMEDIATE 19.0mm	G. CONCRETE WALKS AND EXTERIOR STEPS 1. SLOPES: PROVIDE ¼ INCH PER FOOT CROSS SLOPE. MAKE ADJUSTMENTS ON SLOPES AT WALK INTERSECTIONS AS NECESSARY TO PROVIDE PROPER DRAINAGE.
C. BASE COURSE: IYPE: HMA BASE 25.0mm **PROVIDED A JOB MIX FORMULA FOR EACH TYPE OF ASPHALT PRIOR TO THE BEGINNING OF THE CONSTRUCTION PROJECT.	 DIMENSIONS: WALKS AND STEPS SHALL BE ONE COURSE CONSTRUCTION AND OF WIDTHS AND DETAILS SHOWN ON THE DRAWINGS. FINISH: SCREED CONCRETE AND TROWEL WITH A STEEL TROWEL TO A HARD DENSE SURFACE AFTER
4. SURFACE PREPARATION A. REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE SURFACE IMMEDIATELY BEFORE APPLYING PRIME COAT	SURFACE WATER HAS DISAPPEARED. APPLY MEDIUM BROOM FINISH AND SCRIBE TRANSVERSE JOINTS AT 6 FOOT SPACING. PROVIDE $\frac{1}{2}$ INCH EXPANSION JOINTS WHERE SIDEWALKS INTERSECT, AND AT A MAXIMUM SPACING OF 48 FEET BETWEEN EXPANSION JOINTS.
 I) PROOF ROLL SUBGRADE SURFACE WITH LOADED TRI-AXLE TRUCK (48 HOUR NOTICE IS REQUIRED TO BE GIVEN TO THE JOHNSON COUNTY HIGHWAY DEPT.) TO CHECK FOR UNSTABLE AREAS AND AREAS DECUMPLE ADDITIONAL CONDACTION 	 H. CURING CONCRETE FOR WALKS AND CURBS: EXCEPT AS OTHERWISE SPECIFIED, CURE ALL CONCRETE BY ONE OF THE METHODS DESCRIBED IN THE MOST CURRENT I.N.D.O.T. STANDARD SPECIFICATION. I. BITUMINOUS PAVEMENT: HOT MIX ASPHALT PAVEMENT SHALL BE AS SPECIFIED IN THE MOST CURRENT
II) NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.	I.N.D.O.T. STANDARD SPECIFICATION. PAVING WILL NOT BE PERMITTED DURING 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
 D. AUGREGATE DASE: AFTER PLACEMENT, PROOF ROLL COMPACTED AGGREGATE BASE SURFACE TO CHECK FOR UNSTABLE AREAS AND AREAS REQUIRING ADDITIONAL COMPACTION. I) NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL 	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
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.	ROLLER, THE AGGREGATE MATERIAL SHALL BE TAMPED WITH MECHANICAL TAMPERS OR WITH APPROVED HAND TAMPERS. K. CONCRETE RAMPS
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 E (107 DEGREES C) PLACE INACCESSIBLE	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 "CURR RAMPS."
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 LIETS AS FOLLOWS:	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.
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.	J. THE MINIMUM WIDTH OF A CUNCRETE RAMP SHALL BE (48) INCHES EXCLUSIVE OF FLARED SIDES. 4. SIDES OF CONCRETE RAMPS SHALL HAVE FLARED SIDES AS SHOWN IN THE PLANS.
II) SECOND LIFT: SIZE NO. 53 C. PRIME COAT: SUBBASE SURFACE SHALL BE PRIMED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE MOST CURRENT I.N.D.O.T. STANDARD SPECIFICATION.	
 D. HUT ASPHALT CONCRETE BINDER COURSE: SPREAD AND ROLL TO MINIMUM FINISH DEPTHS INDICATED ON DETAILS. E. TACK COAT: BINDER COURSE SHALL BE TACKED PRIOR TO THE INSTALLATION OF THE SURFACE COURSE 	
IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE MOST CURRENT I.N.D.O.T. STANDARD SPECIFICATION.	

FINISH DEPTH INDICATED ON DETAILS. FINISH STORM SEWER SYSTEMS ½" OF TRUE ELEVATIONS.

THE MORE STRINGENT SHALL APPLY.

FEET OF THE EDGE OF PAVEMENT.

CONSTRUCTION

A-444

C-478

EXISTING SEWERS.

