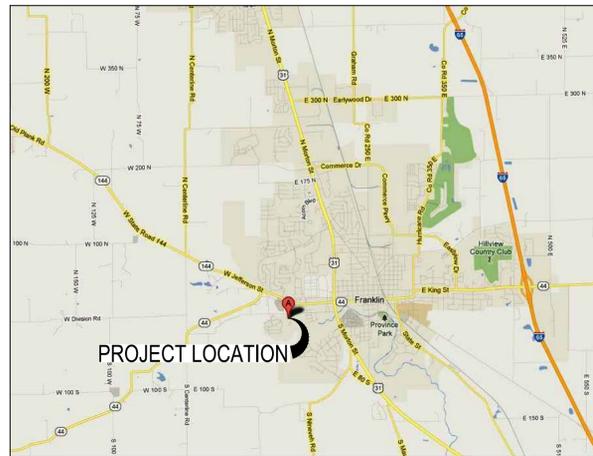
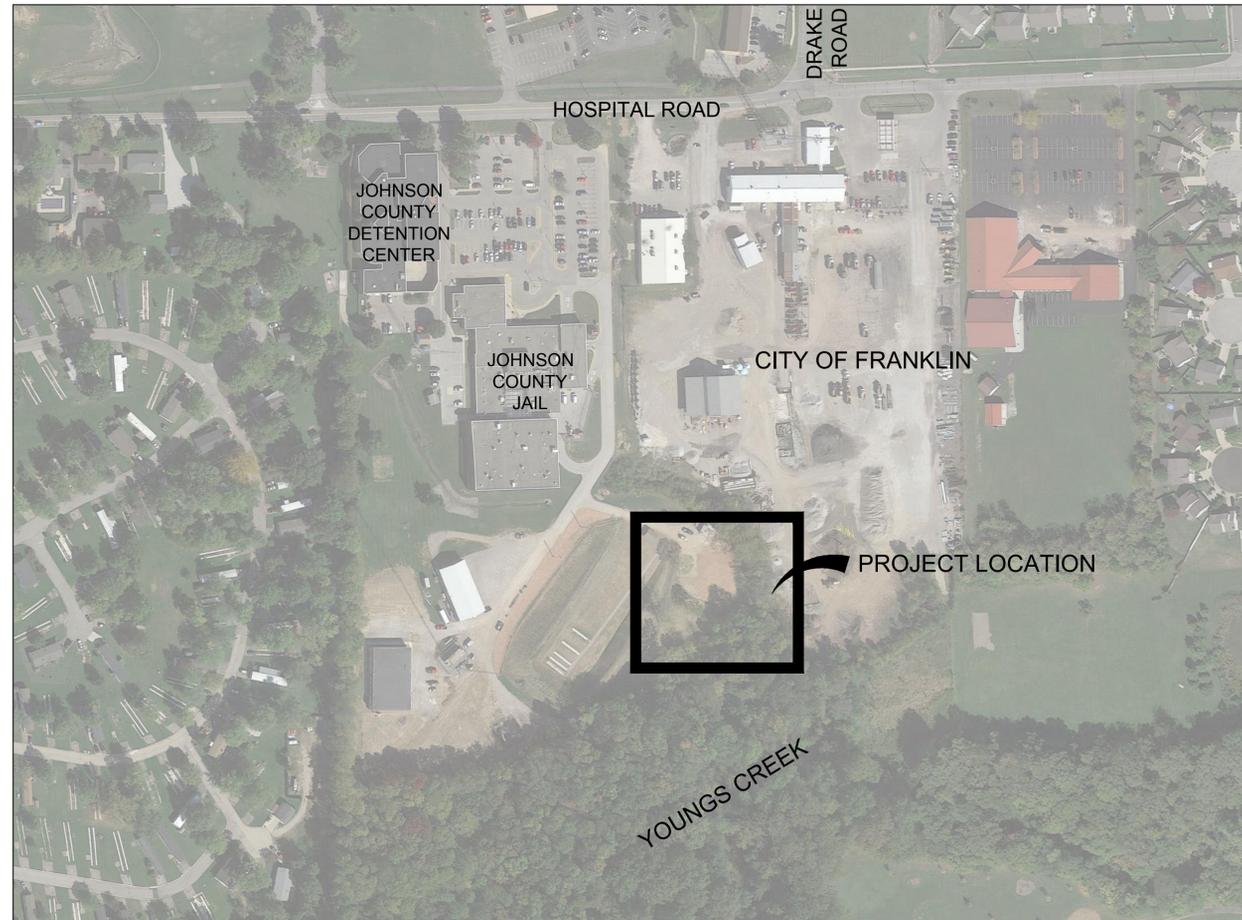


# FINAL CONSTRUCTION PLANS

## JOHNSON COUNTY NEW TRAINING FACILITY 1081 HOSPITAL ROAD FRANKLIN, INDIANA



VICINITY MAP  
NO SCALE



LOCATION MAP  
NO SCALE

PLAN INDEX	
SHEET #	SUBJECT
100	TITLE SHEET
200	TOPOGRAPHICAL SURVEY & DEMOLITION PLAN
300	SITE DIMENSION PLAN & GRADING PLAN
301	UTILITY PLAN
400	EROSION CONTROL PLAN
401	EROSION CONTROL DETAILS
500	MISCELLANEOUS DETAILS & SPECIFICATIONS

**OWNER/DEVELOPER**  
JOHNSON COUNTY  
(BOARD OF COMMISSIONERS)  
86 W COURT STREET  
FRANKLIN, IN 46131  
PHONE: (317) 346-4300  
CONTACT: BRIAN BAIRD  
bbaird@co.johnson.in.us

**ENGINEER**  
CROSSROAD ENGINEERS, PC  
3417 SHERMAN DRIVE  
BEECH GROVE, IN 46107  
PHONE: (317) 780-1555 x 112  
FAX: (317) 780-6525  
CONTACT: GREGORY J. ILKO  
gilko@crossroadengineers.com

**GENERAL CONTRACTOR**  
DUKE HOMES, INC.  
4300 N ROAD 725 W  
BARGERSVILLE, IN 46106  
PHONE: (317) 422-9000  
CONTACT: MATT HARRISON  
mattharrison@dukecommercial.com

THE REVIEW AND APPROVAL OF THESE SITE PLANS (INCLUDING ANY IMPROVEMENTS MARKED AS "FUTURE" IS VALID FOR 3 YEARS FROM THE FINAL APPROVAL DATE ON FILE WITH THE CITY OF FRANKLIN PLANNING DEPARTMENT.



100  
SHEET

---

TITLE SHEET

JOHNSON COUNTY NEW TRAINING FACILITY

---

JOB No.	DRAWN	AEC	CHECKED	TEN	GJI
DATE	March 19, 2015	DESIGNED	APPR.		

---

REGISTERED  
ENGINEER  
NO. 10300059  
STATE OF INDIANA  
PROFESSIONAL



---

NO.	DATE	REVISIONS	BY	APPR.

---

100

SHEET



**BENCHMARK INFORMATION**

BM #1  
 NGS BENCHMARK  
 DESIGNATION - X 13  
 PID - K40010  
 VERTICAL ORDER - FIRST CLASS II

DESCRIPTION:  
 AT THE INTERSECTION OF NEW STATE ROAD 144 AND OLD STATE ROAD 37, IN THE SOUTHWEST QUARTER OF THE INTERSECTION. A STANDARD DISK, STAMPED 686.370 X 13 1930 AND SET IN THE TOP OF A CONCRETE POST PROJECTING 7 INCHES ABOVE GROUND.

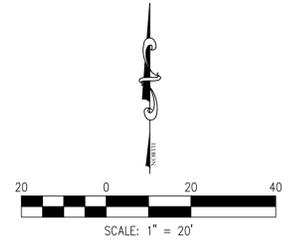
ELEVATION = 685.57 FEET (NAVD 88)

TBM #1  
 BARN NAIL FOUND ON WEST SIDE OF PWP #364-301 UP ± 1.5'  
 ELEVATION = 734.64

**LANDSCAPING ANALYSIS**

**PARKING LOT INTERIOR LANDSCAPING**  
 REQUIRED RATIO:  
 ISLANDS EQUAL TO 5% OF TOTAL PAVED AREA REQ'D  
 1 TREE PER 300 SQ. FT. OF LANDSCAPE AREA

**SITE INFORMATION:**  
 TOTAL PAVED AREA = 18,600 SQ. FT.  
 5% OF TOTAL PAVED AREA = 930 SQ. FT.  
 LANDSCAPE ISLAND PROVIDED = 930 SQ. FT.



**SITE DIMENSION LEGEND**

- (A) MULCH SEEDING/LANDSCAPE AREAS
- (B) STRUCTURE FOUNDATION - PER BUILDING PLANS
- (C) 4" CONCRETE SIDEWALK (SEE DETAIL-SHEET 500)
- (D1) MONOLITHIC CONCRETE CURB AND SIDEWALK (SEE DETAIL-SHEET 500)
- (C) HANDICAP RAMP (SEE DETAIL-SHEET 500)
- (H) HMA PAVEMENT SECTION  
 1" HMA SURFACE 9.5mm ON  
 3" HMA INTERMEDIATE 19.0mm ON  
 6" COMPACTED AGGREGATE #53 ON  
 COMPACTED SUBGRADE (SEE DETAIL-SHEET 500)
- (J) SAWCUT
- (K) HANDICAP RAMP (SEE DETAIL-SHEET 500)
- (L) 6' CHAIN LINK FENCE
- (M) PROPOSED TREE (COORDINATE WITH OWNER)
- (1) LINE, PAINT, SOLID WHITE, 4"
- (2) LINE, PAINT, SOLID BLUE, 4"
- (3) HANDICAP SYMBOL, PAINTED, SOLID BLUE, 4"
- (4) SIGNAGE (SEE DETAIL-THIS SHEET)
- x PROPOSED CHAINLINK FENCE

**GRADING LEGEND**

- x 660.00 FINISH GRADE PROPOSED ELEVATIONS
- x 659.50 PROPOSED ELEVATIONS (TO BE FIELD VERIFIED)
- x 660.00 PROPOSED ELEVATIONS (TO BE FIELD VERIFIED)
- F.F. ELEV. = 810.70 PROPOSED FINISH FLOOR ELEVATION
- PROPOSED DRAINAGE SWALE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- SPRING BREAK GRADE BREAK

