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|   | WATER MAIN PLAN | AND PROFILE | WINDSOR AT HILLVIEW - CONSTRUCTION PLANS  |  | JOB No DRAWN KLF/LMC/DEP CHECKED TEN BEECH GROVE, IN 46107<br>(317) 780-1555<br>CROSSROADENGINEERS.COM |  | DATE MAT UG, ZUZI DESIGNED DUM ATTR. GUI SHEEI JUI |
|---|-----------------|-------------|---|--|--|--|--|
|   | CORY J. LAN     |             | A STATE OF A                              | S/ONAL EV  |  | they leve  | - yau  |
| LINE 'WATER-D'  |                 |             | DJM GJI                                   | DJM GJI  | DJM GJI  | DJM GJI  | BY APPR.   |
| Image: Construction of the state of the |                 |             | MISCELLANEOUS REVISIONS PER INAW COMMENTS | RELOCATED WATER MAIN FITTINGS AT THE INTERSECTIONS PER INAW COMMENTS | COUS WATER MAIN RE-ALIGNMENTS AND ADDED ALTERNATIVE TECHNICAL STANDARD TABLE PER INAW COMMENTS         | MISCELLANEOUS REVISIONS PER CITY OF FRANKLIN AND INAW PLAN REVIEW COMMENTS | REVISIONS  |
| <b>Deleve. Call before you dig.</b><br><b>DELEVENTING DAYS BEFORE YOU DIG</b><br><b>0-382-5544 or 811</b><br>Call Toll FREE<br>ATE LAW IS-69-1991. IT IS AGAINST THE LAW<br>HOUT NOTEYING THE UNDERGOUND LOCATION<br>WORKING DAYS BEFORE COMMENCING WORK.   |                 |             | 2.28.21                                   | 9.14.21  | 8.17.21 MISCELLANE   | 7.08.21  | DATE   |
| NOTE:       WATERLINE NOTE:       HORIZONTAL AND VERTICAL DEFLECTIONS OF THE         RTHWORK DISTURBING ACTIVITY       WATER MAIN ARE NOT PERMITTED. VERTICAL SEPARATIONS AND         MMENCE UNTIL A STORM WATER       CHANGES IN HORIZONTAL ALIGNMENT SHALL BE ACHIEVED WITH BENDS         GEMENT PERMIT IS OBTAINED.       AND FITTINGS. ALL INSTALLED VERTICAL AND HORIZONTAL FITTINGS         AND BENDS SHALL CLEARLY BE INDICATED ON AS-BUILT DRAWINGS.  | σ ∞             | - 9<br>HEET | 0 4<br>90                                 | ة<br>٣<br>1  | 2 0  | -  | NO.  |



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PLAN 3 H S









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|                | The 11x17 inch Plat has been submitted to the respective Soils and Water Conservation District.  | <u>TOPSOIL:</u>   |
|----------------|--|---|
| A3             | PROJECT NARRATIVE<br>The project involves the construction of 66 residential lots, which constitutes Section   | A. Inspect weekly until vegetation is establis  |
|                | Three (3) of the over 130 Lot Residential Subdivision. Section Three is located on the south side of Upper Shelbyville Road, east of Eastview Drive and north of Meadowbrook               | TEMPORARY AND PERMANENT SEEDING:<br>A. Inspect periodically, especially after s                                       |
|                | Lane. All roadways and sidewalks necessary for the development shall be constructed as part of the construction plans herein. A storm sewer system shall be utilized for                   | established.<br>B. Plan to add fertilizer the following   |
|                | stormwater collection, and will discharge to an existing wet detention pond located in the center of the site. The wet detention pond will treat for both stormwater quantity and          | recommendations.<br>C. Repair damaged, bare, or sparse areas  |
|                | quality requirements. Water, sanitary sewer, electric, gas and communication utilities shall<br>serve the development as well. Construction is anticipated to begin in the in the Fall of  | re—seeding, and mulching.<br>D. If plant cover is sparse or patchy, re  |
|                | 2010.<br>A4 VICINITY MAP<br>The Vicinity Map is leasted in the right half of the Erspien Control Dataile (this short).   | moisture condition, and mulching; repair<br>re-seeding and mulching after re-prepar                                   |
| 15             | Latitude N 39°29'25" Longitude W 86°01'50"   | E. If vegetation fails to grow, consider<br>deficiency problems.  |
| CA             | The Legal Description of the project site is located in the lower right quadrant of the  | F. If additional fertilization is needed to get<br>test recommendations.  |
| A6             | LOCATION OF ALL LOTS AND PROPOSED SITE IMPROVEMENTS  |   |
| ۸7             | (Sheet 1000-1001). Anticipated utilities, and structures are depicted as well.   | A. Inspect after storm events to check for  |
| ~/             | The Hydrologic Unit Code for the represented watershed of this project is:<br>05120204090050   | and , if applicable, install new netting.   |
| A8             | STATE AND/OR FEDERAL WATER QUALITY PERMITS   | D. Reference the latest INDOT Specification.  |
| A9             | STORMWATER DISCHARGE<br>Treated stormwater discharge shall leave the Section Three site via a 36"¢ BCP   | EROSION CONTROL BLANKET:  |
| A10            | WETLANDS, LAKES AND WATER COURSES.<br>There are no potential wetland areas located within the project site por shall any   | blanket.<br>B If any area shows erosion pull back th  |
| A11            | potential wetland areas be disturbed as a result of construction.<br>RECEIVING WATERS  | re-seed the area, and re-lay and staple   |
| A12            | The receiving water for this project is Hurricane Creek.<br>2 POTENTIAL DISCHARGES TO GROUND WATER   | SILT FENCE:   |
| A13            | There are no potential locations where stormwater may enter the groundwater.<br>3 100 YEAR FLOOD PLAINS, FLOODWAYS AND FLOODWAY FRINGES  | A. Inspect the silt fence periodically and aff<br>B. If fence fabric tears, starts to decompo                         |
|                | The property plots by scale as being in Zone "AE" & "X" of the Flood Insurance Rate<br>Map (FIRM) for Johnson County, Indiana, Community Panel No. 18081C0232D, dated                      | the affected portion immediately.<br>C. Remove deposited sediment when it rea   |
|                | August 2, 2007 & Panel No. 18081C0231E, dated January 29, 2021. The accuracy of all flood hazard data shown on this project is subject to map scale uncertainty and to any                 | point or is causing the fabric to bulge.<br>D. Take care to avoid undermining the fenc                                |
| A14            | other uncertainty in location of elevation on the recorded Flood Insurance Rate Map.<br>POST-CONSTRUCTION PEAK DISCHARGE   | <ul> <li>After the contributing drainage area has<br/>deposits, bring the disturbed area to gra</li> </ul>            |
|                | Qpost Max. (10 year) = 50.06 cfs (inflow to detention pond) (Section Three)<br>Qpost Max. (10 year) = 1.69 cfs (outflow from Detention Pond) (Section Three)                               | RIPRAP:   |
| A15            | 5 ADJACENT LANDUSE<br>The adjacent landuses are labeled on the Erosion Control Plan (Sheet 1000-1001).   | <ul> <li>A. Inspect periodically for displaced rock<br/>especially downstream or downslope.</li> </ul>                |
| A16            | 5 DISTURBED AREAS<br>The construction limits (boundary of disturbed area) are shown on the Erosion Control   | FABRIC DROP INLET PROTECTION:   |
| A17            | Plan (Sheet 1000-1001).<br>7 EXISTING VEGETATIVE COVER   | A. Inspect the fabric barrier after storm eve<br>B. Remove sediment from the pool area                                |
|                | The existing site is largely cultivated field with some grass areas and an existing detention pond.  | damaging or undercutting the fabric duri<br>C. When the contributing drainage area has                                |
| A18            | SOILS MAP AND DESCRIPTIONS<br>The soils map and all pertinent soil type information are located on the upper right   | aii construction material and sediment,<br>the inlet, then stabilize.   |
| A19            | quadrant of the Erosion Control Details (this sheet).<br>PROPOSED STORMWATER SYSTEMS   | SILT SACK INLET PROTECTION:   |
|                | The proposed stormwater system sizes and dimensions are labeled on the Erosion Control<br>Plan (Sheet 1000-1001).  | A. Inspect the silt sack inlet protection per<br>B. Remove deposited sediment when it rea                             |
| A20            | O OFF-SITE CONSTRUCTION ACTIVITIES<br>No offsite activities will take place within this project.   | point.<br>C. Remove the Silt Sack Inlet Protection ar   |
| A21            | 1 SOIL STOCKPILES, BORROW/DISPOSAL AREAS<br>Topsoil shall be stockpiled in a convenient location (as determined by the owner and/or  | area is stabilized.   |
|                | contractor) within the construction site as shown on the Erosion Control Plan (Sheet 1000—1001).   | A. Concrete washout area shall be installed   |
| A22            | 2 EXISTING SITE TOPOGRAPHY<br>Existing one-foot contours are shown on the Erosion Control Plan (Sheet 1000-1001).  | B. Signs shall be placed at the constructio<br>as necessary to clearly indicate the loco                              |
| A23            | 3 PROPOSED SITE TOPOGRAPHY<br>Proposed one-foot contours are shown on the Erosion Control Plan (Sheet 1000-1001).  | of concrete trucks and pump rigs.<br>C. The concrete washout area shall be rep  |
| ST             | ORMWATER POLLUTION PREVENTION - DURING CONSTRUCTION  | D. At the end of construction, all concrete   |
| B1             | POTENTIAL POLLUTANT SOURCES ASSOCIATED WITH CONSTRUCTION ACTIVITIES  | E. When the concrete washout area is rer  |
| 51             | 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         |   |
| B2             | remedied by Erosion Control measures (see following sections).<br>SEQUENCE OF STORMWATER QUALITY MEASURE IMPLEMENTATION  | <b>CONSTRUCTION SEQUENCE &amp; SCHEDULE OF</b>  |
|                | The Construction Sequence & Schedule of Erosion Control Measure Implementation is located in the upper half on the Erosion Control Details (this sheet).                                   | 1. Schedule a pre-construction meeting with   |
| B3             | CONSTRUCTION ENTRANCE<br>The construction entrance shall be constructed near the southeast section of the project  | 2. Silt fence and all other erosion control   |
|                | off of Mill Pond Lane. Specifications and details are located on the Erosion Control Details (this sheet).   | are started.  |
| B4             | SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS<br>Sediment Control measures for Sheet flow areas are shown on the Erosion Control Plan   | QUALITY MANUAL". All other erosion control  |
|                | (Sheet 1000—1001). Specifications and details are located on the Erosion Control Details<br>(Sheet 1002).  | <ol> <li>Strip topsoil and stockpile as shown.</li> <li>Bough grade site Disturbed grass showld be</li> </ol>         |
| B2             | SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS<br>Sediment Control measures for concentrated flow areas are shown on the Erosion Control  | Areas that will not be disturbed again sh<br>areas should be exposed for more than sev                                |
|                | Plan (Sheet 1000-1001). Specifications and details are located on the Erosion Control<br>Details (Sheet 1002).   | <ol><li>Place drainage structures. Erosion control<br/>structures as soon as they are in place and</li></ol>          |
| B6             | STORM SEWER INLET PROTECTION MEASURES<br>Storm sewer inlet protection measures are shown on the Erosion Control Plan (Sheet  | <ol> <li>Final grade site. All erosion control bla<br/>recommendations as soon as final grading i</li> </ol>          |
|                | 1000—1001). Specifications and details are located on the Erosion Control Details (Sheet 1002).  | 9. Final paving operations. Temporary erosion vegetation is secure.   |
| B7             | RUNOFF CONTROL MEASURES<br>Runoff control measures are shown on the Erosion Control Plan (Sheet 1000—1002).  | CENERAL EROSION CONTROL REQUIR  |
| B8             | Specifications and details are located on the Erosion Control Details (Sheet 1002).<br>STORMWATER OUTLET PROTECTION MEASURES   | IDEM GENERAL PERMIT RULES FOR   |
|                | Stormwater outlet protection measures are shown on the Erosion Control Plan (Sheet 1000—1001). Specifications and details are located on the Erosion Control Details (Sheet                | CONSTRUCTION SITES  |
| В9             | 1002).<br>GRADE STABILIZATION STRUCTURES   | 1. All Erosion Control practices shall be in  |
| B10            | No grade stabilization structures are required for this project.<br>D LOCATION, DIMENSIONS, SPECIFICATIONS AND DETAILS OF EACH STORMWATER QUALITY  | INDIANA STORM WATER QUALITY MANUAL.   |
|                | MEASURE<br>The stormwater quality measure for this Section is the existing detention pond, it is   | <ol> <li>The Erosion Control measures included in the<br/>disturbance activities or as soon as pr</li> </ol>          |
| B11            | shown on the Erosion Control Plan (Sheet 1000—1001).<br>TEMPORARY SURFACE STABILIZATION<br>-   | basins, etc. As shown on this plan. If show<br>Frasion Control at the outfall of the stars                            |
|                | Temporary surface stabilization methods are shown on the Erosion Control Plan (Sheet 1000—1001) and detailed on the Erosion Control Details (Sheet 1002 and this sheet).                   | of the construction of the outfall.   |
| B12            | 2 PERMANENT SURFACE STABILIZATION<br>Permanent surface stabilization methods are shown on the Erosion Control Plan (Sheet  | <ol> <li>All on-site storm drain inlets shall be pr<br/>inlet filters, filter fabric, or equivalent barric</li> </ol> |
| B13            | 1000-1001) and detailed on the Erosion Control Details (Sheet 1002 and this sheet).<br>MATERIAL HANDLING AND SPILL PREVENTION  | <ol> <li>Except as prevented by inclement weather</li> </ol>  |
|                | 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       | control of the contractor/developer appropr<br>within (7) seven days of the last land dist                            |
|                | 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             | stabilized by seeding, sodding, mulching, co<br>measures.   |
|                | 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.             | 5. This Erosion Control plan shall be imple   |
|                | Indiana Department of Environmental Management<br>Office of Emergency Response (317) 233-7745, Toll Free (800) 233-7745  | construction site. All measures involving<br>under the guidance of a qualified person                                 |
|                | Franklin Fire Department (317) 736-3651<br>*Additional Material Handling and Spill Prevention (this sheet)*  | the plans and specifications included herein.   |
| B14            | MONITORING AND MAINTENANCE GUIDELINES<br>Monitoring and Maintenance Guidelines are located in the middle on the Erosion Control  | <ol> <li>During the period of construction activity,<br/>measures shall be maintained by the contri-</li> </ol>       |
| B15            | Details (this sheet).<br>5 EROSION & SEDIMENT CONTROL MEASURES FOR INDIVIDUAL BUILDING LOTS  | contractor shall coordinate the transfer of owner.  |
|                | Shall be complicated as shown on the Lot Template Detail on Sheets 1000-1001.  | 7. Public or private roadways shall be kept cl  |
| <u>ST</u>      | UKMWATER PULLUTION PREVENTION - POST CONSTRUCTION  | sediment shall be returned to the point of  |
| C1             | PROPOSED POLLUTANTS AND SOURCES ASSOCIATED WITH PROPOSED LAND USE<br>Potential pollutants sources and materials may include the following:   | 8. The contractor shall control wastes, garbay<br>on the site in such a way that they sho                             |
|                | Automobiles — Pertoleum Products (e.g. gasoline, oil/grease, ATF, etc), Hydrocarbons,<br>Antifreeze, Trace Metals, etc.  | action of winds, storm water runoff, or oth<br>all wastes and unused building materials                               |
|                | Stormwater Runoff — Sediment, nutrients and chemicals (e.g. fertilizers, pesticides, etc)<br>Trash Service — Trash and debris, chemicals   | material is required.   |
| č C2           | Pets — Pet waste/bacteria<br>STORMWATER QUALITY MEASURE IMPLEMENTATION   | 9. Additional Erosion Control measures may be   |
| 거<br>/ C3<br>된 | stormwater quality measures are implemented by construction of the site improvements.<br>PROPOSED POST CONSTRUCTION STORMWATER QUALITY MEASURES  |   |
| 3:00 P         | Post construction stormwater quality measures shall consist of an existing wet detention<br>pond with outlet control structure for detention and water quality purposes.                   |   |
| 02203          | MEASURE<br>The stormwater quality magnume for this Section of the development in the weith   |   |
| 0/31/2         | detention pond located in the center of the site.<br>MAINTENANCE GUIDELINES OF POST CONSTRUCTION STORMWATER OUALITY MEASURES   |   |
| ÷.             | The existing outlet control structure shall be inspected quarterly and after major rain<br>events for any blockages. All obstructions and debris shall be removed upon inspection          |   |
| ~              | All vegetated banks shall be maintained by mowing, removing trash and debris, and re-planting any eroded/non-vegetated areas as necessary. The pond depth shall be                         |   |
| :/USEF         | measured annually at the center of the pond to verify that the minimum normal pool depth is maintained.  |   |
| μu             |  |   |

