

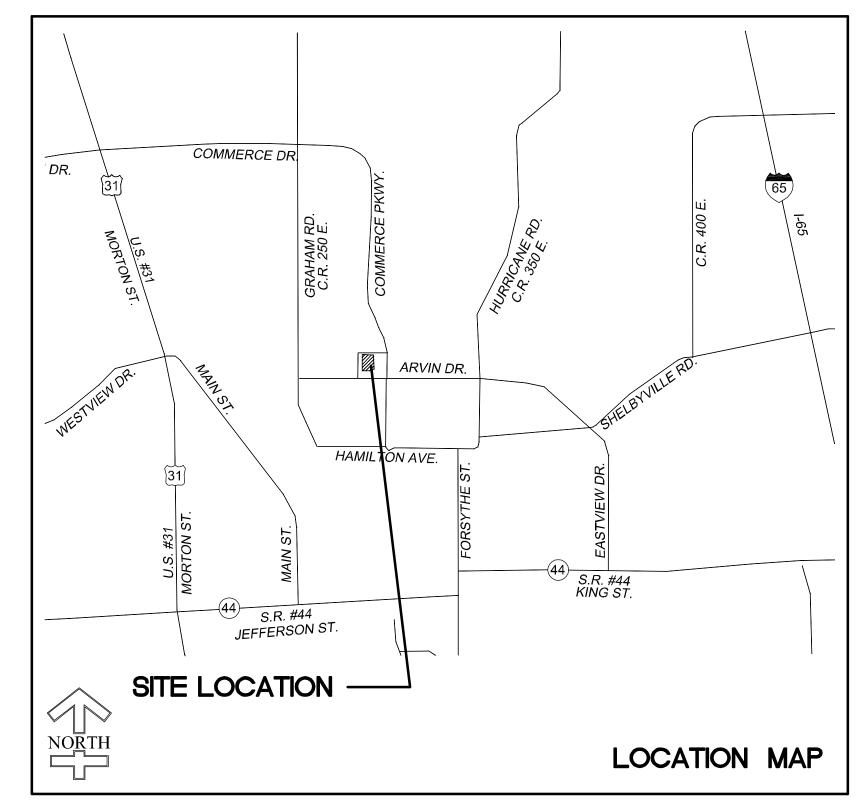
# SUBMIT FOR GOVERNMENTAL AGENCY APPROVALS

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SHEET NO.	DESCRIPTION
C101	TITLE SHEET
C201	EXISTING SITE PLAN
C301	PROPOSED SITE CONDITIONS (GEOMETRIC AND DIMENSIONAL PLAN)
C302	PROPOSED SITE CONDITIONS (GRADING PLAN)
C401	STORMWATER POLLUTION PREVENTION PLAN
C501	LANDSCAPE PLAN
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# COMMERCE BUSINESS PARK BUILDING #2 EXPANSION

CITY OF FRANKLIN, JOHNSON COUNTY, INDIANA CONSTRUCTION PLANS

> PREPARED FOR: WK INVESTMENTS LLC 1424 COMMERCE PARKWAY FRANKLIN, IN 46131 PHONE: 317-435-9404 WILLIAM HARVEY



SITE ADDRESS: 1424 COMMERCE PARKWAY FRANKLIN, IN 46131

### DATES:

EST. PROPOSED START DATE: **EST. COMPLETION DATE:** 

**FALL 2023 WINTER 2024** 

### USE:

PROPOSED USE: INDUSTRIAL GENERAL **EXISTING ZONING:** 

### LEGAL DESCRIPTION

A PART OF THE SOUTHEAST QUARTER OF SECTION LL, TOWNSHIP 12 NORTH, THENCE 4 EAST OF THE SECOND PRINCIPAL MERIDIAN, JOHNSON COUNTY, INDIANA, DESCRIBED AS FOLLOWS:

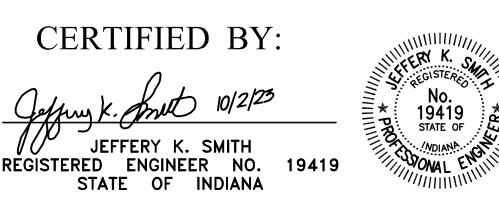
COMMENCING AT THE SOUTHWEST COMER OF SAID QUARTER SECTION; THENCE NORTH 00 DEGREES 06 MINUTES 08 SECONDS WEST (PREVIOUS SURVEY BEARING) ALONG THE WEST LINE OF SAID QUARTER SECTION 50.00 FEET; THENCE NORTH 89 DEGREES 13 MINUTES 22 SECONDS EAST 1240.00 FEET TO THE POINT OF BEGINNING OF THE DESCRIBED TRACT; THENCE NORTH 00 DEGREES 00 MINUTES 00 SECONDS WEST 513.37 FEET; THENCE NORTH 90 DEGREES 00 MINUTES 00 SECONDS EAST 477.92 FEET TO E POINT ON THE WEST RIGHT-OF-WAY LINE OF A ROADWAY EASEMENT; THE NEXT TWO (2) COURSES FOLLOW LEST SAID WEST RIGHT-OF-WAY LINE; THENCE SOUTHEASTERLY ON AND ALONG A CURVE TO THE RIGHT WITH E RADIUS OF 770.00 FEET, AN ARC: DISTANCE OF 261.63 FEET AND A CHORD BEARING AND DISTANCE OF SOUTH 09 DEGREES 44 MINUTES 03 SECONDS EAST 260.38 FEET; THENCE SOUTH 00 DEGREES 00 MINUTES 00 SECONDS EAST 249.66 FEET; THENCE SOUTH 89 DEGREES 13 MINUTES 22 SECONDS WEST 522.12 FEET TO THE POINT OF BEGINNING, CONTAINING 6.025 ACRES, MORE OR LESS, SUBJECT TO ALL PERTINENT EASEMENTS, RIGHTS-OF-WAY AND

SUBJECT TO ANY AND ALL EASEMENTS, AGREEMENTS AND RESTRICTIONS OF RECORD.

1. TOP OF SANITARY SEWER CASTING, LOCATED AT THE 480' NORTH OF THE

ROUND-ABOUT OF ARVIN ROAD AND COMMERCE PARKWAY (ELEV. - 740.67)

SITE BENCHMARK:



PREPARED BY: PROJECTS plus

ARVIN DR.