**SITE DIMENSION NOTES**

- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC AND PROVIDING ALL NECESSARY FLAGMAN, BARRELS, SIGNAGE, ETC. DURING CONSTRUCTION. ALL APPLICABLE M.U.T.C.D. STANDARDS SHALL GOVERN THIS WORK.
- CONTRACTOR SHALL COORDINATE WITH APPLICABLE UTILITY COMPANY'S AND BUILDING PLANS FOR WATER, CABLE, ELECTRIC, GAS, AND TELEPHONE CONNECTION SERVICE POINTS.
- EXISTING UTILITY SIZE AND MATERIAL INFORMATION SHOWN ON THESE PLANS ARE PER THE BEST GRAPHICAL AND VISIBLE INFORMATION AVAILABLE. CONFLICTS MAY EXIST AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL SIZES AND MATERIAL INFORMATION PROVIDED. IF ACTUAL CONDITIONS DIFFER FROM THAT INFORMATION SHOWN ON THE PLANS, THE CONTRACTOR SHALL, PRIOR TO THE INSTALLATION OF ANY PROPOSED INFRASTRUCTURE, NOTIFY THE DESIGN ENGINEER IMMEDIATELY.
- CONTRACTOR SHALL NOTIFY THE ENGINEER IF THE PROOF ROLL OF SUBGRADE FAILS TO DETERMINE IF LIME STABILIZATION OF SUBGRADE IS NECESSARY.
- CONTRACTOR TO COORDINATE WITH ARCHITECT/MEP PLANS FOR GENERATOR PAD DETAILS AND SPECIFICATIONS.
- BUILDING CONSTRUCTION AND APPLICABLE ARCHITECTURAL PLANS SHALL BE REVIEWED AND PERMITTED SEPARATELY THROUGH THE CITY OF FRANKLIN. CONTRACTOR SHALL COORDINATE WITH OWNER AND ARCHITECT FOR CITY OF FRANKLIN BUILDING/ARCHITECTURAL PLAN REVIEW.

**GRADING NOTES**

- CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS IN FINAL GRADING OF SITE. CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT TO DETERMINE PROPER FOUNDATION EXPOSURE. HOWEVER, IN NO INSTANCE SHALL DRAINAGE TOWARDS THE BUILDING FOUNDATION BE ALLOWED.



**4 SIGNAGE DETAILS**  
 NOT TO SCALE

**PARKING ANALYSIS**

**LAND USE - INSTITUTIONAL (IN)**

**REQUIRED PARKING RATIOS:**  
 1 SPACE / EMPLOYEE (LARGEST SHIFT)  
 1 SPACE / 250 SQ. FT. OF CONFERENCE ROOM AREA (PER PLANNING DEPT.)

**SITE INFORMATION:**  
 MAX. EMPLOYEES PER SHIFT = 2 EMPLOYEES  
 CONFERENCE ROOM AREA = 2700 SQ. FT.

**TOTAL PARKING REQUIRED = 13 SPACES**

STANDARD PARKING SPACES = 29 SPACES  
 HANDICAP ACCESSIBLE SPACES = 2 SPACES  
**TOTAL PROPOSED PARKING SPACES = 31 SPACES**

CALL 2 WORKING DAYS BEFORE YOU DIG  
**1-800-382-5544 or 811**  
 PER INDIANA STATE LAW (IS-48-1991) IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

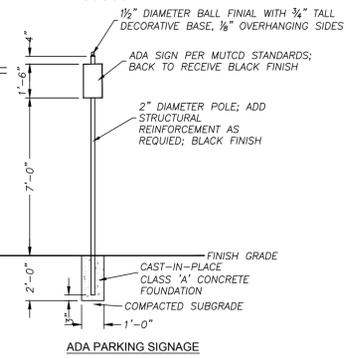
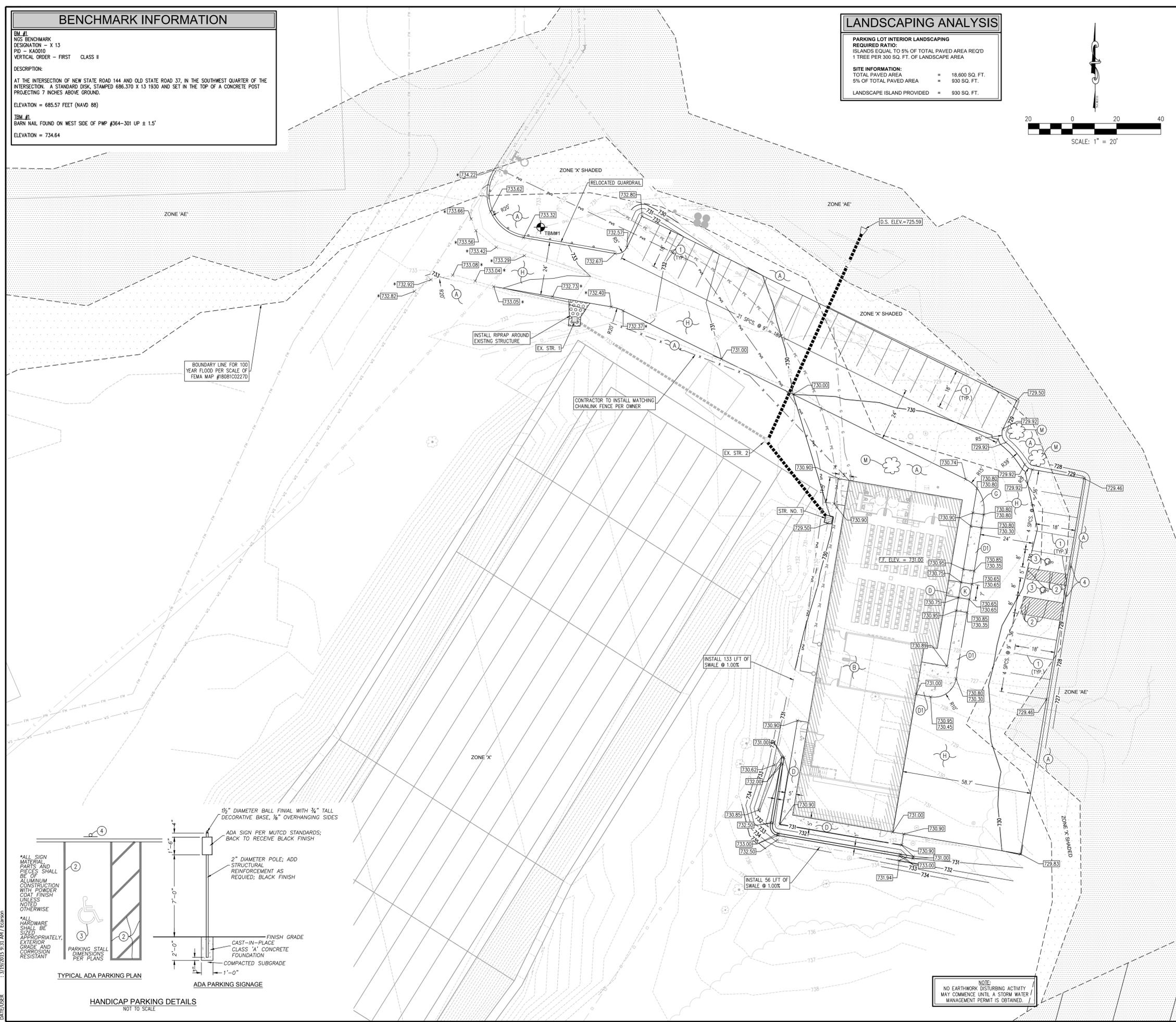
**JOHNSON COUNTY NEW TRAINING FACILITY**

DATE: March 19, 2015  
 DRAWN BY: JMS  
 CHECKED BY: TEN  
 APPROVED BY: GJI

NO. DATE REVISIONS

1 2 3 4 5 6 7 8 9

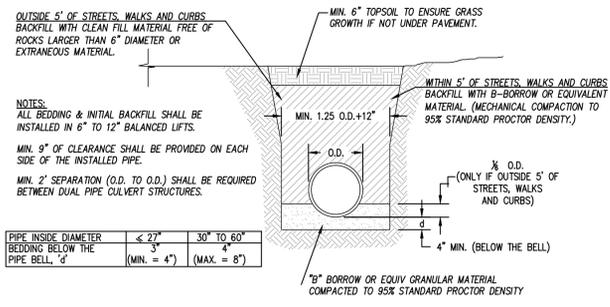
SHEET 300



**TYPICAL ADA PARKING PLAN**  
**HANDICAP PARKING DETAILS**  
 NOT TO SCALE

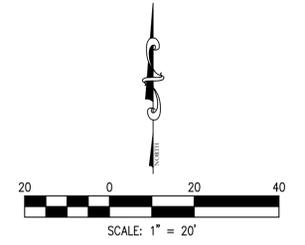
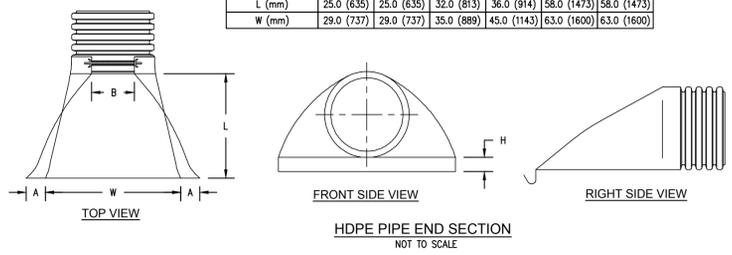
NOTE:  
 NO EARTHWORK DISTURBING ACTIVITY  
 MAY COMMENCE UNTIL A STORM WATER  
 MANAGEMENT PERMIT IS OBTAINED.