EROSION CONTROL PLAN INDEX

11 BY 17 INCH PLAT

PLAN ELEMENTS

### MONITORING AND MAINTENANCE GUIDELINES

# GRAVEL CONSTRUCTION DRIVE AND PARKING AREA:

eekly until vegetation is established and log condition per IDEM.

A. Inspect weekly and after each storm event and log condition per IDEM.

- ) PERMANENT SEEDING:
- periodically, especially after storm events, until the stand is successfully add fertilizer the following growing season according to soil test
- maged, bare, or sparse areas by filling any gullies, re-fertilizing, over- or and mulching.
- cover is sparse or patchy, review the plant materials chosen, soil fertility, condition, and mulching; repair the affected area either by over-seeding or by
- and mulching after re-preparing the seed bed. tion fails to grow, consider soil testing to determine acidity or nutrient
- problems. nal fertilization is needed to get a satisfactory stand, do so according to soil
- nmendations the latest INDOT Specification.
- fter storm events to check for movement of mulch or for erosion. , breakage, or erosion is present, repair the surface, then re-seed, re-mulch,
- ipplicable, install new nettina. inspections until vegetation is firmly established.

- getative establishment, inspect after storm events for any erosion below the rea shows erosion, pull back that portion of the blanket covering it, add soil, he area, and re-lay and staple the blanket. etative establishment, check the treated area periodically.
- ne silt fence periodically and after each storm event.
- fabric tears, starts to decompose, or in any way becomes ineffective, replace ted portion immediately
- leposited sediment when it reaches half the height of the fence at its lowest causing the fabric to bulge.
- to avoid undermining the fence during clean out. contributing drainage area has been stabilized, remove the fence and sediment

bring the disturbed area to grade and stabilize.

- periodically for displaced rock material, slumping, and erosion at edges, downstream or downslope.
- NLET PROTECTION:
- ne fabric barrier after storm events, and make needed repairs immediately. sediment from the pool area to provide storage for the next storm. Avoid or undercutting the fabric during sediment removal. contributing drainage area has been stabilized, remove and properly dispose of uction material and sediment, grade the area to the elevation of the top of then stabilize.

- he silt sack inlet protection periodically and after each  $\frac{1}{2}$ " storm event. leposited sediment when it reaches half the height of the filter at the lowest
- he Silt Sack Inlet Protection and sediment deposits after contributing drainage abilized.

- washout area shall be installed prior to any concrete placement on site.
- Il be placed at the construction entrance, at the washout area, and elsewhere sary to clearly indicate the location of the concrete washout area to operators
- te trucks and pump rigs.
- rete washout area shall be repaired and enlarged or cleaned out as necessary ain capacity for wasted concrete.
- d of construction, all concrete shall be removed from the site and disposed of
- proved waste site. concrete washout area is removed, the disturbed area shall be seeded and or otherwise stabilized in a manner approved by the inspector.

## EQUENCE & SCHEDULE OF EROSION CONTROL IMPLEMENTATION

- pre-construction meeting with Johnson County SWCD and City of Franklin Department 48 hours prior to start of earthwork. and all other erosion control measures shall be placed around existing and in ditches as shown in these plans before any land disturbing activities
- emporary gravel entrance in accordance with the "INDIANA STORM WATER NUAL". All other erosion control measures shall be installed and constructed the beginning of the project.
- and stockpile as shown. site. Disturbed areas should be seeded immediately following rough grading. will not be disturbed again should be permanently seeded. No unvegetated
- be exposed for more than seven days. ge structures. Erosion control measures shall be placed around proposed s soon as they are in place and until vegetation is secure.
- site. All erosion control blankets shall be installed per manufacturers tions as soon as final grading is complete. operations. Temporary erosion control measures shall remain in place until secure.

## ION CONTROL REQUIREMENTS FOR COMPLIANCE WITH PERMIT RULES FOR STORM WATER RUNOFF FROM SITES

- Control practices shall be in accordance with the latest edition of the RM WATER QUALITY MANUAL.
- Control measures included in this plan shall be installed prior to initial land activities or as soon as practical. Sediment shall be prevented from from the project site by installing and maintaining silt fence, sediment As shown on this plan. If shown on this plan, energy-dissipation devices or rol at the outfall of the storm sewer system shall be installed at the time ruction of the outfall.
- storm drain inlets shall be protected against sedimentation with silt sack filter fabric, or equivalent barriers as shown on this plan.
- revented by inclement weather conditions or other circumstances beyond the he contractor/developer appropriate Erosion Control practices will be initiated even days of the last land disturbing activity at the site. The site shall be seeding, sodding, mulching, covering, or by other equivalent Erosion Control
- Control plan shall be implemented on all disturbed areas within the site. All measures involving Erosion Control practices shall be installed uidance of a qualified person experienced in Erosion Control and following d specifications included herein.
- eriod of construction activity, all sediment basins and other Erosion Control all be maintained by the contractor. At the completion of construction, the hall coordinate the transfer of required maintenance responsibilities with the
- vate roadways shall be kept cleared of accumulated sediment. Bulk clearing ated sediment shall not include flushing the area with water. Cleared all be returned to the point of likely origin or other suitable location.
- or shall control wastes, garbage, debris, wastewater, and other substances in such a way that they shall not be transported from the site by the nds, storm water runoff, or other forces. Proper disposal or management of and unused building materials appropriate to the nature of the waste or eauired.
- osion Control measures may be required by state or county agencies.

# ADDITIONAL MATERIAL HANDLING AND SPILL PREVENTION PLAN

A. Purpose 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
- wastes. 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.

# Prevention and Readiness

- 1. 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 qualified contractors, Vac-trucks, tank pumpers and other equipment or businesses qualified 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 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 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 water or bury. • 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 around 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.
- 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. Contact 911 if this spill could be a safety issue.
- Contact supervisors and designated inspectors immediately Contaminated solids to be removed to an approved landfill.
- 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 groundwater pollution.
- Control or contain the spill without risking bodily harm. Temporarily plug storm drains if possible to prevent migration of the spill into the stormwater system. • Immediately contact the local Fire Department at 911 to report any hazard material
- 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 submitted to the owner as soon as possible.
- 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
- 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 The time of the spill
- o Identification of the spilled substance o Approximate quantity of the substance that has been spilled or may be 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 What measures were taken in the spill response 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.

# D. The following procedures and practices will help prevent unnecessary spills

# I. Vehicle and Equipment Fueling

- 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.

## Limitations:

- Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for 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 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
- 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
- absorbent materials promptly and dispose of properly. • Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas.
- 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 greas.
- Protect fueling areas with berms and dikes to prevent run-on, runoff, and to contain • Nozzles used in vehicle and equipment fueling should be equipped with an automatic
- shutoff to control drips. Fueling operations should not be left unattended. • Federal, state, and local requirements should be observed for any stationary above ground storage tanks.