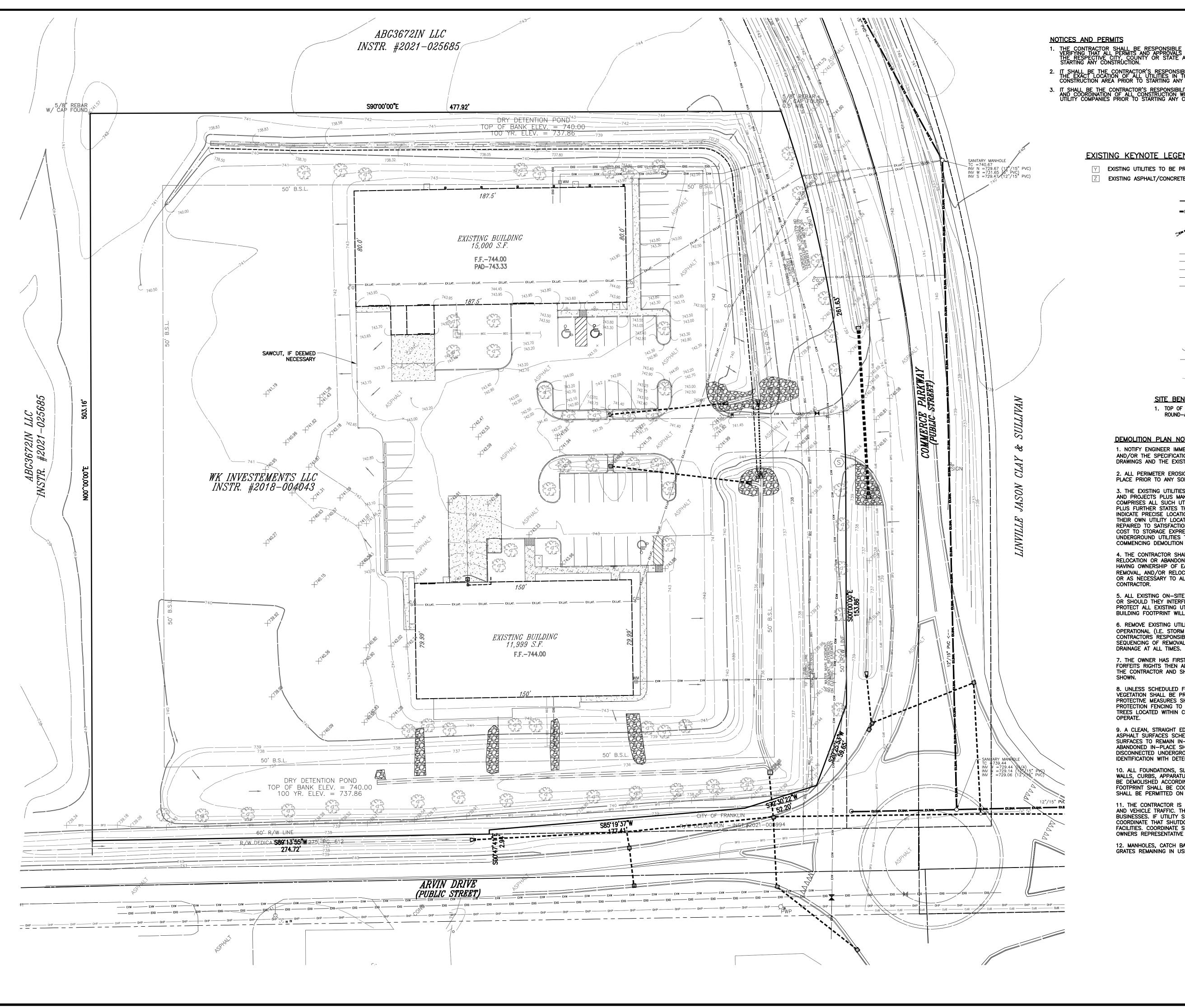
GREENWOOD SURVEYING COMPANY

JOB # 13011.03

PARKWAY

SITE ENGINEERING-LAND SURVEYING-CONSTRUCTION LAYOUT 1257 Airport Parkway Suite A - Greenwood, Indiana 46143 (317)-882-5003

BLDG. EXPANS UTILITY CONTACT INFORMATION **TELEPHONE** SANITARY SEWERS INDIANA-AMERICAN WATER CO. FRANKLIN PUBLIC WORKS CENTURYLINK 153 N. EMERSON AVE. 796 SOUTH STATE ST. 1147 NORTH MORTON STREET GREENWOOD, IN 46143 FRANKLIN, IN 46131 FRANKLIN, IN 46131 PHONE #: (317) 736-3640 PHONE #: (317) 893-3560 PHONE #: (317) 736-4863 CONTACT: JOHN C. UNVERFERTH CONTACT: ADAM BOONE JOHN.C.UNVERFERTH@CENTURYLINK.COM ADAM.BOONE@AMWATER.COM EXIST. ASPHALT CONTACT: SALLY BROWN SBROWN@FRANKLIN.IN.GOV **ELECTRIC DUKE ENERGY** VECTREN ENERGY 2515 N. MORTON ST. 600 INDUSTRIAL DRIVE FRANKLIN, IN 46131 FRANKLIN, IN 46131 PHONE #: (317) 736-2014 PHONE #: (317) 736.2915 CONTACT: REECE HEILERS CONTACT: KIMBERLY BURTON-KELLY REECE.HEILERS@DUKE-ENERGY.COM KIM.KELLY@CENTERPOINTENERGY.COM EXIST. BLDG. #1



IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES IN THE VICINITY OF THE CONSTRUCTION AREA PRIOR TO STARTING ANY CONSTRUCTION.