NATURAL DRAINAGE CHANNELS.

BY APPROVED METHODS

AS SHOWN

AND THE CONTRACT WILL BE ADJUSTED.

3. APPLICATION

10' WIDE, UNLESS OTHERWISE ACCEPTABLE TO 1. SCOPE OF WORK LACED AND ROLLED, PLACE SUCCEEDING STRIPS A. THE WORK UNDER THIS SECTION INCLUDES ALL STORM SEWERS, STORM WATER INLETS, AND RELATED ITEMS, COMPLETE BINDER COURSE FOR A SECTION

- NTS, OR BETWEEN PAVER PASSES, OR BETWEEN DETWEEN ADJOINING WORK. CONSTRUCT JOINTS 2. STORM SEWER CONSTRUCTION AS OTHER SECTIONS. CLEAN CONTACT SURFACES A. STORM SEWERS
- LER WEIGHT WITHOUT EXCESSIVE DISPLACEMENT. OR VIBRATING PLATE COMPACTORS IN AREAS AL ROLLING IMMEDIATELY FOLLOWING ROLLING OF BREAKDOWN ROLLING, AND REPAIR DISPLACED
- SOON AS POSSIBLE. WHICH MIXTURE IS HOT. HOROUGHLY COMPACTED. URE IS STILL WARM ENOUGH FOR REMOVAL OF S ARE FLIMINATED AND COURSE HAS ATTAINED
- XED WITH FOREIGN MATERIALS AND DEFECTIVE HOT BITUMINOUS AGGREGATE MIX. COMPACT BY EHICULAR TRAFFIC ON PAVEMENT UNTIL IT HAS
- UNTIL MIXTURE HAS COOLED ENOUGH NOT TO
- OOSE MATERIAL AND DUST. FIC LANE-MARKING PAINT, FACTORY MIXED,
- INT UNTIL LAYOUT AND PLACEMENT HAS BEEN DDUCE UNIFORM STRAIGHT EDGES. APPLY IN TWO
- PERFORM PAVEMENT TESTING AND INSPECTION ESENT TO OBSERVE AND PERFORM TESTS AT ALL
- KE A MINIMUM OF TWO SAMPLES PER LIFT OF ING OPERATION. LABORATORY TEST SHALL BE ATE GRADATION AND ASPHALT CONTENT. EGATE MIX COURSES FOR COMPLIANCE WITH VOIDS AND SURFACE SMOOTHNESS. REPAIR OR DIRECTED BY ENGINEER. SHALL BE PLACED AT A LOCATION AS DIRECTED EACH TYPE OF MIX. THE TEST SECTION SHALL FOR THE REMAINDER OF THE PAVEMENT.
- OT BE ACCEPTABLE IF EXCEEDING FOLLOWING
- CTED LIFT SHALL BE TAKEN. CORES ARE TO BE AS DIRECTED BY THE TESTING SERVICE. THE ESTING SERVICE, ON EACH PAVEMENT CORE: SHALL BE PLACED AT A LOCATION AS DIRECTED EACH TYPE OF MIX. THE TEST SECTION SHALL OF THE REMAINDER OF THE PAVEMENT.
- TS TO THE OWNER AND ARCHITECT/ENGINEER THEIR COMMENTS AND RECOMMENDATIONS FOR
- /ED JOB MIX FORMULA SHALL BE REPLACED AS WATER LINE SYSTEM SMOOTHNESS, USING 10' STRAIGHTEDGE APPLIED 1. SCOPE OF WORK
- INE OF PAVED AREA. SURFACE WILL NOT BE 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. 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. 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

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

1. STORM SEWER STRUCTURES SHALL COMPLY WITH CURRENT SPECIFICATIONS OF THE JOHNSON COUNTY

3. WHERE REINFORCED CONCRETE PIPE IS SHOWN ON THE CONSTRUCTION PLANS, IT SHALL BE IN

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. IF THE CONTRACTOR ELECTS TO USE ALTERNATE PRECAST STRUCTURES, HE SHALL SUBMIT SHOP