DIRECTORY PATH : R:\Active\Johnson County\New Training Facility\CAD\Plans  
 DATE/USER : 3/19/2015 9:31 AM / Egarson



**PIPE DIAMETER, in (mm)**

Diameter (mm)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)
A (mm)	6.5 (165)	6.5 (165)	7.5 (191)	7.5 (191)	7.5 (191)	7.5 (191)
B (mm)	10.0 (254)	10.0 (254)	15.0 (381)	18.0 (475)	22.0 (559)	25.0 (635)
H (mm)	6.5 (165)	6.5 (165)	6.5 (165)	6.5 (165)	8.6 (218)	8.6 (218)
L (mm)	25.0 (635)	25.0 (635)	32.0 (813)	36.0 (914)	58.0 (1473)	58.0 (1473)
W (mm)	29.0 (737)	29.0 (737)	35.0 (889)	45.0 (1143)	63.0 (1600)	63.0 (1600)



**PROPOSED LEGEND**

---	PROPERTY LINE
---	SECTION LINE
---	PHASE LINE
---	SETBACK LINE
---	FENCE LINE
---	DITCH LINE
---	SANITARY SEWER LATERAL WITH GRINDER PUMP STATION
---	SANITARY SEWER LATERAL WITH CLEANOUT
---	STORM SEWER WITH MANHOLE & END SECTION
---	ELECTRIC LINE
---	WATER LINE
---	WATER SERVICE LINE
---	GAS LINE
---	STORM INLETS
---	AQUA SWRL
---	WATER TEE
---	45° BEND
---	11.25° BEND
---	TAPPING SLEEVE
---	WATER VALVE
---	FIRE HYDRANT
---	WATER VAULT
---	STORTZ FDC
---	ELECTRIC TRANSFORMER
---	GENERATOR
---	GREASE TRAP
---	LIGHT POLE
---	YARD LIGHT
---	SIGN

**STORM STRUCTURE DATA TABLE**

STR. NO. 1	EX. STR. NO. 1
INSTALL INLET TYPE "E" WITH NEENAH R-4215-C CASTING OR APPROVED EQUAL AND 45 LFT OF 12" HDPE PIPE @ 0.27% RIM EL.=729.50 INV. OUT (12"-NW)=727.17	RIM EL.=730.86 INV. OUT (12"-SE)=728.01
EX. STR. NO. 2	
INSTALL 105 LFT OF 15" HDPE PIPE @ 1.25% AND (1) PLASTIC END SECTION RIM EL.=730.38 INV. IN (12"-SE)=727.05 INV. IN (12"-NW)=726.93 INV. OUT (18"-NE)=726.90 D.S. ELEV.=725.59	

- UTILITIES NOTES**
1. WATER MAIN INSTALLATION SHALL BE IN ACCORDANCE WITH THE INDIANA AMERICAN WATER UTILITY STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL COORDINATE WITH UTILITY FOR CONNECTION AND TESTING PROCEDURES AND REQUIREMENTS. ALL WATER MAIN SHALL BE INSTALLED WITH A MINIMUM 56 INCHES OF COVER FROM FINISH GRADE. MAIN SHALL BE DEFLECTED AS REQUIRED TO MAINTAIN MINIMUM SEPARATION REQUIREMENTS AT ALL UTILITY CROSSINGS.
  2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC AND PROVIDING ALL NECESSARY FLAGMAN, BARRELS, SIGNAGE, ETC. DURING CONSTRUCTION. ALL APPLICABLE M.U.T.C.D. STANDARDS SHALL GOVERN THIS WORK.
  3. CONTRACTOR SHALL COORDINATE WITH APPLICABLE UTILITY COMPANIES AND BUILDING PLANS FOR WATER, CABLE, ELECTRIC, AND TELEPHONE CONNECTION SERVICE POINTS.
  4. CONTRACTOR TO COORDINATE WITH DUKE ENERGY FOR NECESSARY ELECTRIC SERVICE REQUIREMENTS AND SPECIFICATIONS, AND BUILDING PLANS FOR ALL SERVICE POINTS AT BUILDING.
  5. EXISTING UTILITY SIZE AND MATERIAL INFORMATION SHOWN ON THESE PLANS ARE PER THE BEST GRAPHICAL AND VISIBLE INFORMATION AVAILABLE. CONFLICTS MAY EXIST AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL SIZING AND MATERIAL INFORMATION PROVIDED. IF ACTUAL CONDITIONS DIFFER FROM THAT INFORMATION SHOWN ON THE PLANS, THE CONTRACTOR SHALL PRIOR TO THE INSTALLATION OF ANY PROPOSED INFRASTRUCTURE, NOTIFY THE DESIGN ENGINEER IMMEDIATELY.
  6. PRIVATE HYDRANTS SHALL BE PAINTED RED WITH THE TOP CAP PAINTED FOR WATERFLOW:
    - BLUE = 1500 GPM
    - GREEN = 1000-1499 GPM
    - ORANGE = 500-999 GPM
  7. CONTRACTOR TO COORDINATE WITH JOHNSON COUNTY MAINTENANCE DEPARTMENT FOR ACCESS TO THE EXISTING SANITARY SEWER LIFT STATION, CONNECTION LOCATION, AND INVERT ELEVATIONS.
  8. ALL WATER MAIN WITHIN PUBLIC RIGHT-OF-WAY SHALL BE DUCTILE IRON IN ACCORDANCE WITH INDIANA AMERICAN WATER UTILITY REQUIREMENTS. ALL PVC FOR WATER MAIN SHALL BE C-900.
  9. CONTRACTOR SHALL NOTIFY INDIANA AMERICAN WATER PRIOR TO INSTALLING DOMESTIC AND FIRE SERVICE TAPS OFF EXISTING MAIN. ALL TAPS SHALL BE COMPLETE BY AN INDIANA AMERICAN WATER COMPANY CONTRACTOR.
  10. CONTRACTOR TO COORDINATE WITH OWNER ON LOCATION OF AC UNITS & GENERATOR.

**BENCHMARK INFORMATION**

BM #1  
NCS BENCHMARK  
DESIGNATION - X 13  
PID - KA0010  
VERTICAL ORDER - FIRST CLASS II

DESCRIPTION:  
AT THE INTERSECTION OF NEW STATE ROAD 144 AND OLD STATE ROAD 37, IN THE SOUTHWEST QUARTER OF THE INTERSECTION. A STANDARD DISK, STAMPED 686.370 X 13 1930 AND SET IN THE TOP OF A CONCRETE POST PROJECTING 7 INCHES ABOVE GROUND.

ELEVATION = 685.57 FEET (NAVD 88)

BM #1  
BARN NAIL FOUND ON WEST SIDE OF PMP #364-301 UP ± 1.5'  
ELEVATION = 734.64

**UTILITIES**

Note: Listed below are the Indiana Underground Plant Protection Services Contacts; Others not listed may exist.

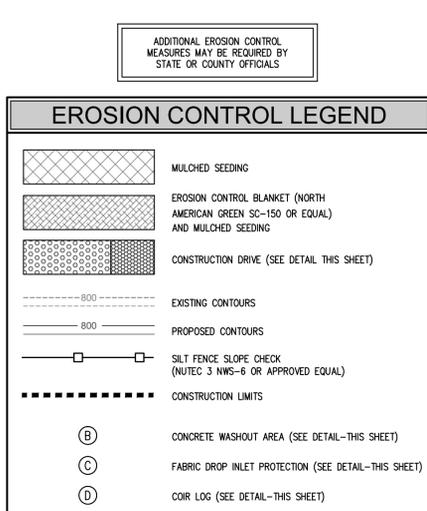
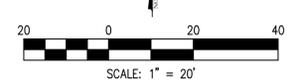
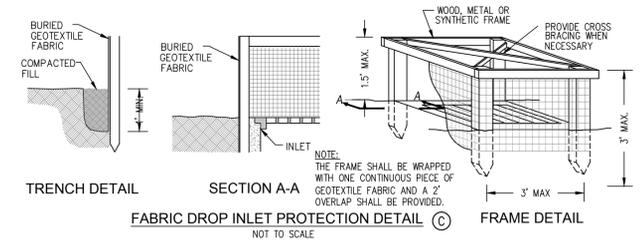
- |   |  |  |   |
|---|--|--|---|
| <p><b>SEWER</b><br/>CITY OF FRANKLIN<br/>796 S. STATE STREET<br/>FRANKLIN, IN 46131<br/>PHONE: (317) 736-3640<br/>FAX: (317) 736-6709<br/>CONTACT: ROCK LITTLETON</p> | <p><b>WATER</b><br/>INDIANA-AMERICAN WATER CO.<br/>100 S. PARK BLVD.<br/>GREENWOOD, IN 46143<br/>PHONE: (317) 881-0270 EXT. 4<br/>FAX: (317) 887-3054<br/>CONTACT: RON BOLLARD</p> | <p><b>ELECTRIC</b><br/>DUKE ENERGY<br/>2915 N. MORTON STREET<br/>FRANKLIN, IN 46131<br/>PHONE: (317) 736-2017<br/>FAX: (317) 736-2028<br/>CONTACT: COREY HAMBLEN</p>                             | <p><b>GAS</b><br/>VECTREN<br/>600 INDUSTRIAL DRIVE<br/>FRANKLIN, IN 46131<br/>PHONE: (317) 736-2965<br/>CONTACT: DAYNA RAUWERDINK</p> |
| <p><b>JOHNSON COUNTY MAINTENANCE DEPARTMENT</b><br/>56 WEST COURT STREET<br/>FRANKLIN, IN 46131<br/>PHONE: (317) 979-3006<br/>CONTACT: JASON MILLER</p>               | <p><b>TELEPHONE/CABLE</b><br/>COMCAST COMMUNICATIONS<br/>1600 W. VERNAL Pkwy.<br/>BLOOMINGTON, IN 47404<br/>PHONE: (812) 822-3267<br/>CONTACT: STEVE MCARTOR</p>                   | <p><b>FIRE DEPARTMENT</b><br/>CITY OF FRANKLIN FIRE DEPARTMENT<br/>1800 THORNSBURG LANE<br/>FRANKLIN, IN 46131<br/>PHONE: (317) 736-3650<br/>FAX: (317) 736-8967<br/>CONTACT: BRYNE PURSFULL</p> |   |

NOTE: The underground utilities shown have been located from field survey information and existing drawings. The surveyor makes no guarantees that the underground utilities comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although the surveyor does certify that they are located as accurately as possible from information available. The surveyor has not physically located the underground utilities.