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

# <u>II. Solid Waste Management</u>

Description of Purpose: • 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:
- 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.
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes, • 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.

|   | PERMANENT    | SEED MIXTU         | RES      |            |     |
|---|--------------|--------------------|----------|------------|-----|
| SPECIES                                   | SEEDING RATE | E SUITADLE SITE SU |          | SUITABILIT | γ   |
| SI EGES                                   | LBS/ACRE     | SUTABLE PH         | DROUGHTY | DRAINED    | WET |
| LEVEL AND SLOPING, OPEN AREAS             |              |                    |          |            |     |
| TALL FESCUE                               | 35           | 5.5 - 8.3          | 2        | 1          | 2   |
| TALL FESCUE<br>RED CLOVER **              | 25<br>5      | 5.5 - 8.3          |          | 1          |     |
| KENTUCKY BLUEGRASS<br>CREEPING RED FESCUE | 15<br>15     | 5.5 - 7.5          | 2        | 1          |     |
| STEEP BANKS AND CUTS                      |              |                    |          |            |     |
| TALL FESCUE<br>KENTUCKY BLUEGRASS         | 15<br>25     | 5.8 - 7.5          | 2        | 1          | 2   |
| TALL FESCUE<br>EMERALD CROWNVETCH **      | 35<br>10     | 5.5 - 8.3          | 2        | 1          |     |
| LAWNS AND HIGH MAINTENANCE AREAS          |              |                    |          |            |     |
| KENTUCKY BLUEGRASS<br>CREEPING RED FESCUE | 40<br>40     | 5.8 - 7.5          | 2        | 1          |     |
| PERENNIAL RYEGRASS<br>(TURF TYPE)         | 170          | 5.0 - 7.5          |          | 1          |     |
| TALL FESCUE                               | 170          | 5.5 - 8.3          | 2        | 1          | 2   |

1-PREFERRED 2-WILL TOLERATE \*\* - INOCULATE WITH SPECIFIC INOCULATES

- The following steps will help keep a clean site and reduce stormwater pollution: Select designated waste collection greas 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
- 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.
- 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

• Make sure that construction waste is collected, removed, and disposed of only at

• Locate solid waste dumpster a minimum of 50' away from storm water inlets or other

• Locate dumpster on stone or earth to minimize the potential for spills or leaks to drain

• Inspect and verify that activity-based BMPs are in place prior to the commencement of

• Inspect BMPs subject to non-stormwater discharge daily while non-stormwater

• 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

• Incorporate requirements for concrete waste management into material supplier and

• 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

• Wash out wastes into the temporary pit where the concrete can set, be broken up, and

• Avoid creating runoff by drinking water to a bermed or level area when washing

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

Implementation- Where and when feasible, maintenance shall be preformed offsite in

• Maintain clean up materials close at hand. Utilize drip pans and absorbent pads to

• Inspect equipment daily for leaks or worn hoses. Repair or replace to prevent onsite

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

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

• Site the maintenance area at least 50 feet from storm water inlets or water bodies

• 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.

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

• Store dry and wet materials under cover, away from drainage areas.

Perform washout of concrete trucks offsite or in designed areas only.

concrete to remove fine particles and expose the aggregate.

• Properly dispose of all fluids removed or spilled from machinery.

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

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

• 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

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

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

• The sediment and any other pollutant from all pumping or dewatering operations that

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

• Sediment removal pumping bags may be used at the outlet of a pump. The baas must

• Pumping operations that are moving clean water through a site are not required to

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

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

CREEPING RED FESCUE FESTUCA RUBRA

KENTUCKY BLUEGRASS POA PROTINSIS

PERENNIAL RYEGRASS LOLIUM PERENNE

CROWNVETCH CORANILLA VARIA

RED CLOVER TRIFOLIUM PRATENSE

SLOPE AS MUCH AS POSSIBLE.

WHEAT OR RYE

SPRING OATS

ANNUAL RYEGRASS

NON-IRRIGATED \* DORMANT SEEDING \*\*

1 GOOD 2 MEDIUM - NOT TOLERANT

TEMPORARY SEEDING DATI MAR APR MAY JUN JUL AUG SEP OCT NOV

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

\*\* -INCREASE SEEDING APPLICATION BY 50%.

 TEMPORARY SEEDINGS

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

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

 SPRING OATS
 2.3 LBS.
 3 BU.
 COVER SEED 1" TO 1 1/2" DEEP

 SANNUAL RYEGRASS
 1.0 LBS.
 40 LBS.
 COVER SEED 1 / Φ EEP

\* NOT NECESSARY WHERE MULCH IS APPLIED.

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

FALL FESCUE FESTUCA L ARUNDINACEA

discharge into storm sewers, wetlands, drainage ways or water bodies must be removed

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

V. Fluids, paints, solvents and other chemicals storage and use

associated activities. While activities associated with the BMP are under way, inspect

authorized disposal areas. Solid waste storage areas should be located in areas prone

• Arrange for regular waste collection before containers overflow.

• Clean up immediately if a container does spill.

weekly to verify continued BMP implementation.

immediately into a drainage facility.

Inspect construction waste are regularly.

Arrange for regular waste collection

subcontractors' agreements.

• Avoid mixing excess amounts of fresh concrete.

large enough for liquid and solid waste.

construction debris.

trash haulina contractor.

to flooding or ponding.

drainage facilities.

Inspection and Maintenance

discharaes occur.

<u>III. Concrete Washout</u>

are made.

For onsite washout:

then disposed properly.

V. Vehicle Maintenance Areas

Implementation-

United States.

Implementation-

covered facility with an impervious floor.

Use a dedicated site for machinery maintenance.

prevent oils from reaching the soil surface.

• Store materials in there original containers

• Maintain safety data sheets on all products

inlet or other drainage facility.

VI. Disposal of sediment laden water

from the water before it's discharged.

job of removing the fine materials.

prevent additional sedimentation.

protected to prevent soil erosion.

• Keep materials away from flammable sources



# Johnson County, Indiana (IN081)

Wetness is the main limitation.

FOX COMPLEX, eroded (FxC2)

MIAMI SILT LOAM (MnB2)

CROSBY SILT LOAM (CrA)

BROOKSTON SILTY CLAY LOAM (BR) 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.

This nearly level soil is on broad plains, on ridge tops in rolling areas, or in low drainageways. Slopes are 0 to 2 percent. Runoff is slow. Wetness is the main limitation. CROSBY-MIAMI SILT LOAMS, eroded (CsB2) This gently sloping mapping unit is on broad, slightly undulating plains; on knolls of broad, nearly level plains; and at the heads of drainageways. Slopes are 2 to 4 percent. Runoff is

medium. Moderate erosion is the main limitation. his moderately sloping and strongly sloping mapping unit is on side slopes of drainageways,

on steep breaks, and on side slopes of hummocky kames and eskers. Slopes are 6 to 15 percent. Runoff is medium. Moderate erosion is the main limitation.

his gently sloping soil is along drainageways that cross areas of somewhat poorly drained Crosby soils. Slopes are 2 to 6 percent. Runoff is medium. Moderate erosion is the main



VICINITY MAP NOT TO SCALE

SALT TOLERANCE 1 MED. 1 20-25 12-18 7-21 MED. 1 25-35 12-18 10-20 LOW 1 24-35 24-36 5-14 2 MED- 2 15-20 12-18 5-10 MT · | - |LOW| 1 | 5-10| 24 | 14-21| T | - MED. 1 7-10 18 5-10 S S SALT TOLERANCE (TO BOTH SOIL SALTS AND SPRAY) T – TOLERANCE MT – MEDIUM TOLERANCE S – SLIGHT TOLERANCE SEEDBED PREPARATION APPLY LIME TO RAISE THE PH TO THE LEVEL NEEDED FOR SPECIES BEING SEEDED. APPLY 23 LBS. OF 12-12-12 ANALYSIS FERTILIZER (OR EQUIVALENT) PER 1,000 SQ. FT. (APPROXIMATELY 1,000 LBS. PER ACRE) OR FERTILIZE ACCORDING TO TEST. APPLICATION OF 150 LBS. OF AMMONIUM NITRATE ON AREAS LOW IN

ORGANIC MATTER AND FERTILITY WILL GREATLY ENHANCE VEGETATIVE GROWTH. WORK THE FERTILIZER AND LIME INTO THE SOIL A DEPTH OF 2 TO 3 INCHES WITH A HARROW, DISK, OR RAKE OPERATED ACROSS THE FERTILIZER AND LIME SHALL MEET REQUIREMENTS OF INDOT STANDARD SPECIFICATIONS 1995.  $\underline{\text{SEEDING}}$  seed mixture based on projected use of the area while considering best seeding dates.

MIAMI SILT LOAM, eroded (MnC2) This moderately sloping soils is on irregularly shaped knolls surrounded by gently sloping and hearly level soils, in long narrow banks around ridgetops; along drainageways leading to terraces or bottom land; and on undulating moraines. Slopes are 6 to 12 percent. Runoff is medium. Moderate erosion is the main limitation.

MIAMI SILT LOAM, severely eroded (MtC2) This moderately sloping soils is on irregularly shaped knolls surrounded by gently sloping and nearly level soils; in long narrow bands around level soils on ridgetops; along drainageways t terraces and bottom lands; and on side slopes of undulating moraines. Slopes are 6 to 12 percent. Severely erosion is the main limitation. RENSSELAER CLAY LOAM (Re)

This nearly level soil is in slightly depression areas of broad outwash plains and in old glacial drainageways and lake basins. Slopes are 0 to 2 percent. Runoff is very slow or ponded. Wetness is the main limitation.

SHOALS SILT LOAM (Sh) This nearly level soil is on narrow flood plains along meandering streams and in low-lying, weakly defined drainageways of large river bottom lands. Slopes are 0 to 2 percent. Runoff is slow. Flooding and Wetness is the main limitation.

WHITAKER SILT LOAM (Wh) This nearly level soil is surrounded by very poorly drained Rensseler or Westland soils or is surrounded by or at toe slopes of well drained Martinsville soils on outwash plains and terraces and in old glacial drainageways. Slopes are 0 to 2 percent. Runoff is very slow. Wetness is the main limitation.

> SOIL MAP AND DESCRIPTION NOT TO SCALE



CALL TOLL FREE PFR INDIANA STATE LAW IS-69-1991. IT IS AGAINST THE LAW O EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