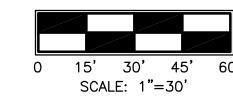
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### **EXISTING KEYNOTE LEGEND:**

Y EXISTING UTILITIES TO BE PROTECTED

Z EXISTING ASPHALT/CONCRETE PAVEMENT (PROTECT)



### LEGEND :

EXISTING SANITARY SEWER W/ MANHOLE

EXISTING STORM SEWER W/ END SECTION, DITCH INLET AND PAVEMENT INLET

EXISTING WATER LINE W/ FIRE HYDRANT ——EX.8"W+ EXISTING GAS LINE EXISTING BURIED ELECTRIC CABLE EXISTING BURIED TELEPHONE CABLE EXISTING OVERHEAD POWERLINE EXISTING UTILITY POLE EXISTING PEDESTAL EXISTING MAILBOX EXISTING TRAFFIC SIGN EXISTING AREA LIGHT EXISTING TREELINE

> EXISTING CHAINLINK FENCE EXISTING SPOT ELEVATION EXISTING CONTOUR LINE

### SITE BENCHMARK:

1. TOP OF SANITARY SEWER CASTING, LOCATED AT THE 480' NORTH OF THE ROUND-ABOUT OF ARVIN ROAD AND COMMERCE PARKWAY (ELEV. - 740.67)

### **DEMOLITION PLAN NOTES**

1. NOTIFY ENGINEER IMMEDIATELY IF THERE ARE QUESTIONS REGARDING THE DRAWINGS AND/OR THE SPECIFICATIONS, OR IF THERE ARE ANY CONFLICTS BETWEEN THE DRAWINGS AND THE EXISTING CONDITIONS.

2. ALL PERIMETER EROSION CONTROL AND/OR CONSTRUCTION FENCING SHALL BE IN PLACE PRIOR TO ANY SOIL DISTURBANCE

3. THE EXISTING UTILITIES SHOWN HAVE BEEN LOCATED FROM VISIBLE FIELD EVIDENCE AND PROJECTS PLUS MAKES NO GUARANTEES THAT THE UTILITY INFORMATION SHOWN COMPRISES ALL SUCH UTILITIES IN THE AREA, IN SERVICE OR ABANDONED. PROJECTS PLUS FURTHER STATES THAT THE UNDERGROUND UTILITY DATA SHOWN DOES NOT INDICATE PRECISE LOCATIONS. ANY CONTRACTOR DOING ANY EXCAVATION WILL CALL IN THEIR OWN UTILITY LOCATES PRIOR TO COMMENCING WORK. ANY DAMAGE SHALL BE REPAIRED TO SATISFACTION OF STORAGE EXPRESS AND OPERATING AUTHORITY AT NO COST TO STORAGE EXPRESS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF UNDERGROUND UTILITIES TO BE REMOVED, RELOCATED OR ABANDONED PRIOR TO COMMENCING DEMOLITION ACTIVITIES.

4. THE CONTRACTOR SHALL COORDINATE WORK ASSOCIATED WITH THE REMOVAL, RELOCATION OR ABANDONMENT OF UTILITIES WITH THE UTILITY COMPANY OR ENTITY HAVING OWNERSHIP OF EACH RESPECTIVE UTILITY. COSTS FOR DISCONNECTION, REMOVAL, AND/OR RELOCATION OF EXISTING UTILITIES AS SHOWN ON THE DRAWINGS OR AS NECESSARY TO ALLOW FOR EXECUTION OF THE WORK SHALL BE PAID BY THE

5. ALL EXISTING ON—SITE UTILITIES SHALL REMAIN UNLESS DESIGNATED FOR REMOVAL OR SHOULD THEY INTERFERE WITH PROJECT CONSTRUCTION. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES TO REMAIN. ALL UTILITIES WITHIN THE PROPOSED BUILDING FOOTPRINT WILL BE REMOVED UNLESS OTHERWISE NOTED.

6. REMOVE EXISTING UTILITIES ONLY AFTER CRITICAL NEW SYSTEMS ARE IN PLACE AND OPERATIONAL (I.E. STORM DRAINAGE, SERVICES TO EXISTING STRUCTURES). IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE PROPER REMOVAL, INCLUDING SAFE SEQUENCING OF REMOVAL FOR UTILITIES, CONTRACTOR SHALL MAINTAIN POSITIVE

7. THE OWNER HAS FIRST SALVAGE RIGHTS ON ALL ITEMS REMOVED. IF OWNER FORFEITS RIGHTS THEN ALL DEMOLISHED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF OFF—SITE UNLESS OTHERWISE

8. UNLESS SCHEDULED FOR DEMOLITION ON THE DRAWINGS, ALL TREES AND VEGETATION SHALL BE PROTECTED THROUGHOUT THE DURATION OF THE PROJECT. PROTECTIVE MEASURES SHALL INCLUDE INSTALLATION AND MAINTENANCE OF TREE PROTECTION FENCING TO BE LOCATED WHERE SHOWN AND AT THE DRIPLINE OF ALL TREES LOCATED WITHIN CLOSE PROXIMITY OF AREAS WHERE HEAVY EQUIPMENT WILL

9. A CLEAN, STRAIGHT EDGE SHALL BE SAWCUT BETWEEN ALL CONCRETE AND ASPHALT SURFACES SCHEDULED FOR DEMOLITION AND CONCRETE AND ASPHALT SURFACES TO REMAIN IN-PLACE. TERMINAL ENDS OF UNDERGROUND UTILITIES ABANDONED IN-PLACE SHALL BE CUT, CAPPED AND PLUGGED. THE ENDS OF DISCONNECTED UNDERGROUND UTILITIES SHALL BE MARKED FOR FUTURE IDENTIFICATION WITH DETECTABLE LOCATOR TAPE OR A METAL ROD.

10. ALL FOUNDATIONS, SLABS, STRUCTURAL STEEL, MASONRY, SIDEWALKS, RETAINING WALLS, CURBS, APPARATUSES, ETC., WITHIN THE DESIGNATED DEMOLITION LINES SHALL BE DEMOLISHED ACCORDING TO SPECIFICATIONS. ALL DEMOLITION WITHIN PROPOSED FOOTPRINT SHALL BE COORDINATED WITH THE BUILDING DRAWINGS. NO OPEN BURNING SHALL BE PERMITTED ON THE SITE.

11. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN SAFE ACCESS FOR PEDESTRIANS AND VEHICLE TRAFFIC. THE CONTRACTOR WILL MAINTAIN ALL UTILITY SERVICES TO ALL BUSINESSES. IF UTILITY SERVICES MUST BE INTERRUPTED, THE CONTRACTOR SHALL COORDINATE THAT SHUTDOWN TO MINIMIZE IMPACT TO THE BUSINESSES AND EXISTING FACILITIES. COORDINATE SHUTDOWN AT LEAST ONE WEEK IN ADVANCE WITH BUSINESS OWNERS REPRESENTATIVE AND FACILITY MANAGER.