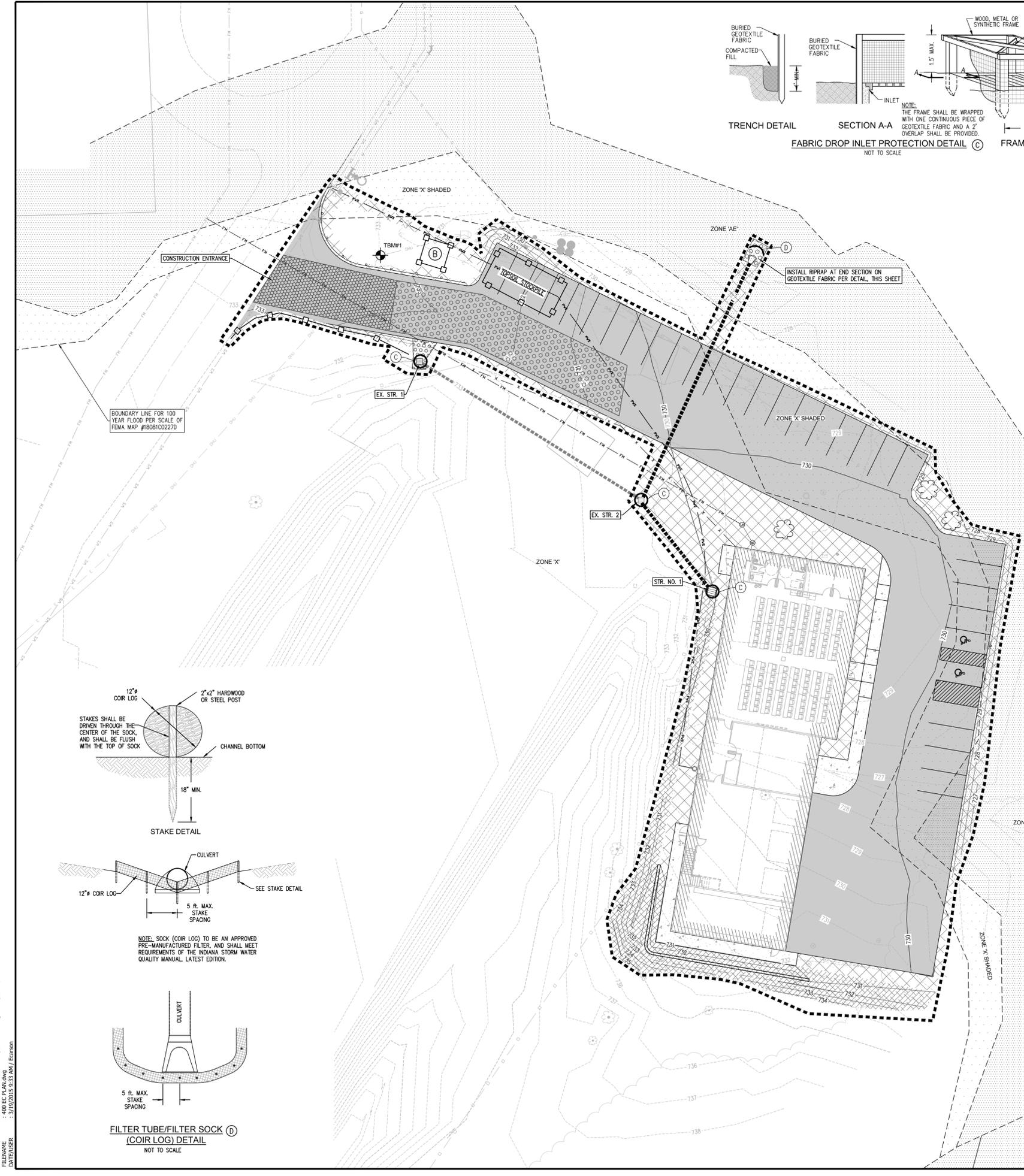




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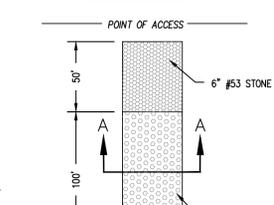
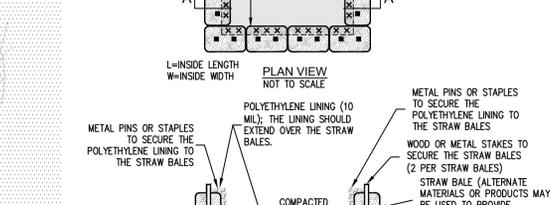
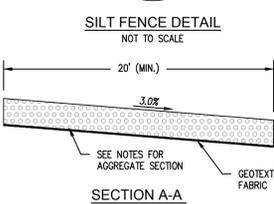
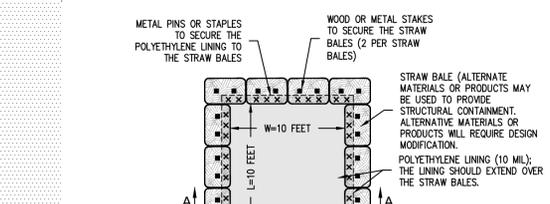
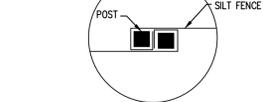
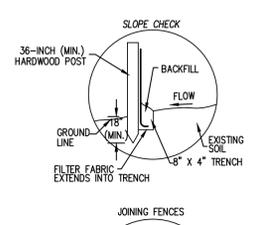
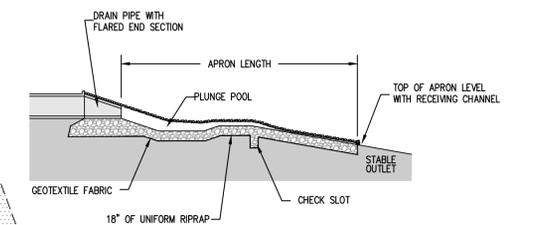


- EROSION CONTROL NOTES**
- ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY STATE, COUNTY, OR LOCAL OFFICIALS.
  - ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED IN THE FIELD BY THE INSPECTOR.
  - THERE SHALL BE NO DIRT, DEBRIS, OR STORAGE OF MATERIALS WITHIN THE IDENTIFIED PROPOSED PARKING AREAS.
  - CONSTRUCTION STAGING AREA (TO BE DETERMINED BY CONTRACTOR) SHALL INCLUDE THE NOI POSTING, PORT-O-LETS, TRASH CONTAINERS, AND FUELING TANKS. CONTRACTOR SHALL NOT LOCATE STAGING AREA WITHIN PROPOSED PARKING AREA.
  - A TRAINED INDIVIDUAL MUST PERFORM AN INSPECTION ONCE A WEEK AND AFTER EVERY 1/2\"/>

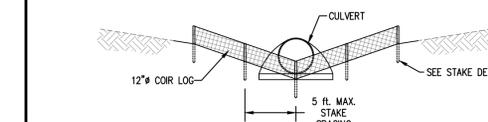
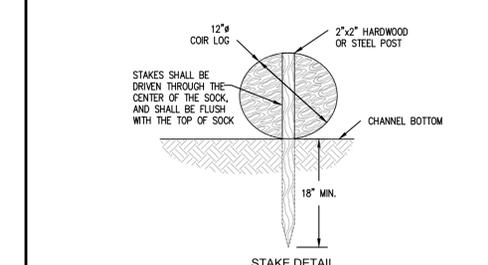


**18\"/>

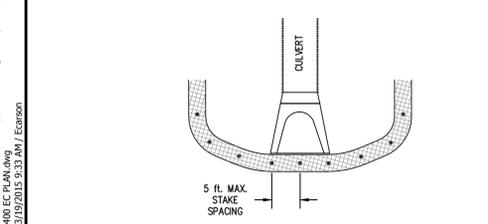
PIPE SIZE	APRON LENGTH	APRON WIDTH	APRON LENGTH
8 in.	2-3 ft.	3 in.	5-7 ft.
12 in.	3-4 ft.	4 in.	6-12 ft.
18 in.	4-5 ft.	5 in.	6-18 ft.
24 in.	5-6 ft.	6 in.	12-22 ft.
30 in.	6-8 ft.	8-10 in.	14-28 ft.
36 in.	10-12 ft.	14 in.	16-32 ft.



EXISTING UTILITY SIZE AND MATERIAL INFORMATION SHOWN ON THESE PLANS ARE PER THE BEST GRAPHICAL AND VISUAL INFORMATION AVAILABLE. CONFLICTS MAY EXIST AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL SIZING AND MATERIAL INFORMATION PROVIDED. IF ACTUAL CONDITIONS DIFFER FROM THAT INFORMATION SHOWN ON THE PLANS, THE CONTRACTOR SHALL, PRIOR TO THE INSTALLATION OF ANY PROPOSED INFRASTRUCTURE, NOTIFY THE DESIGN ENGINEER IMMEDIATELY.



NOTE: SOCK (COIR LOG) TO BE AN APPROVED PRE-MANUFACTURED FILTER, AND SHALL MEET REQUIREMENTS OF THE INDIANA STORM WATER QUALITY MANUAL, LATEST EDITION.



DIRECTORY PATH : R:\Active\Johnson County\New Training Facility\CAD\Plans  
 DATE/USER : 3/19/2015 9:33 AM / Egarson

EROSION CONTROL PLAN INDEX

PLAN ELEMENTS

- A2 11 BY 17 INCH PLAT
A3 PROJECT NARRATIVE
A4 WONYMAY MAP
A5 LEGAL DESCRIPTION
A6 LOCATION OF ALL LOTS AND PROPOSED SITE IMPROVEMENTS
A7 HYDROLOGIC UNIT CODE
A8 STATE AND/OR FEDERAL WATER QUALITY PERMITS
A9 STORMWATER DISCHARGE
A10 WETLANDS, LAKES AND WATER COURSES
A11 RECEIVING WATERS
A12 POTENTIAL DISCHARGES TO GROUNDWATER
A13 100 YEAR FLOOD PLAINS, FLOODWAYS AND FLOODWAY FRINGES
A14 POST-CONSTRUCTION PEAK DISCHARGE
A15 ADJACENT LANDUSE
A16 DISTURBED AREAS
A17 EXISTING VEGETATIVE COVER
A18 SOILS MAP AND DESCRIPTIONS
A19 PROPOSED STORMWATER SYSTEMS
A20 OFF-SITE CONSTRUCTION ACTIVITIES
A21 SOIL STOCKPILES, BORROW/DISPOSAL AREAS
A22 EXISTING SITE TOPOGRAPHY
A23 PROPOSED SITE TOPOGRAPHY
A24 PROPOSED ONE-FOOT CONTOURS

MONITORING AND MAINTENANCE GUIDELINES

GRAVEL CONSTRUCTION DRIVE AND PARKING AREA

- A. Inspect daily and after each storm event. Immediately remove mud and sediment tracked or washed onto public roads.
B. Top dress with clean aggregate as needed. Reshape pad as needed for drainage and erosion control.
C. Flushing should only be used if the water can be conveyed into a sediment trap or basin.
D. Blowing should only be used if the water can be conveyed into a sediment trap or basin.