6. PRECAST CONCRETE AND STEEL FOR MANHOLES AND INLETS SHALL BE IN ACCORDANCE WITH A.S.T.M.

7. CASTINGS SHALL BE AS SHOWN ON THE DETAIL SHEET(S) FOR MANUFACTURER, TYPE AND MODEL NUMBER.

8. GRANULAR BACKFILL SHALL BE REQUIRED UNDER ALL PAVEMENT AREAS AND TRENCHES WITHIN FIVE(5)

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

B. LOCAL STANDARDS: THE TERM "LOCAL STANDARDS" AS USED HEREIN MEANS THE STANDARDS OF DESIGN

C. EXISTING IMPROVEMENTS: THE CONTRACTOR SHALL MAINTAIN IN OPERATING CONDITION ALL ACTIVE UTILITIES,

D. WORKMANSHIP: THIS WORK SHALL CONFORM TO ALL LOCAL, STATE AND NATIONAL CODES AND TO BE

CONTRACTOR SHALL FURNISH ALL BONDS NECESSARY TO GET PERMITS FOR CUTS AND CONNECTIONS TO

SEWERS AND OTHER DRAINS ENCOUNTERED IN THE SEWER INSTALLATION. THE CONTRACTOR SHALL REPAIR TO

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, SHEFT 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

F. SPECIAL SUPPORTS: WHENEVER, IN THE OPINION OF THE ENGINEER, THE SOIL AT OR BELOW THE PIPE GRADE

G. BACKFILLING: BACKFILL SHALL BE PLACED AS SHOWN IN THE PLANS. NOTE THAT PVC & HDPE PIPE SHALL

H. MANHOLE INVERTS: CONSTRUCT MANHOLE FLOW CHANNELS OF CONCRETE SEWER PIPE OR BRICK, SMOOTHLY

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,

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

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.

SUBDRAINS: ALL SUBDRAINS SHALL BE OF THE SIZE SHOWN ON THE PLANS AND SHALL BE CONSTRUCTED TO

J. UTILITIES: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERITY ALL EXISTING UTILITIES AND

THE GRADES SHOWN. ALL DRAINS CONSTRUCTED OFF-SITE AS PART OF THE OUTLET DRAIN WILL BE LOCATED

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

BE LAID IN STANDING WATER. CONDUCT THE DISCHARGE FROM TRENCH DE-WATERING TO DRAINS OR

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

AND CONSTRUCTION OF THE RESPECTIVE MUNICIPAL DEPARTMENT OR UTILITY COMPANY.

THE SATISFACTION OF THE OWNER ANY DAMAGE TO EXISTING ACTIVE IMPROVEMENTS.

APPROVED BY ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION.

PROVIDE SUCH CHANNELS FOR ALL CONNECTING SEWERS AT EACH MANHOLE.

OR IN THE FIELD BEFORE WORK IS STARTED OR RESUMED.

2. ALL STORM SEWER CONSTRUCTION INSIDE PUBLIC RIGHT-OF-WAY, EITHER EXISTING OR TO BE DEDICATED.

ACCORDANCE WITH A.S.T.M. C-76 CLASS III WALL "C" UNLESS OTHERWISE SPECIFIED ON THE PLANS.

SHALL BE IN ACCORDANCE WITH THE MOST CURRENT I.N.D.O.T. STANDARD SPECIFICATION.

5. MANHOLES, CATCH BASINS AND INLETS SHALL BE PRECAST CONCRETE.

DRAWINGS TO THE ENGINEER PRIOR TO ANY CONSTRUCTION.