12. MANHOLES, CATCH BASINS, CLEANOUTS, VALVE BOXES, FRAMES COVERS AND GRATES REMAINING IN USE SHALL BE PROTECTED AND ADJUSTED TO FINAL GRADES.



Know what's below. Call before you dig. 'IT'S THE LAW'

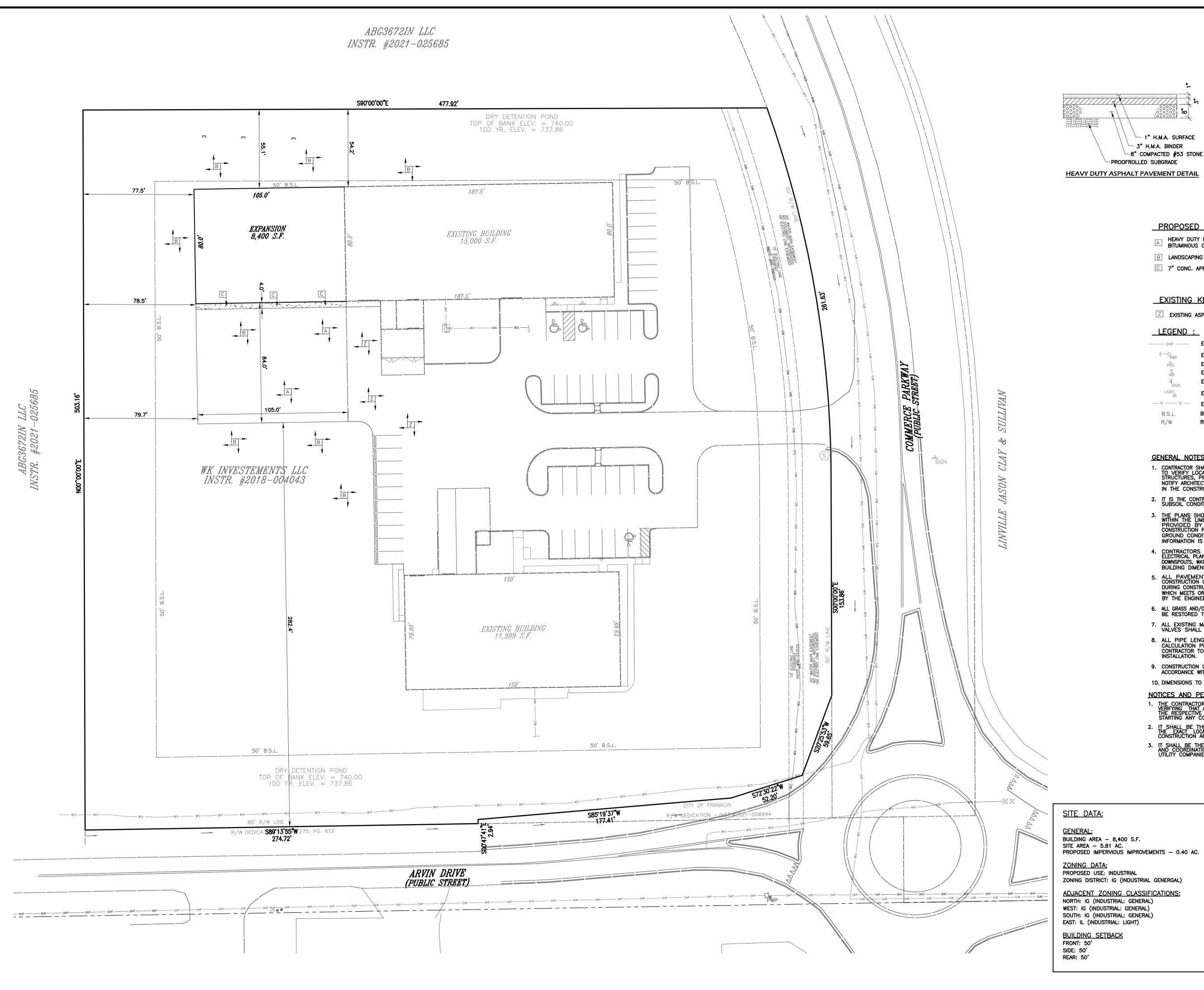
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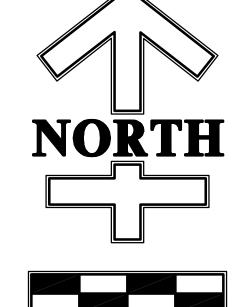
SITE **EXISTING** 

OMM BUIL FRAN

SEAL LIFERY K. SMI 19419 STATE OF · WDIANF ·

JOB NUMBER **13011.03** 





15' 30' 45'

SCALE: 1"=30'

## PROPOSED KEYNOTES:

HEAVY DUTY INTERNAL PARKING PAVEMENT SECTION (4" BITUMINOUS OVER 8" STONE BASE)

B LANDSCAPING AND LAWN

C 7" CONC. APRON OVER COMPACTED STONE BASE

### EXISTING KEYNOTES:

Z EXISTING ASPHALT/CONCRETE PAVEMENT (PROTECT)

### <u>LEGEND</u>:

EXISTING OVERHEAD POWER LINE EXISTING UTILITY POLE W/ GUYWIRE EXISTING UTILITY PEDESTAL EXISTING MAILBOX

EXISTING TRAFFIC SIGN EXISTING CHAINLINK FENCE BUILDING SETBACK LINE B.S.L.