A PARI OF THE SOUTHEAST QUARTER OF SECTION 12, AND A PART OF THE NORTHEAST QUARTER OF SECTION 13, ALL IN TOWNSHIP 12 NORTH, RANGE 4 EAST OF THE SECOND PRINCIPAL MERIDIAN, IN JOHNSON COUNTY, INDIANA, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT A STONE FOUND AT THE NORTHEAST CORNER OF THE NORTHEAST QUARTER OF THE SAID SECTION 13; THENCE SOUTH 00 DEGREES 07 MINUTES 53 SECONDS EAST ON AND ALONG THE EAST LINE THEREOF 432.04 FEET; THENCE SOUTH 89 DEGREES 23 MINUTES 00 SECONDS WEST 107.81 FEET TO AN IRON ROD FOUND AND TO A SOUTHEAST CORNER OF THE PLAT OF HOMESTEADS AT HILLVIEW-SECTION 1 MAJOR SUBDIVISION SECONDARY PLAT, WHICH IS RECORDED IN PLAT CABINET E SLIDE 170 IN THE OFFICE OF THE RECORDER OF JOHNSON COUNTY; THENCE ALONG SAID PLAT THE FOLLOWING TWO COURSES: 1) SOUTH 89 DEGREES 23 MINUTES 00 SECONDS WEST 295.42 SOUTH 21 DECREES 46 MINUTES 25 SECONDS WEST 105 52 CEET TO THE NORTHEAST CORNER OF THE PLAT FEET; 2) SOUTH 21 DEGREES 46 MINUTES 25 SECONDS WEST 195.52 FEET TO THE NORTHEAST CORNER OF THE PLA OF HOMESTEADS AT HILLVIEW-SECTION 2 MAJOR SUBDIVISION SECONDARY PLAT RECORDED IN PLAT CABINET E SLID 239 IN SAID RECORDER'S OFFICE; THENCE ALONG BOTH PLATS THE FOLLOWING SEVEN COURSES: 1) SOUTH 2 DEGREES 46 MINUTES 25 SECONDS WEST 295.85 FEET; 2) NORTH 68 DEGREES 13 MINUTES 35 SECONDS WEST 130.00 FEET; 3) SOUTH 21 DEGREES 46 MINUTES 25 SECONDS WEST 82.38 FEET; 4) NORTH 68 DEGREES 13 MINUTES 35 ECÓNDŚ WEST 50.00 FEET; 5) NORTH 21 DEGREES 46 MINUTES 25 SECONDS ÉAST 37.00 FEET TO A NON-TANGENT ZURVE; 6) NORTHWESTERLY 20.42 FEET ALONG ARC TO THE LEFT HAVING A RADUS OF 130.00 FEET AND SUBTENDED BY A LONG CHORD HAVING A BEARING OF NORTH 23 DEGREES 13 MINUTES 35 SECONDS WEST 117.00 FEET; THENCE CONTINUING ALONG SAID SECTION 2 PLAT THE FOLLOWING NINE COURSES: 1) SOUTH 21 DEGREES 46 MINUTES SECONDS WEST 609.82 FEET; 2) SOUTH 68 DEGREES 26 MINUTES 35 SECONDS EAST 19.81 FEET; 3) SOUTH DEGREES 33 MINUTES 25 SECONDS WEST 50.00 FEET TO THE POINT OF BEGINNING; 4) THENCE CONTINUING SOUTH : DEGREES 33 MINUTES 25 SECONDS WEST 130.00 FEET; 5) NORTH 68 DEGREES 26 MINUTES 35 SECONDS WEST 400.0 FEET 6) NORTH 60 DEGREES 12 MINUTES 54 SECONDS WEST 18.34 FEET TO A TANGENT CURVE; 7) NORTHWESTERL' 83.23 FEET ALONG AN ARC TO THE RIGHT HAVING A RADIUS OF 255.00 FEET AND SUBTENDED BY A LONG CHORI HAVING A BEARING OF NORTH 50 DEGREES 51 MINUTES 52 SECONDS WEST AND A LENGTH OF 82.86 FEET; 8) NORTH 41 DEGREES 30 MINUTES 50 SECONDS WEST 80.30 FEET; 9) SOUTH 85 DEGREES 53 MINUTES 31 SECONDS WES 15.00 FEET TO NON-TANGENT CURVE ON THE EAST LINE OF EASTVIEW DRIVE PER INSTRUMENT NUMBER 2015-01908 RECORDED IN SAID RECORDER'S OFFICE; THENCE ALONG SAID INSTRUMENT NUMBER THE FOLLOWING THREE COURSES 1) NORTHWESTERLY 462.02 FEET ALONG AN ARC TO THE LEFT HAVING A RADIUS OF 865.00 FEET AND SUBTENDED BY A LONG CHORD HAVING A BEARING OF NORTH 19 DEGREES 24 MINUTES 35 SECONDS WEST AND A LENGTH OF 456.55 FEET; 2) NORTH 21 DEGREES 46 MINUTES 25 SECONDS EAST 560.02 FEET; 3) NORTH 46 DEGREES MINUTES 43 SECONDS WEST 40.00 FEET TO THE CENTER LINE OF UPPER SHELBYVILLE ROAD; THENCE ALONG SA ENTER LINE THE FOLLOWING THREE COURSES: 1) NORTH 43 DEGREES 38 MINUTES 17 SECONDS EAST 139.03 FE A TANGENT CURVE; 2) NORTHEASTERLY 370.48 FEET ALONG AN ARC TO THE RIGHT HAVING A RADIUS OF 2136.3 ET AND SUBTENDED BY A LONG CHORD HAVING A BEARING OF NORTH 48 DEGREES 36 MINUTES 22 SECONDS EAS AND A LENGTH OF 370.02 FEET; 3) NORTH 53 DEGREES 34 MINUTES 27 SECONDS EAST 314.94 FEET TO TH NORTHWEST CORNER OF SAID SECTION 1 PLAT; THENCE ALONG SAID SECTION 1 PLAT THE FOLLOWING FIVE COURSES NORTHWEST CORNER OF SAID SECTION 1 PLAT; THENCE ALONG SAID SECTION 1 PLAT THE FOLLOWING FIVE COURSES 1) SOUTH 36 DEGREES 25 MINUTES 33 SECONDS EAST 195.00 FEET; THENCE SOUTH 53 DEGREES 34 MINUTES 27 SECONDS WEST 308.33 FEET; THENCE SOUTH 36 DEGREES 25 MINUTES 33 SECONDS EAST 160.00 FEET; THENCE SOUTH 12 DEGREES 9 MINUTES 52 SECONDS WEST 30.24 FEET; THENCE SOUTH 53 DEGREES 34 MINUTES 27 SECONDS WEST 180.52 FEET TO AN ARC; THENCE WESTERLY ALONG A TANGENT ARC TO THE LEFT HAVING A RADIUS 345.00 FEET AND SUBTENDED BY A LONG CHORD HAVING A BEARING OF SOUTH 37 DEGREES 40 MINUTES 26 SECONDS EAST AND A LENGTH OF 189.03 FEET; THENCE SOUTH 21 DEGREES 46 MINUTES 25 SECONDS WEST 348.94 FEET TO A NON-TANGENT ARC; THENCE SOUTHERLY ALONG AN ARC TO THE LEFT HAVING A RADIUS 149.00 FEET AND SUBTENDED BY A LONG CHORD HAVING A BEARING OF SOUTH 17 DEGREES 45 MINUTES 49 SECONDS EAST AND A LENGTH OF 278.99 FEET; THENCE SOUTH 21 DEGREES 46 MINUTES 25 SECONDS WEST 143.82 FEET; THENCE SOUTH 68 DEGREES 26 MINUTES 35 SECONDS EAST 30.00 FEET; THENCE SOUTH 21 DEGREES 33 MINUTES 25 SECONDS WEST 50.00 FEET; THENCE SOUTH 68 DEGREES 26 MINUTES 35 SECONDS WEST 143.82 FEET; THENCE SOUTH 50.00 FEET; THENCE SOUTH 68 DEGREES 26 MINUTES 35 SECONDS WEST 329.81 FEET TO THE POINT OF BEGINNING. CONTAINING 13.579 ACRES, MORE OR LESS

LEGAL DESCRIPTION





DIRECTORY PATH : R:\Active\John Grimmer\Hillview CC Property\Old Town PUD Modifications\Design\CAD\PLANS\CONSTRUCTION PLANS -ILENAME : 1100 MISCELLANEOUS DETAILS.dwg