PLANNING AND ALL OTHER RESPONSIBLE AGENCIES IN RESPECT TO DESIGN AND QUALITY OF

- 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. 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 CHANNELS.
- 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 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, CLI ITEMS INCLUDING EXCAVATING AND BACKFILLING, NECESSARY TO COMPLETE THE DRAWINGS, STARTING OUTSIDE THE BUILDING WALLS. THE END OF SEWERS SHALL BI CAPPED AT THE TERMINAL POINTS, ADJACENT TO THE BUILDING DRAIN AS SPECIF SPECIFICATIONS AND/OR ARCHITECTURAL DRAWINGS
- 2. MATERIALS
- A. SANITARY SEWERS 1. ALL GRAVITY PLASTIC SEWER PIPE FITTINGS SHALL CONFORM TO ASTM D3034 WITH OF 12454-B OR 12454-C. FLEXIBLE GASKETED COMPRESSION JOINTS SHALL BE 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 CONFI LATEST REVISION. EXTERIOR OF THE MANHOLE SHALL BE WATERPROOFED WITH BISM 2. CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOW HOLES, POROSITY, DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL-CLEANED B SOME OTHER APPROVED METHOD. THEY SHALL BE COATED WITH ASPHALT PAINT A SMOOTH COATING. TOUGH AND TENACIOUS WHEN COLD. NOT TACKY OR BRITTLE
- IRON MEETING ASTM A-48 LATEST REVISION. MANHOLE COVERS FOR SANITARY S TYPE R-1077-A W/R-1712-B-SP FRAME W/SELF-SEALING APPLICATION. 3. JOINTS: MANHOLE SECTIONS SHALL BE JOINED WITH A NOMINAL $rac{1}{2}$ INCH SIZE GASKET MATERIAL, CONFORMING TO AASHTO M-198 AND FEDERAL SPECIFICAT
- CONFORMS TO ASTM C-443. 4. MANHOLES SHALL INCLUDE STEPS. SANITARY SEWER STANDARDS REVISIONS SHALL TO BE POLYPROPYLENE COATED STEEL REINFORCING OR AN APPROVED NON-MATERIAL. THE COPOLYMER POLYPROPYLENE SHALL MEET THE REQUIREMENTS DEFORMED 3/6 INCH DIAMETER OR LARGER REINFORCING STEEL CONFORMING TO STEPS SHALL BE A MAXIMUM OF 24 INCHES FROM TOP, 24 INCHES FROM E SPACING BETWEEN.
- SANITARY FORCE MAINS 1. ALL SANITARY FORCE MAIN PIPE AND FITTINGS SHALL CONFORM TO AST SPECIFICATION FOR POLY VINYL CHLORIDE (PVC) PRESSURE-RATED PIPE, (SDR 21, DIAMETER).
- 2. TRACER WIRE SHALL BE INSTALLED WITH ALL SANITARY FORCE MAIN PIPE. D. CASING
- 1. SANITARY SEWERS CONSTRUCTED WITH POLYVINYL CHLORIDE (PVC) AND INSTALL SHALL BE CASED IN CONFORMANCE WITH AWWA STANDARD C900-89, STAN CHLORIDE (PVC) PRESSURE PIPE, 4 IN. THROUGH 12 IN. FOR WATER DISTRIBUTION, E. TRENCHING: LAY ALL PIPE IN OPEN TRENCHES, EXCEPT WHEN THE LOCAL AUTHORITY GIVES WRITTEN 3. APPLICATION A. PERMITS AND CODES:
 - THE INTENT OF THIS SECTION OF THE SPECIFICATIONS IS THAT THE CONTRACTOR COVERED HEREIN SHALL BE BASED UPON THE DRAWINGS AND SPECIFICATIONS BUT COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVER FURNISH ALL BONDS NECESSARY TO GET PERMITS FOR CUTS AND CONNECTIONS TO EX B. LOCAL STANDARDS THE TERM "LOCAL STANDARDS" AS USED HEREIN MEANS THE STANDARDS OF DESIGN
 - THE RESPECTIVE MUNICIPAL DEPARTMENT OR UTILITY COMPANY. C EXISTING IMPROVEMENTS THE CONTRACTOR SHALL MAINTAIN IN OPERATING CONDITION ALL ACTIVE UTILITIES
 - DRAINS ENCOUNTERED IN THE SEWER INSTALLATION. THE CONTRACTOR SHALL REPAIR OF THE OWNER ANY DAMAGE TO EXISTING ACTIVE IMPROVEMENTS. WORKMANSHIP:
 - THIS WORK SHALL CONFORM TO ALL LOCAL, STATE AND NATIONAL CODES AND TO LOCAL AND STATE AGENCIES HAVING JURISDICTION. TRENCHING