TOPSOIL

- A. Inspect daily until vegetation is established.
B. Check for erosion or damage of newly spread topsoil and repair immediately.

TEMPORARY AND PERMANENT SEEDINGS

- A. Inspect seeding within 24 hours of each rain event and at least once every seven (7) calendar days until vegetation is established.
B. Check for erosion or movement of mulch and repair immediately.
C. Plan to add fertilizer the following growing season according to soil test recommendations.
D. Repair damaged, bare, or sparse areas by filling any gullies, re-fertilizing, over or re-seeding, and mulching.
E. If plant cover is sparse or patchy, review the plant materials chosen, soil fertility, moisture condition, and mulching; repair the affected area either by over-seeding or by re-seeding and mulching after re-preparing the seed bed.
F. If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems.
G. If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.
H. Reference INDOT Specification 621.05

MULCHING

- A. Inspect within 24 hours of each rain event to check for movement of mulch or for erosion.
B. If washout, breakage, or erosion is present, repair damage areas, re-seed, apply new mulch, and anchor mulch in place.
C. Continue inspections until vegetation is firmly established.
D. Reference INDOT Specification 621.05

SILT FENCE

- A. Inspect within 24 hours of each rain event and at least once every seven (7) calendar days.
B. If fence fabric tears, starts to decompose, or in any way becomes ineffective, replace the affected portion immediately.
C. Remove deposited sediment when it reaches half the height of the fence at its lowest point or is causing the fabric to bulge.
D. Take care to avoid undermining the fence during clean out.
E. After the contributing drainage area has been stabilized, remove the fence and sediment deposits, bring the disturbed area to grade and stabilize.

CONCRETE WASHOUT

- A. Concrete washout area shall be installed prior to any concrete placement onsite.
B. Signs shall be placed at the construction entrance, at the washout area, and elsewhere as necessary to clearly indicate the location of the concrete washout area to operators of concrete trucks and pumps.
C. The concrete washout area shall be repaired or enlarged or cleaned out as necessary to maintain capacity for washed concrete.
D. At the end of construction, all concrete shall be removed from the site and disposed of at an approved waste site.
E. When the concrete washout area is removed, the disturbed area shall be seeded and mulched or otherwise stabilized in a manner approved by the inspector.

CONSTRUCTION SEQUENCE & SCHEDULE OF EROSION CONTROL IMPLEMENTATION

- 1. Schedule a pre-construction meeting with Franklin MS4 Coordinator 48 hours prior to start of earthwork (317-736-3640).
2. Install all fence around the perimeter of the site per the Erosion Control Plan (Sheet 600) before any land disturbing activity begins.
3. Install temporary construction entrance and concrete washout area in accordance with the details on the Erosion Control Plan and Details (Sheets 600 and 601). The construction entrance shall remain in place until the completion of all earthwork operations. The concrete washout area shall remain in place until the completion of all concrete placement.
4. Strip topsoil and stockpile as shown on the Erosion Control Plan (Sheet 600).
5. Begin earthwork cut/fill operations and rough grading. Disturbed areas should be seeded immediately following rough grading. Areas that will not be disturbed again should be permanently seeded. No unvegetated areas should be exposed for more than seven days.
6. Construct utilities, buildings, parking, sidewalks, and other site improvements. Remove concrete washout area upon completion of concrete placement.
7. Remove and dispose of all trash from the site. Remove accumulated sediment from throughout the site and incorporate into topsoil stockpile.
8. Final grade site utilizing stockpiled topsoil and install permanent surface stabilization features including seeding, sod, and plantings.
9. Final paving operations. All temporary erosion control measures, except those specified for removal in the sequences above, shall remain in place until vegetation is secure.

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

- 1. All Erosion Control practices shall be in accordance with the latest edition of the INDIANA STORM WATER QUALITY MANUAL.
2. The Erosion Control measures included in this plan shall be installed prior to initial land disturbance activities. Sediment shall be prevented from discharging from the project site by installing and maintaining silt fence, straw bales, sediment basins, etc. as shown on this plan. If shown on this plan, energy-dissipation devices or Erosion Control at the outfall of the storm sewer system shall be installed at the time of the construction of the outfall.
3. All on-site storm drain inlets shall be protected against sedimentation with silt sock inlet filters, filter fabric, or equivalent barriers as shown on this plan.
4. Except as prevented by inclement weather conditions or other circumstances beyond the control of the contractor/developer appropriate Erosion Control practices will be initiated within (7) seven days of the last land disturbing activity at the site. The site shall be stabilized by seeding, sodding, mulching, covering, or by other equivalent Erosion Control measures.
5. This Erosion Control plan shall be implemented on all disturbed areas within the construction site. All measures involving Erosion Control practices shall be installed under the guidance of a qualified person experienced in Erosion Control and following the plans and specifications included herein.
6. During the period of construction activity, all sediment basins and other Erosion Control measures shall be maintained by the contractor. At the completion of construction, the contractor shall coordinate the transfer of required maintenance responsibilities with the owner.
7. Public or private roadways shall be kept cleared of accumulated sediment. Bulk clearing of accumulated sediment shall not include flushing the area with water. Cleared sediment shall be returned to the point of likely origin or other suitable location.
8. The contractor shall control wastes, garbage, debris, wastewater, and other substances on the site in such a way that they shall not be transported from the site by the action of winds, storm water runoff, or other forces. Proper disposal or management of all wastes and unused building materials appropriate to the nature of the waste or material is required.
9. Additional Erosion Control measures may be required by state or county agencies.

ADDITIONAL MATERIAL HANDLING AND SPILL PREVENTION PLAN

Purpose

- 1. To protect the health and safety of those working on the site as well as the environment.
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.
3. 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 trucks 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 of the discovery of the spill.
4. All materials used in the course of a cleanup will be disposed in a manner approved by Indiana Department of Environmental Management.
5. Spill water to flush spilled material will not be permitted unless authorized by a state, federal, or local agency. Trops can be used to cover spilled material during rain events.
6. Spill Response
Minor - Small spills that typically involve oil, gasoline, paint, hydraulic fluid etc. Minor spills can be controlled by the first responder with the help of the spill kit.
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.

- 1. Inspect within 24 hours of each rain event and at least once every seven (7) calendar days.
2. If washout, breakage, or erosion is present, repair damage areas, re-seed, apply new mulch, and anchor mulch in place.
3. Continue inspections until vegetation is firmly established.
4. Reference INDOT Specification 621.05

- 1. Inspect within 24 hours of each rain event and at least once every seven (7) calendar days.
2. If washout, breakage, or erosion is present, repair damage areas, re-seed, apply new mulch, and anchor mulch in place.
3. Continue inspections until vegetation is firmly established.
4. Reference INDOT Specification 621.05

- 1. Schedule a pre-construction meeting with Franklin MS4 Coordinator 48 hours prior to start of earthwork (317-736-3640).
2. Install all fence around the perimeter of the site per the Erosion Control Plan (Sheet 600) before any land disturbing activity begins.
3. Install temporary construction entrance and concrete washout area in accordance with the details on the Erosion Control Plan and Details (Sheets 600 and 601). The construction entrance shall remain in place until the completion of all earthwork operations. The concrete washout area shall remain in place until the completion of all concrete placement.
4. Strip topsoil and stockpile as shown on the Erosion Control Plan (Sheet 600).
5. Begin earthwork cut/fill operations and rough grading. Disturbed areas should be seeded immediately following rough grading. Areas that will not be disturbed again should be permanently seeded. No unvegetated areas should be exposed for more than seven days.
6. Construct utilities, buildings, parking, sidewalks, and other site improvements. Remove concrete washout area upon completion of concrete placement.
7. Remove and dispose of all trash from the site. Remove accumulated sediment from throughout the site and incorporate into topsoil stockpile.
8. Final grade site utilizing stockpiled topsoil and install permanent surface stabilization features including seeding, sod, and plantings.
9. Final paving operations. All temporary erosion control measures, except those specified for removal in the sequences above, shall remain in place until vegetation is secure.

- 1. All Erosion Control practices shall be in accordance with the latest edition of the INDIANA STORM WATER QUALITY MANUAL.
2. The Erosion Control measures included in this plan shall be installed prior to initial land disturbance activities. Sediment shall be prevented from discharging from the project site by installing and maintaining silt fence, straw bales, sediment basins, etc. as shown on this plan. If shown on this plan, energy-dissipation devices or Erosion Control at the outfall of the storm sewer system shall be installed at the time of the construction of the outfall.
3. All on-site storm drain inlets shall be protected against sedimentation with silt sock inlet filters, filter fabric, or equivalent barriers as shown on this plan.
4. Except as prevented by inclement weather conditions or other circumstances beyond the control of the contractor/developer appropriate Erosion Control practices will be initiated within (7) seven days of the last land disturbing activity at the site. The site shall be stabilized by seeding, sodding, mulching, covering, or by other equivalent Erosion Control measures.
5. This Erosion Control plan shall be implemented on all disturbed areas within the construction site. All measures involving Erosion Control practices shall be installed under the guidance of a qualified person experienced in Erosion Control and following the plans and specifications included herein.
6. During the period of construction activity, all sediment basins and other Erosion Control measures shall be maintained by the contractor. At the completion of construction, the contractor shall coordinate the transfer of required maintenance responsibilities with the owner.
7. Public or private roadways shall be kept cleared of accumulated sediment. Bulk clearing of accumulated sediment shall not include flushing the area with water. Cleared sediment shall be returned to the point of likely origin or other suitable location.
8. The contractor shall control wastes, garbage, debris, wastewater, and other substances on the site in such a way that they shall not be transported from the site by the action of winds, storm water runoff, or other forces. Proper disposal or management of all wastes and unused building materials appropriate to the nature of the waste or material is required.
9. Additional Erosion Control measures may be required by state or county agencies.

The following procedures and practices will help prevent unnecessary spills

Vehicle and Equipment Fueling

- 1. Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater. This can be accomplished by using offsite facilities, fueling in designated areas only, enclosing or covering storage tanks, implementing spill controls, and training employees and subcontractors in proper fueling procedures.
2. Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling.