| I. SCOPE  |  |         |
|---|--|---------|
| / \.  | JF WORK<br>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<br>CLEARING AND GRUBBING, REMOVAL OF TREES AND STUMPS, STRIPPING AND STORAGE OF TOPSOIL,<br>FILL COMPACTION AND ROUGH GRADING OF ENTIRE SITE. ALL TREES SHALL BE REMOVED UNLESS  | 6. ROL  |
|   | OTHERWISE NOTED IN PLANS OR DIRECTED BY OWNER.<br>2. EXCAVATED MATERIAL THAT IS SUITABLE MAY BE USED FOR FILLS. ALL UNSUITABLE MATERIAL AND<br>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.<br>3. PROVIDE AND PLACE ANY ADDITIONAL FILL MATERIAL FROM OFF THE SITE AS MAY BE NECESSARY<br>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.<br>4. THE CONTRACTOR SHALL ACCEPT THE SITE AS HE FINDS IT AND SHALL REMOVE ALL TRASH,<br>RUBBISH AND DEBRIS FROM THE SITE PRIOR TO STARTING EXCAVATION   |         |
| 2. BENCHM<br>A.   | ARK<br>MAINTAIN CAREFULLY ALL BENCH MARKS, MONUMENTS AND OTHER REFERENCE POINTS; IF DISTURBED OR<br>DESTROYED, CONTRACTOR SHALL CONTACT ENCINEER   |         |
| 3. REMOVA<br>A.   | L OF TREES<br>THE INTEGRITY OF THE TOPOGRAPHIC FEATURES (INCLUDING TREES) SHALL BE PERSEVERED AS MUCH AS   |         |
| В.  | POSSIBLE THE CONTRACTOR SHALL COORDINATE WITH OWNER AND/OR ENGINEER PRIOR TO CLEARING THE SITE FOR CONSTRUCTION.<br>ALL BRUSH, STUMPS, WOOD AND OTHER REFUSE FROM THE TREES REMOVED SHALL BE HAULED TO   |         |
| 1 HANDUR  | DISPOSAL AREAS OFF OF THE SITE. DISPOSAL BY BURNING SHALL NOT BE PERMITTED UNLESS PROPER<br>PERMITS ARE OBTAINED (WHERE APPLICABLE).   | 7. TRA  |
| 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 PEASONABLE FREE FROM SUBSOIL DEPRIS. WEERS  |         |
| В.  | GRASS, STONES, ETC.<br>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<br>REMAINING TOPSOIL SHALL BE USED FOR FINISHED GRADING AROUND STRUCTURES AND LANDSCAPING<br>AREAS.   | 8. FIEL |
| DISPOSI<br>A.   | TION OF UTILITIES<br>RULES AND REGULATIONS GOVERNING THE RESPECTIVE UTILITIES SHALL BE OBSERVED IN EXECUTING ALL<br>WORK UNDER THIS SECTION.   |         |
| В.<br>С.  | IF ACTIVE UTILITIES ARE ENCOUNTERED BUT NOT SHOWN ON THE DRAWINGS, THE ENGINEER SHALL BE<br>ADVISED BEFORE WORK IS CONTINUED.<br>INACTIVE AND ABANDONED UTILITIES ENCOUNTERED IN EXCAVATING AND GRADING OPERATIONS SHALL BE  |         |
| D.  | REPORTED TO THE ENGINEER. THEY SHALL BE REMOVED, PLUGGED OR CAPPED AS DIRECTED BY THE UTILITY COMPANY OR THE ENGINEER.<br>IT SHALL BE THE RESPONSIBILITY OF EACH CONTRACTOR TO VERITY ALL EXISTING UTILITIES AND   |         |
| 6. SITE GR  | 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. ADING  |         |
| 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. ROUGH GRADING: THE TOLERANCE FOR PAVED AREAS SHALL NOT EXCEPT O 10 FEET PLUS OR MINUS  |         |
| ى.  | ABOVE THE ESTABLISHED SUBGRADE. ALL OTHER AREAS SHALL NOT EXCEED 0.10 FEET PLUS OR MINUS<br>THE ESTABLISHED GRADE. ALL BANKS AND OTHER BREAKS IN GRADE SHALL BE ROUNDED AT THE TOP<br>AND BOTTOM.  |         |
| C.  | COMPACTION REQUIREMENTS:<br>1. ALL BUILDING PAD AREAS SHALL BE COMPACTED TO STANDARDS SPECIFIED BY LOCAL AND/OR<br>STATE BUILDING CODES.   |         |
| 7. EARTH  | 2. COMPACTION REQUIREMENTS OF PAVED AREAS SHALL BE 95% OF MAXIMUM DRY DENSITY.<br>WORK BALANCE   |         |
| A.  | AN EXCESS OR SHORTAGE OF EARTH IS ENCOUNTERED, THE CONTRACTOR SHALL CONFIRM WITH THE<br>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<br>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<br>STANDARDS FOR SUCH CALCULATIONS. FURTHER, THAT THESE CALCULATIONS ARE SUBJECT TO THE<br>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<br>OR SHORTAGE OF ACTUAL EARTHWORK MATERIALS TO COMPLETE THE PROJECT. IF SUCH AN ACTUAL<br>MINOR EXCESS OR SHORTAGE OF ACTUAL EARTHWORK MATERIALS OCCURS, THE CONTRACTOR SHALL   |         |
|   | EARTH.   |         |
|   | S<br>DE WORK   |         |
| 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:   |         |
|   | <ol> <li>ALL STREETS, PARKING AREAS WITHIN THE CONTRACT LIMITS.</li> <li>CURBS AND CONCRETE RAMPS.</li> <li>SIDEWALKS AND CONCRETE SLARS.</li> </ol>   |         |
| В   | 4. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL SPECIFICATIONS THE MORE STRINGENT SHALL APPLY.   |         |
| 2. paveme   | SPECIFICATIONS THE MORE STRINGENT SHALL APPLY.   |         |
| А.  | NT CONSTRUCTION  | 9. APF  |
|   | NT CONSTRUCTION<br>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND<br>CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND<br>IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.  | 9. APF  |
| В.  | NT CONSTRUCTION<br>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND<br>CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND<br>IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.<br>FLEXIBLE PAVEMENT<br>1. MATERIALS<br>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A   | 9. APF  |
| В.  | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.</li> <li>FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>B. COMPACTED AGGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG.</li> </ul>   | 9. APF  |
| В.  | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.</li> <li>FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>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.</li> <li>C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED</li> </ul>   | 9. APF  |
| В.  | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.</li> <li>FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>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.</li> <li>C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED GRAVEL, OR CRUSHED STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL,</li> </ul>  | 9. APF  |
| В.  | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED. FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>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.</li> <li>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.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL, 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.</li> <li>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.</li> <li>E. ASPHALT CEMENT: PETROLEUM ASPHALT CEMENT, AP 5 WITH PENETRATION OF 60-70 OR</li> </ul>   | 9. APF  |
| В.  | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED. FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>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.</li> <li>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.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL, CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>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.</li> <li>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.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.</li> </ul>  | 9. APF  |
| В.  | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.</li> <li>FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>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.</li> <li>C. BASE COURT AGGREGATE FOR SURFACE AND BINDER MIXTURES: 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. STANDARD SPECIFICATIONS SECTION 903.</li> <li>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 SPECIFICATION SECTION 903.</li> <li>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.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 408.</li> <li>G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 408.</li> </ul>   | 9. APF  |
|   | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED. FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>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.</li> <li>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.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL, CRUSHED SLAB, AND SHARP EDGED NATURAL SAND. SUFFACE COARSE AGGREGATES SHALL BE CLASS A AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>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.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 408.</li> <li>G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 408.</li> <li>H. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115), TYPE III.</li> &lt;</ul>   | 9. APF  |
| B.<br>3. ASPHAL<br>ALL<br>A.  | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.</li> <li>FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>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.</li> <li>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. STANDARD SPECIFICATIONS SECTION 903.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED GRAVEL, CRUSHED SLAB, AND SURFACE AND BINDER MIXTURES: COLARSE AGGREGATES SHALL BE CLASS A AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>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.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>F. AGCREGAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 408.</li> <li>G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 409.</li> <li>H. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115), TYPE III.</li> <li>T-AGGREG</li></ul>   | 9. APF  |
| B.<br>3. ASPHAL<br>ALL<br>A.<br>B.<br>C.  | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND<br/>CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND<br/>IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.</li> <li>FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A<br/>SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>B. COMPACTED AGGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR<br/>UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG.<br/>COURSE AGGREGATE SHALL BE CLASS A, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED<br/>GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL<br/>BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL,<br/>CRUSHED SLAB, AND SHARP EDGED NATURAL SAND. SURFACE COARSE AGGREGATES SHALL BE<br/>CLASS A AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>E. ASPHALT CEMENT: PETROLEUM ASPHALT CEMENT, AP 5 WITH PENETRATION OF 60-70 OR<br/>VISCOSITY GRADED ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li>G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 409.</li> <li>H. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115),<br/>TYPE III.</li> <li>T-AGGREGATE HMA SURFACE 9.5mm</li> <li>BINDER COURSE: HMA SURFACE 9.5mm</li> </ul>  | 9. APF  |
| B.<br>3. ASPHAL<br>ALL<br>A.<br>B.<br>C.<br>4. SURFAC   | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.</li> <li>FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>B. COMPACTED AGGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COLED BLAST FURNACE SLAC. COURSE AGGREGATE SHALL BE CLASS A, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED GRAVEL, OR CRUSHED STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL, CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>E. CASPHALT 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.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>F. ACKC COAT: REDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 409.</li> <li>H. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115), TYPE III.</li> <li>T-AGGREGATE IMIXTURE</li> <li>BIITUMINOUS MIXTURES ARE TO CONFORM TO CURRENT I.N.D.O.T. SPECIFICATIONS SUFFACE COURSE: HMA INTERME</li></ul>   | 9. APF  |
| B.<br>3. ASPHAL<br>A.L<br>B.<br>C.<br>4. SURFAC<br>A.   | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND<br/>CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND<br/>IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.</li> <li>FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A<br/>SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>B. COMPACTED AGGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR<br/>UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG.<br/>COURSE AGGREGATE SHALL BE CLASS A, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED<br/>GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL<br/>BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL,<br/>CRUSHED SLAB, AND SHARP EDGED NATURAL SAND. SURFACE COARSE AGGREGATES SHALL BE<br/>CLASS A ON B AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATION OF 60-70 OR<br/>VISCOSITY GRADED ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CIPE LIQUID ASPHALT CRUSHAL TEMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li>G. TACK COAT: RAPID-CURE LIQUID ASPHALT CR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li>G. TACK COAT: MAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li>G. TACK COAT: MAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 409.</li> <li>H. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115),<br/>TYPE III.</li> <li>T-AGGREGATE FOR CONFORM TO CURRENT I.N.D.O.T. SPECIFICATIONS<br/>SURFACE COURSE: H</li></ul>     | 9. APF  |
| B.<br>3. ASPHAL<br>A.<br>B.<br>C.<br>4. SURFAC<br>A.  | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND<br/>CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENCINCERING DEPARTMENTS, AND<br/>IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.</li> <li>FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A<br/>SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>B. COMPACTED AGGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR<br/>UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG.<br/>COURSE AGGREGATE SHALL BE CLASS A, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED<br/>GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL<br/>BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL,<br/>CRUSHED SLAB, AND SHARP EDGED NATURAL SAND. SURFACE COARSE AGGREGATES SHALL<br/>BE CLASS A AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>E. ASPHALT CEMENT: PETROLEUM ASPHALT CEMENT, AP 5 WITH PENETRATION OF 60-70 OR<br/>VISCOSITY GRADED ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li>G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 409.</li> <li>H. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115),<br/>TYPE IIII.</li> <li>T-AGGREGATE MIXTURE</li> <li>BITUMINOUS MIXTURES ARE TO CONFORM TO CURRENT I.N.D.O.T. SPECIFICATIONS<br/>SURFACE COURSE: HMA SURFACE 9.5mm</li> <li>BINDER COURSE: THAN SURFACE 9.5mm</li> <li>BINDER COURSE: THAN SURFACE WITH LOADED TRI-AXLE TRUCK (48 HOUR</li></ul>             | 9. APF  |
| B.<br>3. ASPHAL<br>ALL<br>A.<br>B.<br>C.<br>4. SURFAC<br>A.                                       | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND<br/>CONFORM TO THE MINIUM STANDARDS OF THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.<br/>FLEXIBLE PAVEMENT</li> <li>I. MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A<br/>SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>B. COMPACTED AGGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR<br/>UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG.<br/>COURSE AGGREGATE SHALL BE CLASS A, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED<br/>GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL<br/>BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 90.3.</li> <li>D. COARSE AGGREGATE FOR SUFFACE AND BINDER MIXTURES: CRUSHED OR UNCRUSHED<br/>GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL<br/>BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>E. ASPHALT CEMENT: PETROLEUM ASPHALT CEMENT, AP 5 WITH PETRITATION OF 60-70 OR<br/>WISCOSITY GRADED ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li>G. TACK COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 409.</li> <li>H. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115),<br/>TYPE III.</li> <li>T-AGGREGATE MA SURFACE 9.5mm</li> <li>BINDER COURSE: HMA INTERMEDIATE 19.0mm</li> <li>**PROVIDED A JOB MIX FORMULA FOR EACH TYPE OF ASPHALT PRIOR TO THE BEGINNING OF THE<br/>CONSTRUCTION PROJECT;</li> <li>E PREPARATION</li> <li>REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE SURFACE IMMEDIATELY BEFORE APPLYING PRIME<br/>COAT.</li> <li>I) PROOF ROLL SU</li></ul>         | 9. APF  |
| B.<br>3. ASPHAL<br>ALL<br>A.<br>B.<br>C.<br>4. SURFAC<br>A.<br>B.                                 | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND<br/>CONFORM TO THE MINIMUM STANDARDS OF THE CUTY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND<br/>IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.<br/>FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A<br/>SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>B. COMPACTED ACGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR<br/>UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG.<br/>COURSE ACGREGATE SHALL BE CLASS A, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED<br/>GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL<br/>BE CLASS A OR DAND COMPORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL,<br/>CRUSHED SLAB, AND SHARP EDEGD NATURAL SAND. SURFACE COARSE AGGREGATES SHALL BE<br/>CLASS A OND COMPORT TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>E. ASPHALT CEMENT: PETROLEUM ASPHALT CEMENT, AP 5 WITH PENETRATION OF 60-70 OR<br/>VISCOSITY GRANDED ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li>G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li>G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li>H. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115),<br/>TYPE III.</li> <li>T-AGGREGATE MIX TURE</li> <li>BITUMINOUS MIXTURES ARE TO CONFORM TO CURRENT I.N.D.O.T. SPECIFICATIONS<br/>SURFACE COURSE: HMA SURFACE</li></ul>     | 9. APF  |
| B.<br>3. ASPHAL<br>ALL<br>A.<br>B.<br>C.<br>4. SURFAC<br>A.<br>B.                                 | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND<br/>CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND<br/>IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.<br/>FLEXIBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A<br/>SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>B. COMPACTED AGGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR<br/>UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG.<br/>COURSE AGGREGATE SHALL BE CLASS A, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED ON UNCRUSHED<br/>GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL<br/>BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL,<br/>CRUSHED SLAB, AND SHAPE DOED NATURAL SAND. SURFACE COARSE AGGREGATES SHALL BE<br/>CLASS A AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>E. ASPHALT CEMENT TO HADLAL CEMENT AC-20 CONFORMING TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 409.</li> <li>H. LANE MARKING PANT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115),<br/>TYPE III.</li> <li>T-AGGREGATE MIXTURE</li> <li>BITUMINOUS MIXTURES ARE TO CONFORM TO CURRENT I.N.D.O.T. SPECIFICATIONS<br/>SUFFACE COURSE: HMA NUERMEDIATE 19.0mm<br/>BASE COURSE: IMA SURFACE 9.5mm</li> <li>BINDER COURSE: HMA NUERMENT CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115),<br/>TYPE III.</li> <li>T-AGGREGATE MAS SURFACE WITH LOADED TRI-AXLE TRUCK (48 HOUR NOTICE IS REQUIRED TO<br/>DE GVEN TO THE CITY OF FRANKLIN ENGINEERING DEPT.) TO CHECK FOR UNSTABLE AREAS AND<br/>AREAS REQUIRING ADD</li></ul> | 9. APF  |
| B.<br>3. ASPHAL<br>A.<br>B.<br>C.<br>4. SURFAC<br>A.<br>5. PLACING<br>A.                          | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND<br/>CONFORM TO THE MINIMUM STANDARDS OF THE CUTY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND<br/>IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REMSED.</li> <li>FLEXBLE PAVEMENT</li> <li>MATERIALS</li> <li>A. GENRAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A<br/>SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>B. COMPACTED AGGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR<br/>UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG.<br/>COURSE AGGREGATE SHALL BE CLASS A, TYPE '0' AND CONFORM TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED<br/>GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS: COARSE AGGREGATES SHALL<br/>BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED GRAVEL,<br/>CRUSHED SLAB, AND SHARP EDED NATURAL SAND. SUFFACE COARSE AGGREGATES SHALL<br/>BE CLASS A AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>C. CARSE COLFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>C. CARSE COLFORM MILL EMEDIAL TEMELT AC-20 CONFORMING TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 408.</li> <li>C. TACK COAT: RAPID-CURE LIQUID ASPHALT CRUSHLY, AF S WITH FENETRATION OF 60-70 OR<br/>VISCOSITY GRADED ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li>C. TACK COAT: RAPID-CURE LIQUID ASPHALT CRUSHLY, AS SHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li>C. TACK COAT: RAPID-CURE LIQUID ASPHALT CRUSHLY MEDIATELY BEFORE APPLYING PRIME<br/>CONSTRUCTION PROJECT.</li> <li>PROME DATI MEDIUM-CURE LIQUID ASPHALT CRUSHLY MULL EMILSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 408.</li> <li></li></ul>   | 9. APF  |
| B.<br>3. ASPHAL<br>A.<br>B.<br>C.<br>4. SURFAC<br>A.<br>5. PLACING<br>A.                          | <ul> <li>NT CONSTRUCTION</li> <li>NT CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND IF THERE ARE AS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REWSED.</li> <li>FLEXIBLE PAYEMENT</li> <li>MATERIALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>B. COMPACTED ACGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR UNCRUSHED GRAVEL, OR CRUSHED OR PREVIOUS INSTALLATIONS.</li> <li>B. COMPACTED ACGREGATE BASE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED SECTION 903.</li> <li>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, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>C. DARSE AGGREGATE FOR SURFACE AND BINDER MIXIURES: CRUSHED OR UNCRUSHED GRAVEL, CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE, AGGREGATES SHALL BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARD SECTION 903.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXIURES: CURSHED GRAVEL, CRUSHED GRAVEL OR CRUSHED STONE, CRUSHED STONE, CRUSHED GRAVEL, CRUSHED GRAVEL COMFORM TO I.N.D.O.T. STANDARD SECTION 903.</li> <li>E. ASPHALT CEMENT: PETROLEUM ASPHALT CEMENT, AP 5 WITH PENERTATION OF 60-70 OR VISCOSITY GRADED ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T. STANDARD SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT CREMENT A.P. SWITH STENTATION OF 60-70 OR VISCOSITY GRADED ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T. STANDARD SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT CREMENT APA SHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT CREMENT APA SHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>F. PRIME COAT: MEDI</li></ul>   | 9. APF  |
| B.<br>3. ASPHAL<br>A.<br>B.<br>C.<br>4. SURFAC<br>A.<br>B.<br>5. PLACING<br>A.<br>B.              | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND<br/>CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND<br/>IF THERE ARE AREAS UNDERINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.</li> <li>FLEXBLE PAVEMENT</li> <li>MATERNALS</li> <li>A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A<br/>SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.</li> <li>B. COMPARTED AGGREGATE BASS: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR<br/>UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG.<br/>COURSE AGGREGATE SHALL BE CLASS A, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD<br/>SPECIFICATIONS SECTION 903.</li> <li>C. BASE COLTA AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED<br/>GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS COARSE AGGREGATES SHALL<br/>BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURESS CRUSHED STONE, CRUSHED GRAVEL,<br/>CRUSHED SLAG, AND SHARP EDGED NATURAL SAND. SURFACE COARSE AGGREGATES SHALL BE<br/>CLASS A AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>E. ASPHALT CEMENT: PETROLEUM ASPHALT CEMENT, AP 5 WITH PENETRATION OF 60-70 OR<br/>VISCOSITY GRADED ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 406.</li> <li>G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 406.</li> <li>G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 409.</li> <li>H. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115),<br/>TYPE III.</li> <li>T-AGGREGATE MIX FORMULA FOR EACH TYPE OF ASPHALT PRIOR TO THE BEGINNING OF THE<br/>CONSTRUCTION PROLECT.</li> <li>BINDER COURSE: HMA NIERMEDIATE DISONF CONFORMIT D CURRENT I.N.D.O.T. SPECIFICATIONS<br/>SURFACE COURSE: HMA NIERMEDIATE DISONF CONFORMING TO THE DEGI</li></ul>         | 9. APF  |
| B.<br>3. ASPHAL<br>ALL<br>A.<br>B.<br>C.<br>4. SURFAC<br>A.<br>B.<br>5. PLACING<br>A.<br>B.<br>C. | <ul> <li>NT CONSTRUCTION</li> <li>ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND<br/>CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKUN AND ENGINEERING DEPARTMENTS, AND<br/>IF THERE ARE REASE UNDEFINED USE THE CURRENT INJO.T. STANDARDS SPECIFICATIONS, AS REVISED.<br/>FLEXIBLE PARAMENT</li> <li>MATERIALS</li> <li>MATERIALS</li> <li>MATERIALS</li> <li>COMPACTED ACGREGATE DASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR<br/>UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED ANR-COOLED BLAST FURNACE SLAG.<br/>COURSE ACGREGATE DASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR<br/>UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED ANR-COOLED BLAST FURNACE SLAG.<br/>COURSE ACGREGATE DASE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED<br/>GRAVEL, OR CRUSHED SLAG. SAND, STONE, OR SLAG SCREENINGS. COARSE ACGREGATES SHALL<br/>BE CLASS A OR BAID CONFORM TO IND.O.T. STANDARDS<br/>SPECIFICATIONS SECTION 903.</li> <li>COARSE ACGREGATE FOR SUFFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED OR AVEL,<br/>CRUSHED SLAB, AND CONFORM TO IND.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>COARSE ACGREGATE FOR SUFFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL,<br/>CRUSHED SLAB, AND CONFORM TO IND.O.T. STANDARDS SPECIFICATIONS SECTION 903.</li> <li>COARSE ACGREGATE FOR SUFFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL,<br/>CRUSHED SLAB, AND CONFORM TO IND.O.T. STANDARD SPECIFICATIONS SECTION 903.</li> <li>SE ASPHALT CEMENT, PETROLEUM ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 403.</li> <li>TEXAC COAR: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 403.</li> <li>TACK COAR: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 403.</li> <li>TACK COAR: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 403.</li> <li>TACK COAR: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T.<br/>STANDARD SPECIFICATIONS SECTION 403.</li> <li>TACK</li></ul>     | 9. APF  |