 - LAY ALL PIPE IN OPEN TRENCHES, EXCEPT WHEN THE LOCAL AUTHORITY GIVES WE TUNNFLING, OPEN THE TRENCH SUFFICIENTLY AHEAD OF PIPE-LAYING TO REVEAL MIN. WIDTH OF TRENCH SHALL BE 1.25 TIMES THE OUTSIDE DIA. PLUS 12 INCHES. SH AS NECESSARY TO PROTECT WORKMEN AND ADJACENT STRUCTURES. ALL TRENCH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. KEEP TRENCHES FR CONSTRUCTION IS IN PROGRESS. UNDER NO CIRCUMSTANCES SHALL PIPE OR APPU STANDING WATER. CONDUCT THE DISCHARGE FROM TRENCH DE-WATERING TO DRAINS CHANNELS.
 - SPECIAL SUPPORTS: WHENEVER, IN THE OPINION OF THE ENGINEER, THE SOIL AT OR BELOW THE PIPE GRA SUPPORTING SEWERS AND APPURTENANCES SPECIFIED IN THIS SECTION, SUCH SPECIAL TO THOSE SHOWN OR SPECIFIED, SHALL BE PROVIDED AS THE ENGINEER MAY DIREC WILL BE ADJUSTED. G. BACKFILLING:
 - BACKFILL SHALL BE PLACED AS SHOWN IN THE PLANS. COMPACT THIS BACKFILL THO NOT TO DISTURB THE PIPE. BACKFILL UNDER AND WITHIN 5 FEET OF WALKS, PARK AND STREETS SHALL BE GRANULAR MATERIAL ONLY AND THOROUGHLY COMPACTED BY H. FLOW CHANNELS:
 - THE FLOW CHANNELS WITHIN MANHOLES SHALL BE AN INTEGRAL PART OF THE CHANNELS SHALL BE SHAPED AND FORMED FOR A CLEAN TRANSITION WITH PROPER THE SMOOTH CONVEYANCE OF FLOW THROUGH THE MANHOLE. THE BENCH WALL SHA CROWN OF THE INLET AND OUTLET PIPES TO FORM A "U" SHAPED CHANNEL. THE BEN BACK FROM THE CROWN AT $\frac{1}{2}$ INCH PER FOOT TO THE MANHOLE WALL.
 - I. LEAKAGE TESTING THE CONTRACTOR SHALL FURNISH THE NECESSARY EQUIPMENT TO TEST SEWERS SANITARY SEWER GRAVITY LINES, UPON COMPLETION, SHALL BE REQUIRED TO PASS TESTS J. HYDROSTATIC TEST:
 - A HYDROSTATIC TEST SHALL BE PERFORMED WITH A MINIMUM OF TWO (2) FEET RATE OF EXFILTRATION OR INFILTRATION SHALL NOT EXCEED TWO HUNDRED (200) PIPE DIAMETER PER LINEAR MILE PER DAY. K. LOW PRESSURE AIR TEST:
 - A LOW PRESSURE AIR TEST SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM I METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING PLASTIC PIPE.
 - L. ALL SANITARY FORCE MAIN LINES, UPON COMPLETION, SHALL BE REQUIRED TO CONDUCTED IN ACCORDANCE WITH AWWA STANDARD C605-94, AWWA STANDAR INSTALLATION OF POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND FITTINGS FOR WATE
 - M. ALL SANITARY SEWER MANHOLES SHALL ALSO BE AIR TESTED IN ACCORDANCE STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSUR N. FLUSHING SEWERS: FLUSH ALL SANITARY SEWERS EXCEPT BUILDING SEWERS WITH WATER TO OBTAIN FREE
 - LINE. REMOVE ALL SILT AND TRASH FROM APPURTENANCES JUST PRIOR TO ACCEPTAN 0. PLASTIC SEWER PIPE INSTALLATION: PLASTIC SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 PER SHALL BE TESTED AFTER THIRTY DAYS, USING A MANDREL THAT IS 95% OF THE IN
 - PIPE BEING TESTED. SAID MANDREL SHALL BE PULLED BY HAND THROUGH EACH PIP DEFLECTION IS LESS THAN ACCEPTABLE LIMITS. P. STORM WATER CONNECTIONS:
 - NO ROOF DRAINS, FOOTING DRAINS AND/OR SURFACE WATER DRAINS MAY BE CONNECT SEWER SYSTEMS, INCLUDING TEMPORARY CONNECTIONS DURING CONSTRUCTION. Q. WATERLINE CROSSING:
 - WHERE WATER LINES AND SANITARY SEWERS CROSS AND WATER LINES CANNOT SEWER WITH A MINIMUM OF 18 INCHES VERTICAL CLEARANCE, THE SEWER MUST BE WORKS GRADE DUCTILE IRON PIPE WITH MECHANICAL JOINTS WITHIN 10 FEET OF THE R. UTILITIES:
 - IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERITY ALL EXISTING UTI PERTAINING TO HIS WORK. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO OF THE VARIOUS UTILITIES BEFORE WORK IS STARTED. THE CONTRACTOR SHALL OWNER AND THE ENGINEER OF ANY CHANGES, ERRORS OR OMISSIONS FOUND ON TH FIELD BEFORE WORK IS STARTED OR RESUMED. S. SERVICE LATERALS:
 - INDIVIDUAL BUILDING LINES SHALL BE 6 INCHES IN DIAMETER AND OF MATERIAL EQUAL 2A OF THIS SECTION. SERVICE LINES SHALL BE CONNECTED TO THE MAIN SEWER A THESE PLANS.