Limitations

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

Implementation

- 1. Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate fueling area at a site.
2. Discourage "topping-off" of fuel tanks.
3. Absorbent spill cleanup materials and spill kits should be available in fueling areas and on fueling trucks, and should be disposed of properly after use.
4. Drip pans or absorbent pads should be used during vehicle and equipment fueling, unless the fueling is performed over an impervious surface in a dedicated fueling area.
5. Use absorbent materials on small spills. Do not hose down or bury the spill. Remove the absorbent materials promptly and dispose of properly.
6. Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas.
7. Train employees and subcontractors in proper fueling and cleanup procedures.
8. Dedicated fueling areas should be protected from stormwater run-on and runoff, and should be located at least 50 feet away from the downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
9. Protect fueling areas with berms and dikes to prevent run-on, runoff, and to contain spills.
10. Nozzles used in vehicle and equipment fueling should be equipped with an automatic shutoff to control drips. Fueling operations should not be left unattended.
11. Fueling operations that are moving clean water through a site are not required to have a pumping bag or similar device at the outlet. The point of discharge should be protected to prevent soil erosion.

Inspection and Maintenance

- 1. 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.
2. Keep simple supplies of spill cleanup materials onsite.
3. Immediately clean up spills and properly dispose of contaminated soils.

Solid Waste Management

- 1. Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction wastes by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.
2. Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction.
3. Packaging materials including wood, paper, and plastic.
4. Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces, and masonry products.
5. Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes.
6. Construction waste including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts. Styrofoam and other materials sent transport and package construction materials.

Suitable Applications

- 1. This BMP is suitable for construction sites where the following wastes are generated or stored:

- 1. Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction.
2. Packaging materials including wood, paper, and plastic.
3. Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces, and masonry products.
4. Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes.
5. Construction waste including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts. Styrofoam and other materials sent transport and package construction materials.

Implementation

- 1. The following steps will help keep a clean site and reduce stormwater pollution:
2. Select designated waste collection areas onsite.
3. Inform trash-hauling contractors that you will accept only watertight dumpsters for on-site use.
4. Inspect dumpsters for leaks and repair any dumpster that is not watertight.
5. Provide an adequate number of containers with lids or covers that can be placed over trash and keep rain out or to prevent loss of wastes when it is windy.
6. Plan for additional containers and more frequent pickup during the demolition phase of construction.
7. Collect site trash daily, especially during rainy and windy conditions.
8. Remove this solid waste promptly since erosion and sediment control devices tend to collect litter.
9. Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acid, pesticides, adhesives, curing compounds) are not disposed of in dumpsters designed for construction debris.
10. Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor.
11. Arrange for regular waste collection before containers overflow.
12. Clean up immediately if a container does spill.
13. Make sure that concrete trucks are cleaned, removed, and disposed of only at authorized disposal areas. Solid waste storage areas should be located in areas prone to flooding or ponding.
14. Locate solid waste dumpster a minimum of 50' away from storm water inlets or other drainage facilities.
15. Locate dumpster on stone or earth to minimize the potential for spills or leaks to drain immediately into a drainage facility.

Inspection and Maintenance

- 1. Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly to verify continued BMP implementation.
2. Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.
3. Inspect construction waste areas regularly.
4. Arrange for regular waste collection.

Concrete Washout

- 1. The following steps will help reduce stormwater pollution from concrete wastes:
2. Discuss best concrete management techniques described in the BMP (such as handling of concrete waste and washout) with the ready-mix concrete supplier before any deliveries are made.
3. Incorporate requirements for concrete waste management into material supplier and subcontractors' agreements.
4. Store dry and wet materials under cover, away from drainage areas.
5. Avoid mixing excess amounts of fresh concrete.
6. Perform washout of concrete trucks offsite or in designated areas only.
7. Do not wash concrete trucks into storm drains open ditches, streets, or streams.
8. Do not allow excess concrete to be dumped onsite, except in designated areas.

For onsite washout:

- 1. Locate washout areas at least 50 feet from storm drains, open ditches, or water bodies.
2. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
3. Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.
4. Avoid creating runoff by drinking water to a bermed or level area when washing concrete to remove fine particles and expose the aggregate.
5. Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile or dispose in the trash.

Vehicle Maintenance Areas

- 1. Purpose - To prevent spills during the normal maintenance of construction machinery.
2. Implementation - Where and when feasible, maintenance shall be performed offsite in covered facility with an impervious floor.
3. Use a dedicated site for machinery maintenance.
4. Site the maintenance area at least 50 feet from storm water inlets or water bodies.
5. Maintain clean up materials close at hand. Utilize drip pans and absorbent pads to prevent oils from reaching the soil surface.
6. Inspect equipment daily for leaks or worn hoses. Repair or replace to prevent onsite spills.
7. Properly dispose of all fluids removed or spilled from machinery.

Fluids, paints, solvents and other chemicals storage and use

- 1. Purpose - To prevent spills during the use and storage of the materials.
2. Implementation - Store materials in these original containers.
3. Maintain safety data sheets on all products.
4. Store materials in a weather proof/vandal resistant locker or building.
5. Keep materials away from flammable sources.
6. Provide and read instructions for the proper use and storage of all materials.
7. For bulk material stored onsite, provide dike or double containment in case of leaks or failures.
8. No washout of solvent from paint supplies should be done near or into a storm water inlet or other drainage facility.
9. Disposal of sediment laden water.

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

- 1. The sediment and any other pollutant from all pumping or dewatering operations that discharge into storm sewers, waterways, drainage ways or water bodies must be removed from the water before it's discharged.
2. A suitable practice is needed at the discharge to allow the suspended solids to be removed from the water column. Slow moving water and time are needed components for an effective practice. Mechanical filters and chemical flocculants can do an excellent job of removing the fine materials.
3. Sediment removal pumping bags may be used at the outlet of a pump. The bags must be sized appropriately for the amount of flow. The practice needs to be installed on erosion resistant surfaces. The outlet of the pumping bag must be erosion resistant to prevent additional sedimentation.
4. Pumping operations that are moving clean water through a site are not required to have a pumping bag or similar device at the outlet. The point of discharge should be protected to prevent soil erosion.

Implementation

- 1. The sediment and any other pollutant from all pumping or dewatering operations that discharge into storm sewers, waterways, drainage ways or water bodies must be removed from the water before it's discharged.
2. A suitable practice is needed at the discharge to allow the suspended solids to be removed from the water column. Slow moving water and time are needed components for an effective practice. Mechanical filters and chemical flocculants can do an excellent job of removing the fine materials.
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4. Pumping operations that are moving clean water through a site are not required to have a pumping bag or similar device at the outlet. The point of discharge should be protected to prevent soil erosion.

Ranking

- 1. RANKING: 1 - GOOD, 2 - MEDIUM, 3 - NOT TOLERANT

SALT TOLERANCE

- 1. SALT TOLERANCE (TO BOTH SOIL SALTS AND SPRAY): 1 - TOLERANT, 2 - MEDIUM TOLERANCE, 3 - SLIGHT TOLERANCE

SEEDING PREPARATION

APPLY LIME TO RAISE THE pH TO THE LEVEL NEEDED FOR SPECIES BEING SEED. APPLY 23 LBS OF 15-15-15 ANALYSIS FERTILIZER (OR EQUIVALENTS 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 SLOPE AS MUCH AS POSSIBLE.

SEEDING

FERTILIZER AND LIME SHALL MEET REQUIREMENTS OF INDOT STANDARD SPECIFICATIONS 1995.

SEEDING

SELECT A SEED MIXTURE BASED ON PROJECTED USE OF THE AREA WHILE CONSIDERING BEST SEEDING DATES.

TEMPORARY SEEDING DATES

(FOR BEST SEEDING RESULTS, SEE INDOT STANDARD SPECIFICATIONS 1995)

PERMANENT SEED MIXTURES

APPLY LIME TO RAISE THE pH TO THE LEVEL NEEDED FOR SPECIES BEING SEED. APPLY 23 LBS OF 15-15-15 ANALYSIS FERTILIZER (OR EQUIVALENTS 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 SLOPE AS MUCH AS POSSIBLE.

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SEEDING

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TEMPORARY SEEDING DATES

(FOR BEST SEEDING RESULTS, SEE INDOT STANDARD SPECIFICATIONS 1995)

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SEEDING

FERTILIZER AND LIME SHALL MEET REQUIREMENTS OF INDOT STANDARD SPECIFICATIONS 1995.

SEEDING

SELECT A SEED MIXTURE BASED ON PROJECTED USE OF THE AREA WHILE CONSIDERING BEST SEEDING DATES.

TEMPORARY SEEDING DATES

(FOR BEST SEEDING RESULTS, SEE INDOT STANDARD SPECIFICATIONS 1995)

PERMANENT SEED MIXTURES

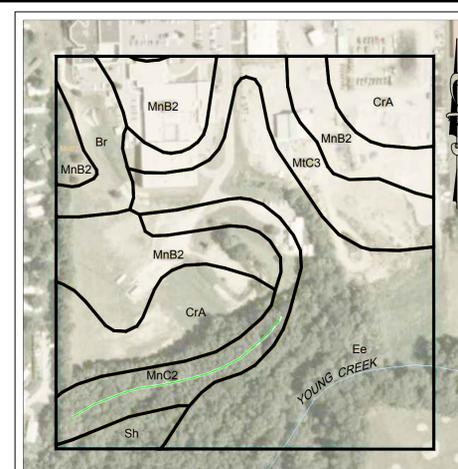
APPLY LIME TO RAISE THE pH TO THE LEVEL NEEDED FOR SPECIES BEING SEED. APPLY 23 LBS OF 15-15-15 ANALYSIS FERTILIZER (OR EQUIVALENTS PER 1,000 SQ. FT. (APPROXIMATELY 1,000 LBS. PER ACRE)) OR FERTILIZE ACCORDING TO TEST APPLICATION OF 150 LBS. OF AMMONIUM NITRATE ON AREAS LOW IN ORGANIC MATTER AND FERTILITY 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 SLOPE AS MUCH AS POSSIBLE.

SEEDING

FERTILIZER AND LIME SHALL MEET REQUIREMENTS OF INDOT STANDARD SPECIFICATIONS 1995.

SEEDING

SELECT A SEED MIXTURE BASED ON PROJECTED USE OF THE AREA WHILE CONSIDERING BEST SEEDING DATES.