D. HOT 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 SECTION 409 OF I.N.D.O.T. STANDARD

- SURFACE COURSE: SPREAD AND ROLL TO MINIMUM FINISH DEPTH INDICATED ON DETAILS. FINISH STORM SEWER SYSTEMS ELEVATION SHALL BE TRUE TO LINE AND GRADE WITHIN  $\frac{1}{2}$ " OF TRUE ELEVATIONS. PAVER PLACING: PLACE IN STRIPS NOT LESS THAN 10' WIDE, UNLESS OTHERWISE ACCEPTABLE TO 1. SCOPE OF WORK
- AND EXTEND ROLLING TO OVERLAP PREVIOUS STRIPS. COMPLETE BINDER COURSE FOR A SECTION BEFORE PLACING SURFACE COURSE 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 2. STORM SEWER CONSTRUCTION
- TO HAVE SAME TEXTURE, DENSITY AND SMOOTHNESS AS OTHER SECTIONS. CLEAN CONTACT SURFACES AND APPLY TACT COAT.
- 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
- 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 LINTH MIXTURE HAS BEEN THOROUGHLY COMPACTED
- 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.
- 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 PROTECTION: AFTER FINAL ROLLING, DO NOT PERMIT VEHICULAR TRAFFIC ON PAVEMENT UNTIL IT HAS COOLED AND HARDENED. RECT BARRICADES TO PROTECT PAVING FROM TRAFFIC UNTIL MIXTURE HAS COOLED ENOUGH NOT TO
- BECOME MARKED
- AND LANE MARKINGS 9. ALL TRENCHES UNDER PAVEMENT SHALL BE COMPACTED TO 95 PERCENT MODIFIED PROCTOR. CLEANING: SWEEP AND CLEAN SURFACE TO ELIMINATE LOOSE MATERIAL AND DUST. APPLICATION STRIPPING: USE CHLORINATED RUBBER BASE TRAFFIC LANE-MARKING PAINT, FACTORY MIXED, A. PERMITS AND CODES: THE INTENT OF THIS SECTION OF THE SPECIFICATIONS IS THAT THE CONTRACTOR'S BID QUICK-DRYING, AND NON-BLEEDING. ON THE WORK COVERED HEREIN SHALL BE BASED UPON THE DRAWINGS AND SPECIFICATIONS BUT THAT THE COLOR: YELLOW 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
- 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. JALITY CONTROL
- 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
- SENERAL: 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. I) 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.
- HICKNESS: IN-PLACE COMPACTED THICKNESS WILL NOT BE ACCEPTABLE IF EXCEEDING FOLLOWING
- ALLOWABLE VARIATION FROM REQUIRED THICKNESS:
- AGGREGATE BASE COURSE: 兆, PLUS OR MINUS BASE COURSE: ½", PLUS OR MINUS
- BINDER COURSE: 1/4", PLUS OR MINU
- 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 PAVEMENT. AVEMENT THICKNESS DENSITY

- 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 WATER LINE SYSTEM DIRECTED BY THE ARCHITECT/ENGINEER SURFACE SMOOTHNESS: TEST FINISHED SURFACE FOR SMOOTHNESS, USING 10' STRAIGHTEDGE APPLIED  $_{
  m 1}$
- 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"
- BINDER COURSE SURFACE: 1/8" WEARING COURSE SURFACE: 1/8" CHECK SURFACED AREAS AT INTERVALS AS DIRECTED BY TESTING SERVICE. ENSITY 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. 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.
- 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.
- 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.
- OMPACTION 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. TILITY 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. ACING 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.
- ONCRETE 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. ONCRETE 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  $\frac{1}{2}$  INCH EXPANSION JOINTS WHERE SIDEWALKS INTERSECT, AND AT A MAXIMUM SPACING OF 48 FEET BETWEEN EXPANSION JOINTS. CURING CONCRETE FOR WALKS AND CURBS: EXCEPT AS OTHERWISE SPECIFIED, CURE ALL CONCRETE BY ONE OF THE METHODS DESCRIBED IN SECTION 501.17 OF THE I.N.D.O.T. SPECIFICATIONS, LATEST
- TUMINOUS 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 UNFAVORABLE WEATHER OR THEN THE TEMPERATURE IS 40 DEGREES F. AND FALLING. OMPACTED 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 TAMPERS OR WITH APPROVED HAND TAMPERS. ONCRETE 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." 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.

SPECIFICATIONS.

- ARCHITECT/ENGINEER. AFTER FIRST STRIP HAS BEEN PLACED AND ROLLED, PLACE SUCCEEDING STRIPS 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
  - A. STORM SEWERS 1. STORM SEWER STRUCTURES SHALL COMPLY WITH CURRENT SPECIFICATIONS OF THE CITY OF FRANKLIN PLANNING 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 "B" UNLESS OTHERWISE SPECIFIED ON THE PLANS. 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.
  - 5. MANHOLES, CATCH BASINS AND INLETS SHALL BE PRECAST CONCRETE. USE OF BRICK OR BLOCK WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE ENGINEER AND APPROVED IN WRITING BY THE CITY OF FRANKLIN PLANNING AND HIGHWAY DEPARTMENTS DRAINAGE PRIOR TO CONSTRUCTION. 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 MODEL NUMBER. 8. "B" BORROW BACKFILL SHALL BE REQUIRED UNDER ALL PAVEMENT AREAS AND TRENCHES WITHIN FIVE(5) FEET OF THE EDGE OF PAVEMENT.
  - 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 BE 3 APPROVED BY ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION. . 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 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 . 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.