RIGHT-OF-WAY

### **GENERAL NOTES:**

R/W

- 1. CONTRACTOR SHALL RECOGNIZE RESPECTIVE WORK AND RESPONSIBILITY TO VERIFY LOCATION, SIZE, AND ELEVATION OF EXISTING UTILITIES, STRUCTURES, PIPES, PAVEMENTS, ETC. AS RELATED TO THEIR WORK. NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICT AND/OR DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS.
- 2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACQUAINT HIMSELF WITH SUBSOIL CONDITIONS.
- 3. THE PLANS SHOW THE LOCATION OF ALL KNOWN UTILITIES LOCATED WITHIN THE LIMITS OF THE CONTRACT ACCORDING TO INFORMATION PROVIDED BY THE VARIOUS UTILITY COMPANIES, PREVIOUS CONSTRUCTION PLANS AND AS EVIDENCED BY OBSERVATION OF ABOVE GROUND CONDITIONS BY THE SURVEYOR. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED.
- 4. CONTRACTORS SHALL CONSULT ARCHITECTURAL, PLUMBING AND ELECTRICAL PLANS FOR: INVERT ELEVATIONS AND EXACT LOCATION OF DOWNSPOUTS, WATER LINES GAS LINES, TRANSFORMER'S PAD OR POLE, AND BUILDING DIMENSIONS.
- 5. ALL PAVEMENT PATCHING DUE TO UTILITIES INSTALLATION; CONSTRUCTION OF CURBS, ETC., OR DAMAGE TO EXISTING PAVEMENT DURING CONSTRUCTION SHALL BE PATCHED WITH A PAVEMENT SECTION WHICH MEETS OR EXCEEDS JOHNSON COUNTY STANDARDS AS APPROVED BY THE ENGINEERING DEPARTMENT.
- 6. ALL GRASS AND/OR SHRUBBERY DISTURBED BY NEW CONSTRUCTION SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
- 7. ALL EXISTING MANHOLE AND CATCH BASIN GRATES, WATER OR GAS VALVES SHALL BE ADJUSTED TO NEW FINISH GRADE ELEVATION
- 8. ALL PIPE LENGTHS SHOWN ON DRAWINGS ARE FOR HYDRAULIC CALCULATION PURPOSES ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE EXACT LENGTHS REQUIRED FOR ACTUAL INSTALLATION.
- 9. CONSTRUCTION OF ALL SEWER LINES AND STRUCTURES SHALL BE IN ACCORDANCE WITH LOCAL AND STATE CODE, RULES AND REGULATIONS 10. DIMENSIONS TO FACE OF CURB.

### NOTICES AND PERMITS

- 3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR NOTIFICATION AND COORDINATION OF ALL CONSTRUCTION WITH THE RESPECTIVE UTILITY COMPANIES PRIOR TO STARTING ANY CONSTRUCTION.

**ADJACENT ZONING CLASSIFICATIONS:** 



Call before you dig. CALL 2 WORKING DAYS BEFORE YOU DIG

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13011.03

JOB NUMBER

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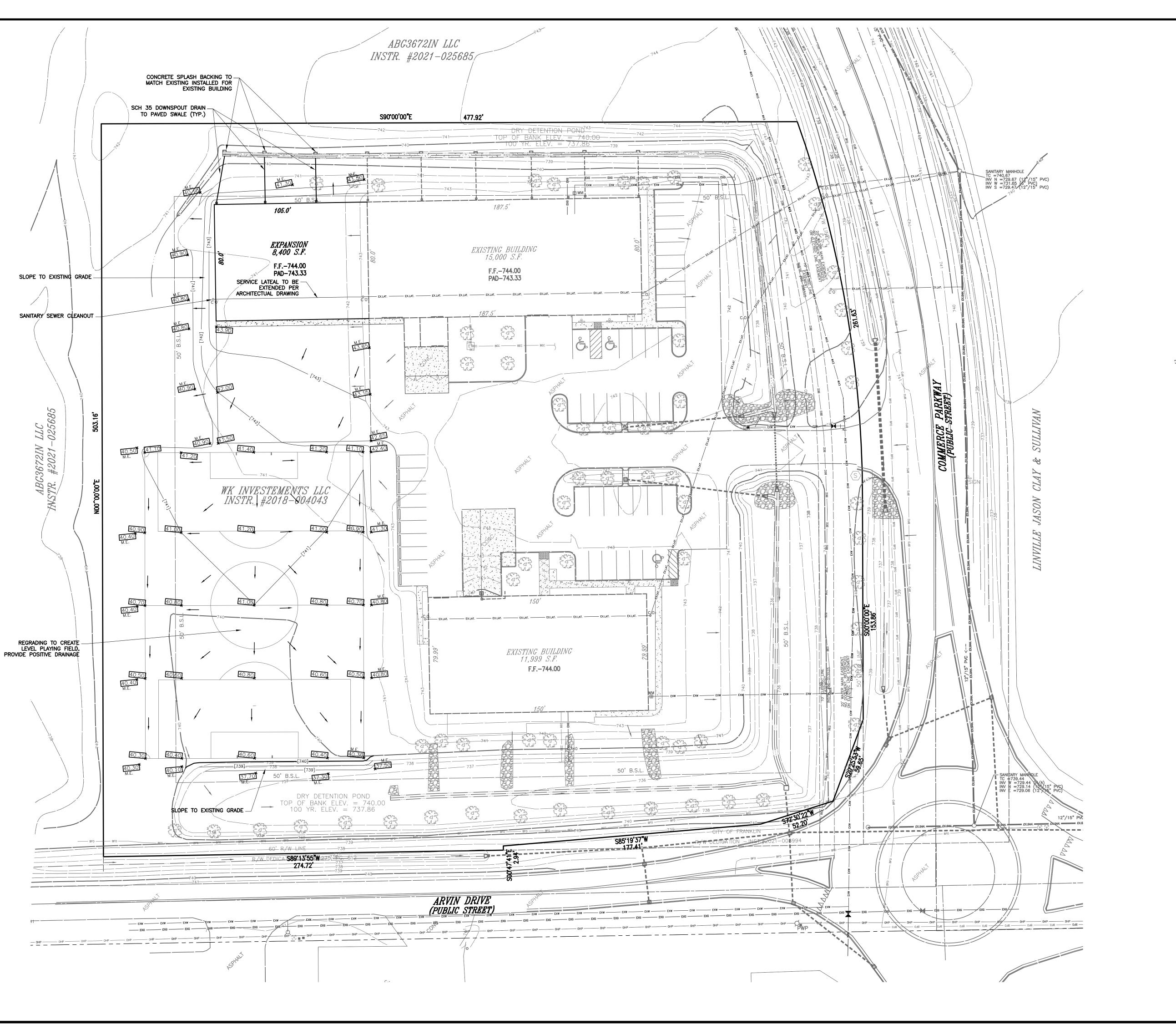
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E CONDITIONS GEOMETRIC PL