SOIL MAP AND DESCRIPTION NOT TO SCALE



VICINITY MAP NOT TO SCALE

LEGAL DESCRIPTION

A PORTION OF DEED BOOK 5, PAGE 161: THE NORTHWEST QUARTER OF SECTION TWENTY TWO, 22, IN TOWNSHIP TWELVE, 12, NORTH OF RANGE FOUR, 4, EAST IN THE DISTRICT OF LANDS SUBJECT TO SALE AT INDIANAPOLIS, INDIANA, CONTAINING 160 ACRES MORE OR LESS.

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY STATE OR COUNTY OFFICIALS

INDIANA 811

Know what's below. Call before you dig.

"IT'S THE LAW"

CALL BEFORE YOU DIG

CALL 2 WORKING DAYS BEFORE YOU DIG

1-800-382-5544 or 811

CALL 2 WORKING DAYS BEFORE YOU DIG

PER INDIANA STATE LAW (IS-69-1991, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

INDIANA 811

Know what's below. Call before you dig.

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EARTHWORK

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

- PAVING
1. SCOPE OF 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:
1. ALL STREETS, PARKING AREAS WITHIN THE CONTRACT LIMITS.
2. CURBS AND CONCRETE RAMPS.
3. SIDEWALKS AND CONCRETE SLABS.
4. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL SPECIFICATIONS THE MORE STRINGENT SHALL APPLY.
B. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL SPECIFICATIONS THE MORE STRINGENT SHALL APPLY.
2. PAVEMENT CONSTRUCTION
A. ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE PLANNING AND HIGHWAY DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.
B. FLEXIBLE PAVEMENT
1. MATERIALS
A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.
B. COMPACTED AGGREGATE: BASE: SOUND, ANGULAR CRUSHED LESTONITE, CRUSHED OR UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG COURSE AGGREGATE SHALL BE CLASS A, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.
C. BASE COURSE: TYPE: HMA BASE 25.0mm
\*\*PROVIDED A JOB MIX FORMULA FOR EACH TYPE OF ASPHALT PRIOR TO THE BEGINNING OF THE CONSTRUCTION PROJECT.
D. REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE SURFACE IMMEDIATELY BEFORE APPLYING PRIME COAT.
1. PROOF ROLL SUBGRADE SURFACE WITH LOADED TRI-AXLE TRUCK (48 HOUR NOTICE IS REQUIRED TO BE GIVEN TO THE JOHNSON COUNTY HIGHWAY DEPT.) TO CHECK FOR UNSTABLE AREAS AND AREAS REQUIRING ADDITIONAL COMPACTATION.
2. NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.
B. AGGREGATE BASE: AFTER PLACEMENT, PROOF ROLL COMPACTED AGGREGATE BASE SURFACE TO CHECK FOR UNSTABLE AREAS AND AREAS REQUIRING ADDITIONAL COMPACTATION.
1. NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL 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.
K. CONCRETE RAMPS
1. CONCRETE RAMPS FOR THE DISABLED SHALL BE REQUIRED AS SPECIFIED IN THE PLANS AND SHALL CONFORM WITH CURRENT SPECIFICATIONS ESTABLISHED BY THE AMERICAN DISABILITIES ACT (ADA), SECTION 4.7.7.2.
2. THE CONCRETE RAMP SHALL BE FLUSH AND FREE OF ABRUPT CHANGES WITH SIDEWALKS, GUTTERS OR STREETS, AND PROVIDE A MAXIMUM SLOPE OF 1:12.
3. THE MINIMUM WIDTH OF A CONCRETE RAMP SHALL BE (48) INCHES EXCLUSIVE OF FLARED SIDES.
4. SIDES OF CONCRETE RAMPS SHALL HAVE FLARED SIDES AS SHOWN IN THE PLANS.

- STORM SEWER SYSTEMS
1. SCOPE OF WORK
A. THE WORK UNDER THIS SECTION INCLUDES ALL STORM SEWERS, STORM WATER INLETS, AND RELATED ITEMS, INCLUDING EXCAVATING AND BACKFILLING NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS.
B. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL SPECIFICATIONS THE MORE STRINGENT SHALL APPLY.
2. STORM SEWER CONSTRUCTION
A. STORM SEWERS
1. ALL STORM SEWER STRUCTURES SHALL COMPLY WITH CURRENT SPECIFICATIONS OF THE JOHNSON COUNTY PLANNING DEPT. AND ALL OTHER RESPONSIBLE AGENCIES IN RESPECT TO DESIGN AND QUALITY OF CONSTRUCTION.
2. ALL STORM SEWER CONSTRUCTION INSIDE PUBLIC RIGHT-OF-WAY, EITHER EXISTING OR TO BE DEDICATED, SHALL BE IN ACCORDANCE WITH THE MOST CURRENT I.N.D.O.T. STANDARD SPECIFICATION.
3. WHERE REINFORCED CONCRETE PIPE IS SHOWN ON THE CONSTRUCTION PLANS, IT SHALL BE IN ACCORDANCE WITH A.S.T.M. C-76 CLASS III WALL "C" UNLESS OTHERWISE SPECIFIED ON THE PLANS.
4. SECOND ROLLING: FOLLOW BREAKDOWN ROLLING AS SOON AS POSSIBLE. IT SHALL BE A GAUGE ALUMINIZED UNLESS OTHERWISE SPECIFIED AND SHALL HAVE THE CONNECTING BANDS AND SEALS AS SPECIFIED BY THE MANUFACTURER. C.M.P. SHALL BE ALUMINIZED PIPE IN ACCORDANCE WITH A.S.T.M. A-444.
5. MANHOLES, CATCH BASINS AND INLETS SHALL BE PRECAST CONCRETE. USE OF BRICK OR BLOCK WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE ENGINEER AND APPROVED IN WRITING BY THE JOHNSON COUNTY PLANNING AND HIGHWAY DEPARTMENTS DRAINAGE PRIOR TO CONSTRUCTION.
6. IF THE CONTRACTOR ELECTS TO USE ALTERNATE PRECAST STRUCTURES, HE SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER PRIOR TO ANY CONSTRUCTION.
7. PRECAST CONCRETE AND STEEL FOR MANHOLES AND INLETS SHALL BE IN ACCORDANCE WITH A.S.T.M. C-478.
8. CASTINGS SHALL BE AS SHOWN ON THE DETAIL SHEET(S) FOR MANUFACTURER, TYPE AND MODEL NUMBER.
9. NUMBER 53 STONE BACKFILL SHALL BE REQUIRED UNDER ALL PAVEMENT AREAS AND TRENCHES WITHIN FIVE(5) FEET OF THE EDGE OF PAVEMENT.
10. ALL TRENCHES UNDER PAVEMENT SHALL BE COMPACTED TO 95 PERCENT MODIFIED PROCTOR.
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 WIVERS, THE CONTRACTOR SHALL FURNISH ALL BONDS NECESSARY TO GET PERMITS FOR CUTS AND CONNECTIONS TO EXISTING SEWERS.
B. LOCAL STANDARDS: THE TERM "LOCAL STANDARDS" AS USED HEREIN MEANS THE STANDARDS OF DESIGN AND CONSTRUCTION OF THE RESPECTIVE MUNICIPAL DEPARTMENT OR UTILITY COMPANY.
C. EXISTING IMPROVEMENTS: THE CONTRACTOR SHALL MAINTAIN IN OPERATING CONDITION ALL ACTIVE UTILITIES, SEWERS AND OTHER DRAINS ENCOUNTERED IN THE SEWER INSTALLATION. THE CONTRACTOR SHALL REPAIR TO THE SATISFACTION OF THE OWNER ANY DAMAGE TO EXISTING ACTIVE IMPROVEMENTS.
D. WORKMANSHIP: THIS WORK SHALL CONFORM TO ALL LOCAL, STATE AND NATIONAL CODES AND TO BE APPROVED BY ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION.
E. TRENCHING: LAY ALL PIPE IN OPEN TRENCHES, EXCEPT WHEN THE LOCAL AUTHORITY GIVES WRITTEN PERMISSION FOR TUNNELING. OPEN THE TRENCH SUFFICIENTLY AHEAD OF PIPE-LAYING TO REVEAL ANY OBSTRUCTIONS. THE MIN. WIDTH OF TRENCH SHALL BE 1.25 TIMES THE OUTSIDE DIA. 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.
I. SUBDRAINS: ALL SUBDRAINS SHALL BE OF THE SIZE SHOWN ON THE PLANS AND SHALL BE CONSTRUCTED TO THE GRADES SHOWN. ALL DRAINS CONSTRUCTED OFF-SITE AS PART OF THE OUTLET DRAIN SHALL BE LOCATED AS SHOWN.
J. 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.

- WATER LINE SYSTEM
1. SCOPE OF WORK
A. THE WORK UNDER THIS SECTION INCLUDES ALL WATER MAIN, FIRE HYDRANTS, SERVICES AND RELATED ITEMS, INCLUDING EXCAVATING AND BACKFILLING NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS.
2. MATERIALS
A. ALL MATERIALS SHALL CONFORM TO ALL LOCAL, STATE, AND NATIONAL CODES AND SHALL BE APPROVED BY ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION.
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 WIVERS, 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.
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.