- 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. ALL C-900 PVC WATER MAIN SHALL BE DR-14 CLASSIFICATION. 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 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 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, CLEAN ITEMS INCLUDING EXCAVATING AND BACKFILLING. NECESSARY TO COMPLETE THE W DRAWINGS, STARTING OUTSIDE THE BUILDING WALLS. THE END OF SEWERS SHALL BE CAPPED AT THE TERMINAL POINTS, ADJACENT TO THE BUILDING DRAIN AS SPECIFIED SPECIFICATIONS AND/OR ARCHITECTURAL DRAWINGS.
- 2. MATERIALS A. SANITARY SEWERS
  - 1. ALL GRAVITY PLASTIC SEWER PIPE FITTINGS SHALL CONFORM TO ASTM D3034 WITH A OF 12454-B OR 12454-C. FLEXIBLE GASKETED COMPRESSION JOINTS SHALL BE US TRUSS PIPE. NO SOLVENT CEMENT JOINTS SHALL BE ALLOWED. . 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 CONFOR LATEST REVISION. EXTERIOR OF THE MANHOLE SHALL BE WATERPROOFED WITH BISMA 2. CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOW HOLES, POROSITY, HARI DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL-CLEANED BY SH SOME OTHER APPROVED METHOD. THEY SHALL BE COATED WITH ASPHALT PAINT WH A SMOOTH COATING, TOUGH AND TENACIOUS WHEN COLD, NOT TACKY OR BRITTLE.
  - IRON MEETING ASTM A-48 LATEST REVISION. MANHOLE COVERS FOR SANITARY SEWER TYPE R-1722 W/R-1712-B-SP FRAME W/SELF-SEALING APPLICATION. 3. JOINTS: MANHOLE SECTIONS SHALL BE JOINED WITH A NOMINAL 1/2 INCH SIZE GASKET MATERIAL, CONFORMING TO AASHTO M-198 AND FEDERAL SPECIFICATION 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-C MATERIAL. THE COPOLYMER POLYPROPYLENE SHALL MEET THE REQUIREMENTS OF DEFORMED 36 INCH DIAMETER OR LARGER REINFORCING STEEL CONFORMING TO AST STEPS SHALL BE A MAXIMUM OF 24 INCHES FROM TOP, 24 INCHES FROM BOT
- SPACING BETWEEN. . SANITARY FORCE MAINS 1. ALL SANITARY FORCE MAIN PIPE AND FITTINGS SHALL CONFORM TO ASTM SPECIFICATION FOR POLY VINYL CHLORIDE (PVC) PRESSURE-RATED PIPE, (SDR 21, GR DIAMETER)
- 2. TRACER WIRE SHALL BE INSTALLED WITH ALL SANITARY FORCE MAIN PIPE. D. CASING
- 1. SANITARY SEWERS CONSTRUCTED WITH POLYVINYL CHLORIDE (PVC) AND INSTALLEI SHALL BE CASED IN CONFORMANCE WITH AWWA STANDARD C900-89, STANDA CHLORIDE (PVC) PRESSURE PIPE, 4 IN. THROUGH 12 IN. FOR WATER DISTRIBUTION, APP APPLICATION
- A. PERMITS AND CODES: THE INTENT OF THIS SECTION OF THE SPECIFICATIONS IS THAT THE CONTRACTOR'S COVERED HEREIN SHALL BE BASED UPON THE DRAWINGS AND SPECIFICATIONS BUT TH. COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. FURNISH ALL BONDS NECESSARY TO GET PERMITS FOR CUTS AND CONNECTIONS TO EXIST
- B. LOCAL STANDARDS: THE TERM "LOCAL STANDARDS" AS USED HEREIN MEANS THE STANDARDS OF DESIGN AND THE RESPECTIVE MUNICIPAL DEPARTMENT OR UTILITY COMPANY. 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. . WORKMANSHIF
- THIS WORK SHALL CONFORM TO ALL LOCAL, STATE AND NATIONAL CODES AND TO BE LOCAL AND STATE AGENCIES HAVING JURISDICTION. TRENCHING:
- LAY ALL PIPE IN OPEN TRENCHES, EXCEPT WHEN THE LOCAL AUTHORITY GIVES WRITT TUNNELING. OPEN THE TRENCH SUFFICIENTLY AHEAD OF PIPE-LAYING TO REVEAL ANY MIN, WIDTH OF TRENCH SHALL BE 1.25 TIMES THE OUTSIDE DIA, PLUS 12 INCHES, SHEET AS NECESSARY TO PROTECT WORKMEN AND ADJACENT STRUCTURES. ALL TRENCHIN OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. KEEP TRENCHES FREE CONSTRUCTION IS IN PROGRESS. UNDER NO CIRCUMSTANCES SHALL PIPE OR APPURT STANDING WATER. CONDUCT THE DISCHARGE FROM TRENCH DE-WATERING TO DRAINS OR CHANNELS. SPECIAL SUPPORTS
- WHENEVER, IN THE OPINION OF THE ENGINEER, THE SOIL AT OR BELOW THE PIPE GRADE SUPPORTING SEWERS AND APPURTENANCES SPECIFIED IN THIS SECTION, SUCH SPECIAL TO THOSE SHOWN OR SPECIFIED, SHALL BE PROVIDED AS THE ENGINEER MAY DIRECT, WILL BE ADJUSTED.
- BACKFILLING BACKFILL SHALL BE PLACED AS SHOWN IN THE PLANS. COMPACT THIS BACKFILL THOROL NOT TO DISTURB THE PIPE. BACKFILL UNDER AND WITHIN 5 FEET OF WALKS, PARKING AND STREETS SHALL BE GRANULAR MATERIAL ONLY AND THOROUGHLY COMPACTED BY AN
- 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 HY THE SMOOTH CONVEYANCE OF FLOW THROUGH THE MANHOLE. THE BENCH WALL SHALL CROWN OF THE INLET AND OUTLET PIPES TO FORM A "U" SHAPED CHANNEL. THE BENCH BACK FROM THE CROWN AT ½ INCH PER FOOT TO THE MANHOLE WALL. LEAKAGE TESTING
- THE CONTRACTOR SHALL FURNISH THE NECESSARY EQUIPMENT TO TEST SEWERS FO SANITARY SEWER GRAVITY LINES, UPON COMPLETION, SHALL BE REQUIRED TO PASS ONE J. HYDROSTATIC TEST:
- A HYDROSTATIC TEST SHALL BE PERFORMED WITH A MINIMUM OF TWO (2) FEET OF RATE OF EXFILTRATION OR INFILTRATION SHALL NOT EXCEED TWO HUNDRED (200) GAL PIPE DIAMETER PER LINEAR MILE PER DAY. K LOW PRESSURE AIR TEST
- A LOW PRESSURE AIR TEST SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM F141 METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PLASTIC PIPE
- . ALL SANITARY FORCE MAIN LINES, UPON COMPLETION, SHALL BE REQUIRED TO PASS CONDUCTED IN ACCORDANCE WITH AWWA STANDARD C605-94, AWWA STANDARD INSTALLATION OF POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND FITTINGS FOR WATER. M. ALL SANITARY SEWER MANHOLES SHALL ALSO BE AIR TESTED IN ACCORDANCE WIT
- STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE 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 ACCEPTANCE 0. PLASTIC SEWER PIPE INSTALLATION: PLASTIC SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 PER LAT
- SHALL BE TESTED AFTER THIRTY DAYS, USING A MANDREL THAT IS 95% OF THE INSID PIPE BEING TESTED. SAID MANDREL SHALL BE PULLED BY HAND THROUGH EACH PIPE DEFLECTION IS LESS THAN ACCEPTABLE LIMITS. P. STORM WATER CONNECTIONS:
- NO ROOF DRAINS, FOOTING DRAINS AND/OR SURFACE WATER DRAINS MAY BE CONNECTE SEWER SYSTEMS, INCLUDING TEMPORARY CONNECTIONS DURING CONSTRUCTION.
- ). WATERLINE CROSSING: WHERE WATER LINES AND SANITARY SEWERS CROSS AND WATER LINES CANNOT BE SEWER WITH A MINIMUM OF 18 INCHES VERTICAL CLEARANCE, THE SEWER MUST BE CON WORKS GRADE DUCTILE IRON PIPE WITH MECHANICAL JOINTS WITHIN 10 FEET OF THE WAT
- R. UTILITIES: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERITY ALL EXISTING UTILIT PERTAINING TO HIS WORK. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO CO OF THE VARIOUS UTILITIES BEFORE WORK IS STARTED. THE CONTRACTOR SHALL NOT OWNER AND THE ENGINEER OF ANY CHANGES, ERRORS OR OMISSIONS FOUND ON THESE 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 AT THESE PLANS.

| NOUTS AND RELATED<br>ORK SHOWN IN THE<br>TIGHTLY PLUGGED OR<br>D IN THE PLUMBING<br>CELL CLASSIFICATION  |            |                |               |                                 | Transportation & | Development Consultants<br>115 N. 17th. ADNUE, BECH 6800K, N. 46107 (317) 780-1555 | знеет 1200                                   |   |
|--|------------|----------------|---------------|---------------------------------|------------------|--|--|---|
| HED FOR PVC & PVC<br>WINT TO ASTM C-478<br>TIC MATERIAL.<br>D SPOTS, SHRINKAGE<br>107-BLASTNG OR BY<br>CH SHALL BE RESULT IN<br>HEY SHALL BE REANH<br>UTYL RUBBER BASE<br>1 SS-S-210A. JOINT<br>BE THAT STEPS ARE<br>RROSIVE FIBERGLASS<br>F ASTMD-4101 WITH<br>M A-615, GRADE 60.<br>TOM AND 16 INCHES<br>D2241, STANDARD<br>REATER THAN 4 INCH<br>D UNDER RAILROADS<br>ARD FOR POLYVINYL<br>PFENDIX A.<br>BID ON THE WORK<br>AT THE WORK SHALL<br>. CONTRACTOR SHALL<br>. CONTRACTOR SHALL<br>. CONTRUCTION OF<br>SEWERS AND OTHER<br>TO THE SATISFACTION<br>E APPROVED BY ALL<br>TEN PERMISSION FOR<br>O COMPLY WITH<br>E ROW WATER TENCH<br>IS TO COMPLY WITH<br>IS TO WATER TENCH<br>IS TO COMPLY WITH<br>IS TO WATER TENCH<br>IS TO COMPLY WITH<br>IS TO WATER TENCH<br>IS TO WATER TENCH<br>IS TO WATER TENCH<br>IS TO COMPLY WITH<br>IS TO WATER TENCH<br>IS TO WATER TENCH |            | SPECIFICATIONS |               | WINDSOR AT HILLVIEW - SECTION 4 |                  | JOB No DRAWN KLF/LMC/DEP CHECKED TEN   | DATE NOVEMBER 3, 2022 DESIGNED DJM APPR. GJI |   |
| E IS UNSUITABLE FOR<br>SUPPORT, IN ADDITION<br>AND THE CONTRACT<br>UGHLY, TAKING CARE<br>G AREAS, DRIVEWAYS<br>PPROVED METHODS.<br>PRECAST BASE. THE<br>YDRAULICS TO ALLOW<br>BE FORMED TO THE<br>H WALL SHALL SLOPE   | CORY J. I. | A KOUSTERE TO  | а 10300059 н. | CALATE OF A                     | CONSTRUCTION     |  | And we                                       | ) |
| POSITIVE HEAD. THE<br>LILONS PER INCH OF<br>17, STANDARD TEST<br>7 PRESSURE AIR, FOR<br>35 A LEAKAGE TEST<br>FOR UNDERGROUND<br>TH ASTM C1244–93,<br>(VACUUM) TEST.  |            |                |               |                                 |                  |  | BY APPR.                                     | - |
| FLOW THROUGH EACH<br>OF WORK.<br>IEST REVISION. PIPES<br>DE DIAMETER OF THE<br>SECTION TO ENSURE<br>ED TO THE SANITARY<br>PLACED ABOVE THE<br>ISTRUCTED OF WATER<br>TER LINE.<br>TIES AND CONDITIONS<br>ONTACT THE OWNERS<br>TIEY IN WRITING THE<br>SE PLANS OR IN THE<br>TO THAT SPECIFIED IN<br>LOCATIONS SHOWN IN   |            |                |               |                                 |                  |  | REVISIONS                                    |   |
|  |            |                |               |                                 |                  |  |  |   |
|  | 6 8        | 2              | 2 2           | ) 4                             | m                | - 2  | NO. DATE                                     |   |

SHEET

![](_page_12_Figure_0.jpeg)

![](_page_12_Figure_3.jpeg)

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL VEGETATION AND LEAVING ALL LANDSCAPE AREAS AT TWO INCHES BELOW FINAL GRADE, EXCEPT FOR THE DETENTION POND AREA; GENERAL CONTRACTOR IS RESPONSIBLE FOR BRINGING THE POND AREA TO FINAL GRADE. THE LANDSCAPE CONTRACTOR WILL PROVIDE AND SPREAD A COMPACTED TWO INCH DEPTH OF LOAMY TOPSOIL IN ALL TURF AREAS - BRINGING THESE AREAS TO TOP OF CURB/FINAL GRADE (COMPACTED). THE LANDSCAPE CONTRACTOR WILL PROVIDE AND INSTALL A FOUR INCH DEPTH OF PLANTING MIX TO ALL PLANTING BEDS – CROWNING FOR PROPER DRAINAGE. (SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.) 2. A THREE INCH DEPTH OF SHREDDED HARDWOOD BARK MULCH WILL BE USED AS A TOPDRESSING FOR ALL PLANTING BEDS AND TREE RINGS. 3. LANDSCAPE CONTRACTOR SHALL MAKE OWN PLANT QUANTITY TAKEOFFS USING