PROPOSED (DIMENSIONAL A

COMMERCE BUILDING JF FRANKLIN,

15





### <u>LEGEND</u>:

54.65 M.E. 62.64	PROPOSED SPOT ELEVATION
M.E. 52.64	MATCH EXISTING GRADE
[756]	PROPOSED CONTOUR LINE
EX.SAN.	EXISTING SANITARY SEWER W/ MANHOLE
	EXISTING STORM SEWER W/ END SECTION, MANHOLE, YARD INLET, AND CURB INLET
<b>#</b>	EXISTING BURIED GAS MAIN W/ METER AND VALVE
	EXISTING BURIED ELECTRIC CABLE W/ MANHOL EXISTING OVERHEAD POWER LINE
€—Ø <sub>PWP</sub>	EXISTING UTILITY POLE W/ GUYWIRE
PED	EXISTING UTILITY PEDESTAL
 МВ	EXISTING MAILBOX
∘  SIGN	EXISTING TRAFFIC SIGN
LIGHT <del>*</del>	EXISTING AREA LIGHT
—×——×—	EXISTING CHAINLINK FENCE
752	EXISTING CONTOUR LINE
B S I	BUILDING SETBACK LINE

### **SITE BENCHMARK:**

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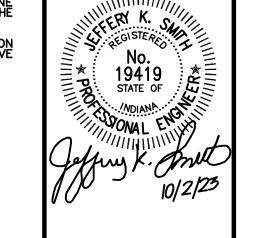
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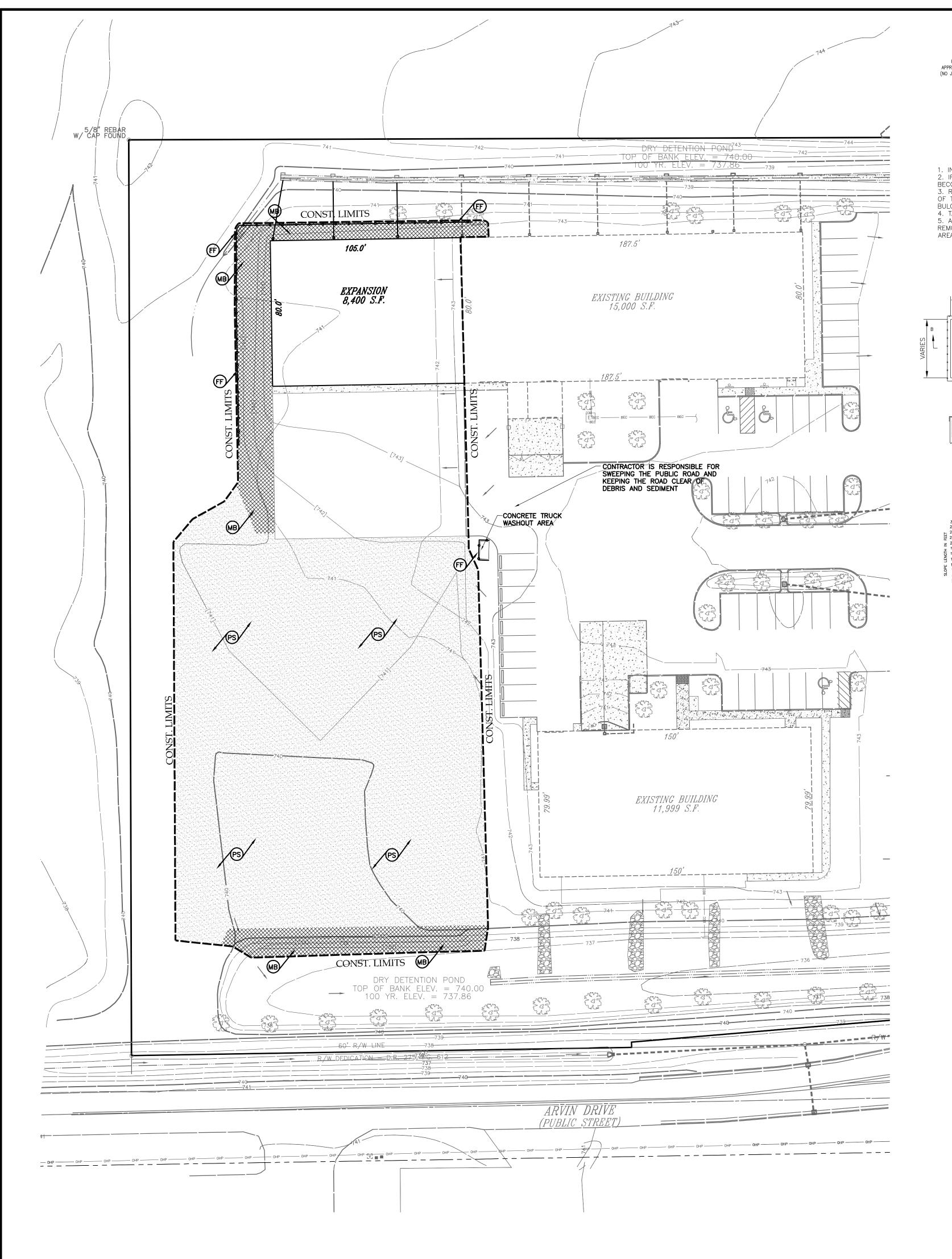
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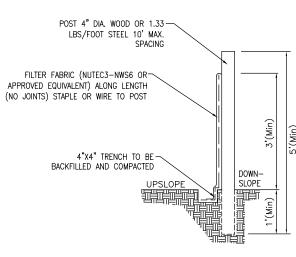
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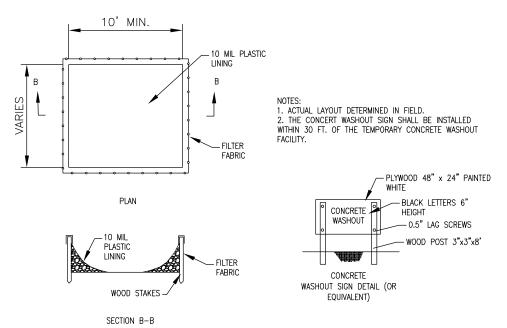
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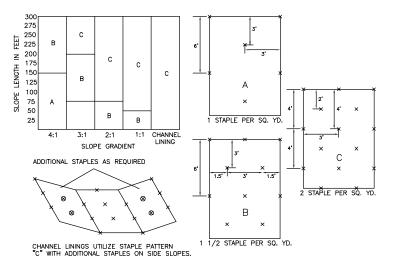


1. INSPECT ONCE PER WEEK OR AFTER EACH 1/2" OF RAINFALL. 2. IF FENCE FABRIC TEARS, STARTS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECT PORTION IMMEDIATELY. 3. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE AT ITS LOWEST POINT OR IS CAUSING THE FABRIC TO 4. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEAN OUT. 5. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND SEDIMENT DEPOSITS BRING THE DISTURBED AREA TO GRADE, AND STABILIZE.