- EEL TROWEL TO A HARD DENSE SURFACE AFTER BROOM FINISH AND SCRIBE TRANSVERSE JOINTS JOINTS WHERE SIDEWALKS INTERSECT, AND AT A
- OTHERWISE SPECIFIED, CURE ALL CONCRETE BY T I.N.D.O.T. STANDARD SPECIFICATION. HALL BE AS SPECIFIED IN THE MOST CURRENT E PERMITTED DURING UNFAVORABLE WEATHER OR N ON THE DRAWINGS IS THE MINIMUM THICKNESS . BE ACCOMPLISHED BY ROLLING WITH A SMOOTH
- TO 95% COMPACTION USING STANDARD TESTING ND AT ALL PLACES NOT ACCESSIBLE TO THE WITH MECHANICAL TAMPERS OR WITH APPROVED QUIRED AS SPECIFIED IN THE PLANS AND SHALL
- HED BY THE AMERICAN DISABILITIES ACT (ADA), OF ABRUPT CHANGES WITH SIDEWALKS, GUTTERS
- (48) INCHES EXCLUSIVE OF FLARED SIDES. ES AS SHOWN IN THE PLANS.

LEANOUTS AND RELATED WORK SHOWN IN THE 3E TIGHTLY PLUGGED OR DIFIED IN THE PLUMBING	CROSSROAD CROSSROAD ENGINEERS, PC Transportation & Development Consultants 5.4 Th ARAG. EECH CONSULTANTS
USED FOR PVC & PVC A. FORM TO ASTM C-478 MATIC MATERIAL HARD SPDTS, SHEMKAGE SHOT-BLASTMG OR BY WHICH SHALL BESULT IN E. EUTYY SHALL BE CRAY E. EUTYY RUBBER BASE TON SS-5-210A. JOINT LL BE THAT STEPS ARE -CORROSVE FIBERCLASS : OF ASTMO-AIOL WITH ASTM A-615. GRADE 60 30TTOM AND 16 INCHES STM D2241, STANDARD , GREATER THAN 4 INCH LLED UNDER RAILROADS NORAD FOR POLYVINYL APPENDIX A. JRY S BID ON THE WORK THAT THE WORK SHALL ERS. CONTRACTOR SHALL EXISTING SEWERS. 1 AND CONSTRUCTION OF IS, SEWERS AND OTHER R TO THE SATISFACTION D BE APPROVED BY ALL WRITEIN PERMISSION FOR MAY OBSTRUCTIONS. THE HET AND BRACE TRENCH FURCH AND BRACE TRENCH FURCH AND BRACE TRENCH FURCH AND BRACE TRENCH S OR NATURAL DRAINAGE	SPECIFICATIONS Breat Other Date Date Date Date Date
RADE IS UNSUITABLE FOR AL SUPPORT, IN ADDITION CT, AND THE CONTRACT OROUGHLY, TAKING CARE KING AREAS, DRIVEWAYS Y APPROVED METHODS. HE PRECAST BASE. THE & HYDRAULICS TO ALLOW ALL BE FORMED TO THE ENCH WALL SHALL SLOPE FOR INFILTRATION. ALL ONE OF THE FOLLOWING	CONCEPTER CORY J.
OF POSITIVE HEAD. THE GALLONS PER INCH OF F1417, STANDARD TEST LOW PRESSURE AIR, FOR PASS A LEAKAGE TEST RD FOR UNDERGROUND ER. WITH ASTM C1244–93, JEE ((ACUUM) TEST	
EE FLOW THROUGH EACH NCE OF WORK. LATEST REVISION. PIPES NSIDE DIAMETER OF THE IPE SECTION TO ENSURE ECTED TO THE SANITARY BE PLACED ABOVE THE CONSTRUCTED OF WATER	
TILITIES AND CONDITIONS O CONTACT THE OWNERS NOTIFY IN WRITING THE THESE PLANS OR IN THE AL TO THAT SPECIFIED IN AT LOCATIONS SHOWN IN	
	I SHEET 500