DRAWINGS, SPECIFICATIONS AND PLANT SCHEDULE. PLANT SCHEDULE REQUIREMENTS (I.E. SPACING) DICTATE, UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE DESIGNER. LANDSCAPE CONTRACTOR TO VERIFY BED MEASUREMENTS AND INSTALL APPROPRIATE QUANTITIES AS GOVERNED BY THE THE PLANT SPACING PER THE SCHEDULE. ENSURE ALL MINIMUM REQUIREMENTS OF THE LOCAL GOVERNING AUTHORITY ARE MET (I.E. MINIMUM PLANT

4. NO SUBSTITUTIONS OF PLANT MATERIALS WILL BE ALLOWED. IF PLANTS ARE NOT AVAILABLE, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE DESIGNER IN WRITING (VIA PROPER CHANNELS). PLANTS MAY BE INSPECTED AND APPROVED OR REJECTED ON THE JOBSITE BY THE OWNER OR THE OWNER'S REPRESENTATIVE. 5. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE LANDSCAPE MAINTENANCE OF THIS PROJECT UNTIL FINAL ACCEPTANCE. TURF AREAS WILL NOT BE ACCEPTED UNTIL THEY AREA AT A MINIMUM OF 1-1/2 INCHES TALL, AND NO

![](_page_13_Figure_0.jpeg)

LANDSCAPE NOTES:

- 1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL VEGETATION AND LEAVING ALL LANDSCAPE AREAS AT TWO INCHES BELOW FINAL GRADE, EXCEPT FOR THE DETENTION POND AREA; GENERAL CONTRACTOR IS RESPONSIBLE FOR BRINGING THE POND AREA TO FINAL GRADE. THE LANDSCAPE CONTRACTOR WILL PROVIDE AND SPREAD A COMPACTED TWO INCH DEPTH OF LOAMY TOPSOIL IN ALL TURF AREAS - BRINGING THESE AREAS TO TOP OF CURB/FINAL GRADE (COMPACTED). THE LANDSCAPE CONTRACTOR WILL PROVIDE AND INSTALL A FOUR INCH DEPTH OF PLANTING MIX TO ALL PLANTING BEDS – CROWNING FOR PROPER DRAINAGE. (SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.)
- 2. A THREE INCH DEPTH OF SHREDDED HARDWOOD BARK MULCH WILL BE USED AS A TOPDRESSING FOR ALL PLANTING BEDS AND TREE RINGS. LANDSCAPE CONTRACTOR SHALL MAKE OWN PLANT QUANTITY TAKEOFFS USING DRAWINGS, SPECIFICATIONS AND PLANT SCHEDULE. PLANT SCHEDULE REQUIREMENTS (I.E. SPACING) DICTATE, UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE DESIGNER. LANDSCAPE CONTRACTOR TO VERIFY BED MEASUREMENTS AND INSTALL APPROPRIATE QUANTITIES AS GOVERNED BY THE
- THE PLANT SPACING PER THE SCHEDULE. ENSURE ALL MINIMUM REQUIREMENTS OF THE LOCAL GOVERNING AUTHORITY ARE MET (I.E. MINIMUM PLANT QUANTITIES.) 4. NO SUBSTITUTIONS OF PLANT MATERIALS WILL BE ALLOWED. IF PLANTS ARE NOT AVAILABLE, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE DESIGNER IN WRITING (VIA PROPER CHANNELS). PLANTS MAY BE INSPECTED AND APPROVED OR REJECTED ON THE JOBSITE BY THE OWNER OR THE
- OWNER'S REPRESENTATIVE. 5. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE LANDSCAPE MAINTENANCE OF THIS PROJECT UNTIL FINAL ACCEPTANCE. TURF AREAS WILL NOT BE ACCEPTED UNTIL THEY AREA AT A MINIMUM OF 1-1/2 INCHES TALL, AND NO BARE AREAS LARGER THAN 12 SQUARE INCHES.

![](_page_13_Figure_6.jpeg)

SHEET

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## LANDSCAPE PLANTING SPECIFICATIONS

QUALIFICATIONS OF LANDSCAPE CONTRACTOR

1. The landscaping shall be performed by a single firm specializing in landscape

2. A list of successfully completed projects of this type, size and nature may be requested by the Owner for further qualification measures.

3. The Landscape Contractor must hold a valid Nursery and Floral Certificate issued by the Indiana Department of Agriculture, as well as operate under a Commercial Pesticide Applicator License - issued by either the Indiana Department of Agriculture or the Indiana Structural Pest Control Board.

# SCOPE OF WORK

1. Work covered by these sections includes the furnishing of any paying for all materials, labor, services, equipment, licenses, taxes and any other items that are necessary for the execution, installation and completion of all work, specified herein and / or shown on the Landscape Plan.

2. All work shall be performed in accordance with all applicable laws, codes and regulations required by authorities having jurisdiction over such work and provide all inspections and permits required by federal, state and local authorities in supply, transportation and installation of materials.

3. The Landscape Contractor is responsible for the verification of all underground utility lines (telephone, gas, water, electrical, cable, television, etc...) prior to the start of any work.

### PLANT MATERIALS

1. Provide plants typical of their species or variety, with normal, densely developed branches and vigorous, fibrous root systems.

2. Provide only sound, healthy, vigorous plants free from defects, disfiguring knots, sunscald injuries, frost cracks, abrasions of the bark, plant disease, insect eggs, borers and all other forms of infestation.

3. All plants shall be balled and burlapped or container grown as specified. No container grown stock will be accepted if it is root bound. All root wrapping material made of synthetics shall be removed at time of planting. 4. All material shall conform to the guidelines established by the American Association of Nurseryman.

5. Cracked or mushroomed rootballs are not acceptable. 6. Caliper measurement for standard (single trunk) trees shall be taken as

follows: Six inches above the natural grade line for trees up to and including four inches in caliper; and twelve inches above the natural grade line for trees exceeding four inches in caliper - unless specified differently on the Landscape Plan.

7. Multi-trunk trees shall be measured by their overall planted height.

## PRODUCTS

1. All manufactured products will be new.

2. Topsoil: A friable, loamy topsoil (or silty sand) with minimal clay clods.

3. Planting Mix: An equal part mixture of topsoil, sand and compost. 4. Starter Fertilizer: A 13-13-13 ratio with 25% scu, 5% sulfur, 2% iron and

additional micronutrients. 5. Pre-Emergence: Any granular, non-staining pre-emergence that is labeled for the specific ornamentals or turf it will be utilized on. A pre-emergence herbicide is to be applied per the manufacturer's labeled rates.

6. Mulch: As specified on the planting plan - well decomposed.

7. Steel Edging: Professional steel edging, 14 gauge thick x 4 inches wide factory painted dark green. Acceptable manufacturers include Col-Met or

approved equal. 8. Weed Barrier: A 5 ounce, woven, needle-punched fabric. Acceptable product includes DeWitt' Pro 5, or approved equal.

9. Tree Stakes: 6' green metal t-posts

10. Tree Chain: 1" wide plastic tree chain

### TREE PLANTING

1. Tree holes shall be excavated to a width of two times the width of the rootball, and to a depth equal to the depth of the rootball (less two inches). 2. Scarify the sides and bottom of the tree hole prior to the placement of the tree. Remove any glazing that may have been caused during the excavation of the hole

3. Install the tree so the top of the rootball is one to two inches above the surrounding grade.

4. Backfill the tree hole utilizing the existing topsoil from on-site. Clay, rocks and other debris shall be removed from the soil prior to the backfill. Should additional soil be required to accomplish this task, import additional topsoil from off-site, add no additional cost to the Owner.

5. The total number of tree stakes (beyond the minimum's listed below) will be left to the Landscape Contractor's discretion. Should any trees fall or lean, it will be the responsibility of the Landscape Contractor to straighten the tree, or replace it should it become damaged. Tree staking will consists of, at a minimum:

| 15 - 30 gal Trees  | (2) Stakes per Tree |
|--------------------|---------------------|
| 45 - 100 gal Trees | (3) Stakes per Tree |
| Multi-Trunk Trees  | No Minimum          |

6. Upon completion of the planting, an earth watering basin will be constructed around the tree. The interior of the tree ring will then be covered with the weed barrier cloth, and topdressed with a three inch layer of mulch.

## SHRUB AND GROUNDCOVER PLANTING

1. Upon approval of the grade left by the General Contractor, the Landscape Contractor will rototill the proposed bed locations (BEFORE adding the imported soil). A four inch depth of the specified planting mix will then be evenly spread over the designated bed area. The planting bed will then be rototilled AGAIN, and a pre-emerence and starter fertilizer will be applied. 2. The planting bed will then be hand raked smooth and crowned for proper drainage.

3. Dig the hold twice as wide as the plant's rootball. Install the plant in the hole. Backfill around the plant.

4. Install the weed barrier cloth, overlapping it at the ends. Utilize steel staples to keep the weed barrier cloth in place.

5. A two inch depth of mulch will then be installed as a top dressing, covering the entire planting area.

### TURF AREA PREPARATION

1. The General Contractor will leave all turf areas (excluding the detention ponds) at two (2) inches below final grade. The Landscape Contractor shall import and spread a compacted two inch depth of loamy topsoil - ensuring the soil is compacted.

2. Landscape Contractor will ensure all areas are crowned for proper drainage 3. Apply the starter fertilizer.

## SODDING

1. Sod variety to be as specified on the Landscape Plan. 2. Lay sod within 24 hours from the time of stripping. Do not lay if the ground is frozen.

3. Lay the sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips - do not overlap. Stagger strips to offset joints in adjacent courses. 4. Water the sod thoroughly with a fine spray immediately after planting to

obtain at least six inches of penetration into the soil below the sod. 5. Roll the sod to ensure good contact of the sod's root system with the soil underneath.

### HYDROMULCHING

1. The hydromulch mix (per 1,000 sf) shall be as follows:

| 35# | Cellulose Fiber Mulch            |
|-----|----------------------------------|
| 2#  | Fescue Seed                      |
| 1#  | Annual Rye Seed                  |
| 10# | 15-15-15 Water Soluble Fertilize |
|     |                                  |

CLEAN UP

1. During landscape preparation and planting, keep all pavement clean and all work areas in a neat, orderly condition. 2. All excavated materials will be disposed of legally off the project site.

### INSPECTION AND ACCEPTANCE

1. Upon completion of the work, provide the site clean and free of materials and suitable fro use as intended. 2. When the planting work is completed, the Owner will make an inspection to

determine acceptability. 3. When the inspected planting work does not comply with the contract documents, replace the rejected work within 24 hours. 4. Landscape maintenance will continue until re-inspected by the Owner and found to be acceptable. Once acceptable, Final Acceptance will be issued, and the required maintenance period will commence.

### LANDSCAPE MAINTENANCE

1. The maintenance period shall commence once Final Acceptance has been issued by the Owner, and shall continue for a period of ninety (90) days. 2. The monitoring and scheduling of the irrigation system will be the responsibility of the Landscape Contractor during this time. Coordinate all scheduling and any access requirements with the Owner. 3. Landscape maintenance shall include, but not be limited to: WEEKLY SITE VISITS FOR mowing, edging, blowing, weeding, trimming, pruning, fertilizing, weed control, insect control, disease control, re-staking, re-setting of plants to their proper grade or their upright position, and any other means to keep the plantings healthy, free of insects and diseases, and in a continual thriving condition.

## WARRANTY PERIOD, PLANT GUARANTEE AND REPLACEMENTS

1. Plant materials supplied shall be warrantied to remain alive and healthy for a period of twelve (12) months after the date of Final Acceptance by Owner {seasonal annuals for 90 days from Final Acceptance}. Plants in an impaired, dead or dying condition after initial acceptance or within the warranty period shall be removed and replaced immediately to the satisfaction of the Owner.

### RECORD DRAWINGS

1. Provide a minimum of (2) copies of record drawings to the Owner upon completion of work. A record drawing is a record of all changes that occurred in the field and that are documented through change orders, addenda, or contractor/consultant drawing markups.

![](_page_14_Figure_60.jpeg)

![](_page_14_Figure_76.jpeg)

![](_page_14_Figure_78.jpeg)