### FILTER FENCE INSTALLATION DETAIL



CONCRETE WASHOUT DETAIL



**EROSION CONTROL BLANKET** STAPLE PATTERN

### GENERAL STAPLE RECOMMENDATIONS

STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN GREEN EROSION CONTROL BLANKETS. STAPLE PATTERNS MAY VARY DEPENDING UPON SOIL TYPE AND AVERAGE ANNUAL RAINFALL AT SLOPE LENGTHS GREATER THAN 300 FEET OR WHERE DRAINAGE OVER LARGE AREAS IS DIRECTED ONTO THE BLANKETS, STAPLE PATTERN "C" SHOULD BE UTILIZED. CHANNEL LININGS REQUIRED A 2.0' MINIMUM OVERLAP AT LONGITUDINAL JOINTS. SIDESLOPES SHALL REQUIRE A 6" MINIMUM OVERLAP. WHERE OVERLAPS OCCUR, THE UPSTREAM BLANKET SHALL OVERLAP THE DOWNSTREAM. IF OTHER THAN NORTH AMERICAN GREEN EROSION CONTROL BLANKETS ARE INSTALLED FOLLOW THE INSTALLATION DIRECTIONS RECOMMENDED BY THAT PRODUCTS COMPANY.

ALL DISTURBED LAWN AREAS SHALL RECEIVE PERMANENT SEEDING IMMEDIATELY 2) ALL DISTURBED LAWN AREA TO HAVE A MINIMUM OF 6 INCHES OF TOPSOIL (COMPACTED 3) TOPSOIL TO BE FERTILE, FRIABLE, SANDY LOAM REASONABLY FREE OF SUBSOIL, CLAY LUMPS, STONES LARGER THAN 1/2", EXCESSIVE QUANTITIES OF SMALL STONE/GRAVEL, BRUSH AND OTHER LITER. 4) SOLVE ANY SURFACE OR SUBSURFACE DRAINAGE PROBLEMS AND CONSTRUCT PERMANENT EROSION CONTROL STRUCTURES. 5) PERFORM THE MAJOR FILLING, SHAPING AND SMOOTHING OF GULLIES OR ERODED AREAS.
6) HAVE TOPSOIL TESTED TO CHECK PH AND NUTRIENT LEVELS. PROVIDE FERTILIZER AND SOIL AMENDMENTS AS REQUIRED TO MEET/EXCEED MINIMUM REQUIREMENTS AS SUGGESTED ON SOILS TEST RESULTS FOR LAWNS.

7) WORK FERTILIZER AND SOIL NUTRIENTS INTO TOP 2-3 INCHES OF THE TOPSOIL WITH A SMALL DISK, HARROW OR RAKE OPERATED ACROSS THE SLOPE AS MUCH AS POSSIBLE.

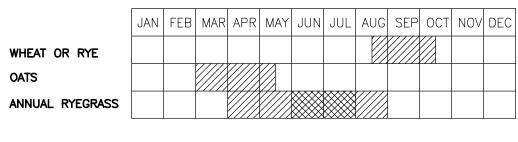
8) ROLL THE TOPSOIL WITH A WATER BALLAST ROLLER WEIGHING 100 TO 300 POUNDS DEPENDING ON SOIL TYPE. ROLL WITH TOPSOIL IN A SEMI-DRY CONDITION IN TWO OPPOSITE DIRECTIONS (RIGHT 9) RAKE OR SCARIFY AND CUT OR FILL IRREGULARITIES THAT DEVELOP AS REQUIRED AND AGAIN ROLL UNTIL AREA IS TRUE AND UNIFORM, FREE FROM LUMPS, DEPRESSIONS AND IRREGULARITIES.

10) SOW SEED WITH ADEQUATE EQUIPMENT AT A TIME WHEN LITTLE OR NO WIND IS BLOWING. BROADCAST HALF OF SEED IN ONE DIRECTION AND THE OTHER HALF IN THE OPPOSITE DIRECTION (RIGHT OR HAY MULCH AT A RATE OF 2 TONS PER ACRE. APPLY TACKIFIER TO STABILIZE MULCH. 12) HYDROSEEDING IS ACCEPTABLE METHOD OF SEEDING.

13) KEEP TOPSOIL RELATIVELY MOIST UNTIL LAWN IS ESTABLISHED 14) RESEED AREAS THAT DO NOT SHOW PROMPT GERMINATION AT 14 DAY INTERVALS UNTIL AN ACCEPTABLE STAND OF GRASS IS ASSURED. OF ONE YEAR GUARANTEE PERIOD WITH NO BARE SPOTS COMPRISING MORE THAN 2% OF ANY LAWN AREA. ANY AREA SO NOTED WILL BE REWORKED UNTIL AN ACCEPTABLE STAND OF GRASS IS ESTABLISHED. 16) ALL LAWNS TO BE MAINTAINED UNTIL FINAL INSPECTION BY LANDSCAPE DESIGNER BUT NOT LESS THAN 60 DAYS FROM TIME OF INSTALLATION. MAINTENANCE TO INCLUDE WATERING, WEEDING, CULTIVATION, MULCHING, MOWING AND ALL OTHER NECESSARY OPERATIONS REQUIRED FOR PROPER ESTABLISHMENT OF

# 15' 30' 45' SCALE: 1"=30'

TEMPORARY SEEDING DATES:



PERMANENT SEEDING DATES

JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC NON-IRRIGATED\* IRRIGATED DORMAT SEEDING\*\*

IRRIGATION NEEDED DURING THIS PERIOD, TO CONTROL EROSION AT TIMES OTHER THAN IN THE SHADED AREAS, USE MULCH LATE SUMMER SEEDING DATES MAY BE EXTENDED 5 DAYS IF

MULCH IS APPLIED.