- CONCRETE CURB
1. EXPANSION JOINTS: SHALL BE 1/2 INCH TICH TRENCH PROVIDED AT ENDS OF ALL RETURNS AND AT A MAXIMUM SPACING OF 100 FEET.
2. CONTRACTION JOINTS UNLESS OTHERWISE PROVIDED, CONTRACTION JOINTS SHALL BE SAVED JOINTS SPACED TO FEET ON CENTER.
3. FINISH: TAMP AND SREED CONCRETE AS SOON AS PLACED, AND FILL ANY HONEY COMBED PLACES. FINISH SQUARE CORNERSTONE 1/4 INCH RADIIUS AND OTHER CORNERS TO RADI SHOWN.
4. CONCRETE WALKS AND EXTENSION 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: SREED CONCRETE AND TROWEL WITH A STEEL TROWEL TO A HARD DENSE SURFACE AFTER SURFACE WATER HAS DISAPPEARED. APPLY MEDIUM BROOM FINISH AND SCRIBE TRANSVERSE JOINTS AT 6 FOOT SPACING. PROVIDE 1/2 INCH EXPANSION JOINTS WHERE SIDEWALKS INTERSECT, AND AT A MAXIMUM SPACING OF 48 FEET BETWEEN EXPANSION JOINTS.
5. 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 REVISION.
I. BITUMINOUS PAVEMENT: HOT MIX ASPHALT PAVEMENT SHALL BE AS SPECIFIED IN SECTION 402 OF THE I.N.D.O.T. SPECIFICATIONS LATEST REVISIONS. PAVING WILL NOT BE PERMITTED DURING UNFAVORABLE WEATHER OR THEN THE TEMPERATURE IS 40 DEGREES F. AND FALLING.
J. COMPACTED AGGREGATE SUBBASE: THE THICKNESS SHOWN ON THE DRAWINGS IS THE MINIMUM THICKNESS OF THE FULL COMPACTED SUBBASE. COMPACTION SHALL BE ACCOMPLISHED BY ROLLING WITH A SMOOTH WHEELED ROLLER WEIGHING 8 TO 10 TONS, COMPACT TO 95% COMPACTION USING STANDARD TESTING PROCEDURES. ALONG CURBS, HEADERS AND WALLS AND AT ALL PLACES NOT ACCESSIBLE TO THE ROLLER, THE AGGREGATE MATERIAL SHALL BE TAMPED WITH MECHANICAL TAMPERS OR WITH APPROVED HAND TAMPERS.
K. CONCRETE RAMPS
1. CONCRETE RAMPS FOR THE DISABLED SHALL BE REQUIRED AS SPECIFIED IN THE PLANS AND SHALL CONFORM WITH CURRENT SPECIFICATIONS ESTABLISHED BY THE AMERICAN DISABILITIES ACT (ADA), SECTION 4.7.7.2.
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.

- TRAFFIC AND LANE MARKINGS
A. CLEANING: SWEEP AND CLEAN SURFACE TO ELIMINATE LOOSE MATERIAL AND DUST.
B. STRIPING: USE CHLORINATED RUBBER BASE TRAFFIC LANE-MARKING PAINT, FACTORY MIXED, COLOR: YELLOW.
1. DO NOT APPLY TRAFFIC AND LANE MARKING PAINT UNTIL LAYOUT AND PLACEMENT HAS BEEN VERIFIED WITH ARCHITECT/ENGINEER.
2. APPLY PAINT WITH MECHANICAL EQUIPMENT TO PRODUCE UNIFORM STRAIGHT EDGES. APPLY IN TWO COATS AT MANUFACTURER'S RECOMMENDED RATES.
B. FIELD QUALITY CONTROL
A. TESTING AND INSPECTION SERVICE:
1. OWNER SHALL EMPLOY A TESTING LABORATORY TO PERFORM PAVEMENT TESTING AND INSPECTION SERVICE FOR QUALITY CONTROL DURING PAVING OPERATIONS.
2. TESTING SERVICE SHALL HAVE REPRESENTATIVE PRESENT TO OBSERVE AND PERFORM TESTS AT ALL STAGES PAVING WORK IS IN PROGRESS.
B. GENERAL: TESTING SERVICE REPRESENTATIVE SHALL TAKE A MINIMUM OF TWO SAMPLES PER LIFT OF BITUMINOUS AGGREGATE MIX EACH DAY BEFORE PAVING OPERATION. LABORATORY TEST SHALL BE PERFORMED ON THESE SAMPLES TO DETERMINE AGGREGATE GRADATION AND ASPHALT CONTENT.
1. 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.
2. A TEST SECTION AT A MINIMUM SIZE OF 100'X12' SHALL BE PLACED AT A LOCATION AS DIRECTED BY THE COUNTY PRIOR TO FULL PRODUCTION FOR EACH TYPE OF MIX. THE TEST SECTION SHALL BE COMPACTED TO DETERMINE A TARGET DENSITY FOR THE REMAINDER OF THE PAVEMENT.
C. THICKNESS: IN-PLACE COMPACTED THICKNESS WILL NOT BE ACCEPTABLE IF EXCEEDING FOLLOWING ALLOWABLE VARIATION FROM REQUIRED THICKNESS:
AGGREGATE BASE COURSE: 1/2" PLUS OR MINUS
BINDER COURSE: 1/4" PLUS OR MINUS
SURFACE COURSE: 1/4" PLUS OR MINUS
1. 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:
1) 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.
D. PAVEMENT THICKNESS
1. 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.
2. PAVEMENT WHICH FAILS TO COMPLY WITH APPROVED JOB MIX FORMULA SHALL BE REPLACED AS DIRECTED BY THE ARCHITECT/ENGINEER.
E. SURFACE SMOOTHNESS: TEST FINISHED SURFACE FOR SMOOTHNESS, USING 10' STRAIGHTEDGE APPLIED PARALLEL 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"
BINDER COURSE SURFACE: 1/8"
SURFACE COURSE SURFACE: 1/8"
1) CHECK SURFACED AREAS AT INTERVALS AS DIRECTED BY TESTING SERVICE.
F. DENSITY TESTS: DENSITY TESTS SHALL BE MADE AT EACH LIFT. TEST SHALL BE AS FOLLOWS:
1) TESTS WILL BE REQUIRED AT VARIOUS TIMES AND LOCATIONS FOR SUBGRADE AND BASE COURSES FOR ASPHALT PAVING AREAS.
G. TESTING SERVICE SHALL SUBMIT CERTIFIED RESULTS TO THE OWNER AND ENGINEER WITHIN 72 HOURS AFTER TESTS ARE MADE WITH THEIR COMMENTS AND RECOMMENDATIONS FOR ACTION.
1) 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.
2) SEE SITE GRADING, UNDER THE "EARTHWORK" SECTION FOR ADDITIONAL COMPACTATION REQUIREMENTS.
9. APPLICATION
A. GRADING: DO ANY NECESSARY GRADING IN ADDITION TO THAT PERFORMED IN ACCORDANCE WITH EARTHWORK SECTION TO BRING SUBGRADES, AFTER FINAL COMPACTION, TO THE REQUIRED GRADES AND SECTIONS FOR SITE IMPROVEMENTS.
B. PREPARATION OF SUBGRADE: REMOVE SPONGY AND OTHERWISE UNSUITABLE MATERIAL AND REPLACE WITH STABLE MATERIAL. NO TRAFFIC WILL BE ALLOWED ON PREPARED SUBGRADE PRIOR TO PAVING.
C. COMPACTION OF SUBGRADE: THE SUBGRADE SHALL BE COMPACTED TO AT LEAST 100% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE PROVISIONS OF AASHTO T-99. WATER SHALL BE PREVENTED FROM STANDING ON THE COMPACTED SUBGRADE.
D. UTILITY STRUCTURES: CHECK FOR CORRECT ELEVATION OF ALL MANHOLE COVERS, VALVE BOXES AND SIMILAR STRUCTURES LOCATED WITHIN AREAS TO BE PAVED, AND MAKE, OR HAVE MADE, ANY NECESSARY ADJUSTMENTS IN SUCH STRUCTURES.
E. PLACING CONCRETE
1. SUBGRADE: PLACE CONCRETE ONLY ON A MOST, COMPACTED SUBGRADE OR BASE FREE FROM LOOSE MATERIAL. PLACE NO CONCRETE IN A WADY 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 IS TO BE DEPOSITED SO AS TO REQUIRE AS LITTLE REHANDLING AS PRACTICABLE. WHEN CONCRETE IS TO BE PLACED AT AN ATMOSPHERIC TEMPERATURE OF 35 DEGREES F. OR LESS, PARAGRAPH 702.10 OF THE I.N.D.O.T. SPECIFICATIONS LATEST REVISIONS SHALL BE FOLLOWED.
F. CONCRETE CURB
1. EXPANSION JOINTS: SHALL BE 1/2 INCH TICH TRENCH PROVIDED AT ENDS OF ALL RETURNS AND AT A MAXIMUM SPACING OF 100 FEET.
2. CONTRACTION JOINTS UNLESS OTHERWISE PROVIDED, CONTRACTION JOINTS SHALL BE SAVED JOINTS SPACED TO FEET ON CENTER.
3. FINISH: TAMP AND SREED CONCRETE AS SOON AS PLACED, AND FILL ANY HONEY COMBED PLACES. FINISH SQUARE CORNERSTONE 1/4 INCH RADIIUS AND OTHER CORNERS TO RADI SHOWN.
4. CONCRETE WALKS AND EXTENSION 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: SREED CONCRETE AND TROWEL WITH A STEEL TROWEL TO A HARD DENSE SURFACE AFTER SURFACE WATER HAS DISAPPEARED. APPLY MEDIUM BROOM FINISH AND SCRIBE TRANSVERSE JOINTS AT 6 FOOT SPACING. PROVIDE 1/2 INCH EXPANSION JOINTS WHERE SIDEWALKS INTERSECT, AND AT A MAXIMUM SPACING OF 48 FEET BETWEEN EXPANSION JOINTS.
5. 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 REVISION.
I. BITUMINOUS PAVEMENT: HOT MIX ASPHALT PAVEMENT SHALL BE AS SPECIFIED IN SECTION 402 OF THE I.N.D.O.T. SPECIFICATIONS LATEST REVISIONS. PAVING WILL NOT BE PERMITTED DURING UNFAVORABLE WEATHER OR THEN THE TEMPERATURE IS 40 DEGREES F. AND FALLING.
J. COMPACTED AGGREGATE SUBBASE: THE THICKNESS SHOWN ON THE DRAWINGS IS THE MINIMUM THICKNESS OF THE FULL COMPACTED SUBBASE. COMPACTION SHALL BE ACCOMPLISHED BY ROLLING WITH A SMOOTH WHEELED ROLLER WEIGHING 8 TO 10 TONS, COMPACT TO 95% COMPACTION USING STANDARD TESTING PROCEDURES. ALONG CURBS, HEADERS AND WALLS AND AT ALL PLACES NOT ACCESSIBLE TO THE ROLLER, THE AGGREGATE MATERIAL SHALL BE TAMPED WITH MECHANICAL TAMPERS OR WITH APPROVED HAND TAMPERS.
K. CONCRETE RAMPS
1. CONCRETE RAMPS FOR THE DISABLED SHALL BE REQUIRED AS SPECIFIED IN THE PLANS AND SHALL CONFORM WITH CURRENT SPECIFICATIONS ESTABLISHED BY THE AMERICAN DISABILITIES ACT (ADA), SECTION 4.7.7.2.
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.

- SAFETY
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR THE PROTECTION OF 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.
2. 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.
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