\*\* INCREASE SEEDING APPLICATION BY 50%

FIGURE 5-3 TEMPORARY SEEDING: 1000 SQ.FT. ACRE WHEAT OR RYE 3.5 LBS. 2 BU. COVER SEED 1" TO 1-1/2" DEEP SPRING OATS 2.3 LBS. 3 BU. COVER SEED TO 1" DEEP ANNUAL RYEGRASS 1 LB. 40 LBS. COVER SEED TO 1/4" DEEP

### SEEDING SCHEDULE

\* NOT NECESSARY WHERE MULCH IS APPLIED.

<u>LEGEND</u>:

EXISTING SANITARY SEWER W/ MANHOLE EXISTING STORM SEWER W/ END SECTION, MANHOLE, YARD INLET,

AND CURB INLET

EXISTING CONTOUR LINE FILTER FENCE

PERMANENT-SEEDING WITH NORTH AMERICAN GREEN SC-150 BLANKET OR EQUIVALENT PERMANENT-SEEDING

GENERAL NOTES:

1. FERTILIZER AND AGRICULTURAL LIMESTONE SHALL BE SPREAD UNIFORMLY OVER THE AREA TO BE SEEDED. THEY SHALL BE MIXED INTO THE TOP 2" OF SOIL WITH A DISK HARROW, ROTARY TILLER, OR OTHER APPROVED EQUIPMENT. FERTILIZER SHALL BE SPREAD AT THE RATE OF 400 POUNDS PER ACRE, AND AGRICULTURAL LIMESTONE AT THE RATE OF 1/2 TON PER ACRE UNLESS

2. TEMPORARY SEEDING: THE AREAS WHERE STRIPPING, CUTS OR FILLS HAVE BEEN GRADED SHALL BE SEEDED FOR SILT AND EROSION PROTECTION WITH ONE OF THE FOLLOWING METHODS: A. EARLY SPRING MIX: 100% OATS SEEDING RATE: 50 LBS./ACRE

B. SPRING OR LATE FALL MIX: 100% ANNUAL RYE SEEDING RATE: 50 LBS./ACRE

C. FALL MIX: 100% PERENNIAL RYE SEEDING RATE: 50 LBS./ACRE

STRAW OR MULCH AS APPROVED BY THE ENGINEER SHALL BE APPLIED AT A RATE OF 2 TONS PER

3. MULCH-SEEDING: MULCH-SEEDING SHALL BE AS PER I.S.W.Q.M. SPECIFICATIONS, DATED OCTOBER 2007. FERTILIZER SHALL BE 12-12-12 APPLIED AT THE RATE OF 400 POUNDS PER ACRE. SEED MIXTURE SHALL BE 60 POUNDS PER ACRE OF PERENNIAL RYE GRASS AND 60 POUNDS PER ACRE OF KENTUCKY 31 FESCUE OR ALTA FESCUE.

4. WATER QUALITY MAINTENANCE— AT THE COMPLETION OF CONSTRUCTION ALL EXCESS SOIL AND OTHER MATERIAL SHALL BE REMOVED FROM THE SITE. TO ENSURE PROPER WATER QUALITY THE SITE AND ITS STORM WATER CONVEYANCE FACILITIES SHALL BE INSPECTED AT REGULAR INTERVALS AND AFTER ALL MAJOR RAIN EVENTS. THE STORM WATER CONVEYANCE SYSTEMS SHALL BE KEPT FREE OF DEBRIS AND FLUIDS THAT COULD POTENTIALLY POLLUTE STORM WATER RUNOFF. 5. PROJECT SITE OWNER OR THEIR REPRESENTATIVE, KNOWLEDGEABLE IN EROSION AND SEDIMENT CONTROL, SHALL INSPECT THE SITE FOR STORM WATER POLLUTION PREVENTION DEFICIENCIES AT LEAST WEEKLY AND AGAIN WITHIN 24 HOURS OF EVERY 1/2 INCH RAIN EVENT. 6. ALL HAZARDOUS MATERIALS USED DURING THE CONSTRUCTION OF THIS SITE SHALL BE HANDLED AT ALL TIMES ACCORDING TO RECOMMENDATIONS IN THE MATERIAL SAFETY DATA SHEETS PROVIDED BY THE MANUFACTURER. SITE CONTRACTOR TO IMPLEMENT A SPILL PREVENTION PLAN PRIOR TO

7. ALL EROSION CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE "INDIANA STORM WATER QUALITY MANUAL" AND THE SCS "FIELD OFFICE TECHNICAL GUIDE".

### SECTION 1 — EMERGENCY RESPONSE NUMBERS

JOHNSON COUNTY SOIL AND WATER

EMERGENCY RESPONSE TO ANY LIFE THREATENING PROBLEM 911 CITY OF FRANKLIN FIRE DEPARTMENT 888-736-3650 CITY OF FRANKLIN POLICE DEPARTMENT 317-736-3670 CITY OF FRANKLIN MS4 317-346-1212 INDIANA DEPARTMENT OF NATURAL RESOURCES 812-477-8773 INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT 317-233-7745

> THIS PLAN TO BE USED FOR EROSION CONTROL PURPOSES ONLY. THE CITY ENGINEER AND MS4/EROSION CONTROL INSPECTOR HAS THE RIGHT TO REQUIRE ADDITIONAL EROSION CONTROL MEASURES IN THE FIELD AS CONDITIONS WARRANT.

317-342-5594

ALL EROSION CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE INDIANA STORM WATER QUALITY MANUAL DATED OCTOBER 2007 BY THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM).

### NOTICES AND PERMITS

- 2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES IN THE VICINITY OF THE CONSTRUCTION AREA PRIOR TO STARTING ANY CONSTRUCTION.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR NOTIFICATION AND COORDINATION OF ALL CONSTRUCTION WITH THE RESPECTIVE UTILITY COMPANIES PRIOR TO STARTING ANY CONSTRUCTION.

# ALL EROSION CONTROL MEASURES INDICATED SHALL BE MAINTAINED BY THE CONTRACTOR AND OWNER

THE CITY OF FRANKLIN RESERVES THE RIGHT TO REQUIRE ADDITIONAL ONSITE CONTROLS AS DEEMED NECESSARY TO MAINTAIN COMPLIANCE WITH 327 IAC 15-5 AND THE CITY'S STORMWATER MANAGEMENT ORDINANCE. ALL EROSION AND SEDIMENT CONTROL, BEST MANAGEMENT PRACTICES AND POLLUTION PREVENTION MEASURES MUST BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE INDIANA STORMWATER QUALITY MANUAL.



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OCTOBER 2, 2023

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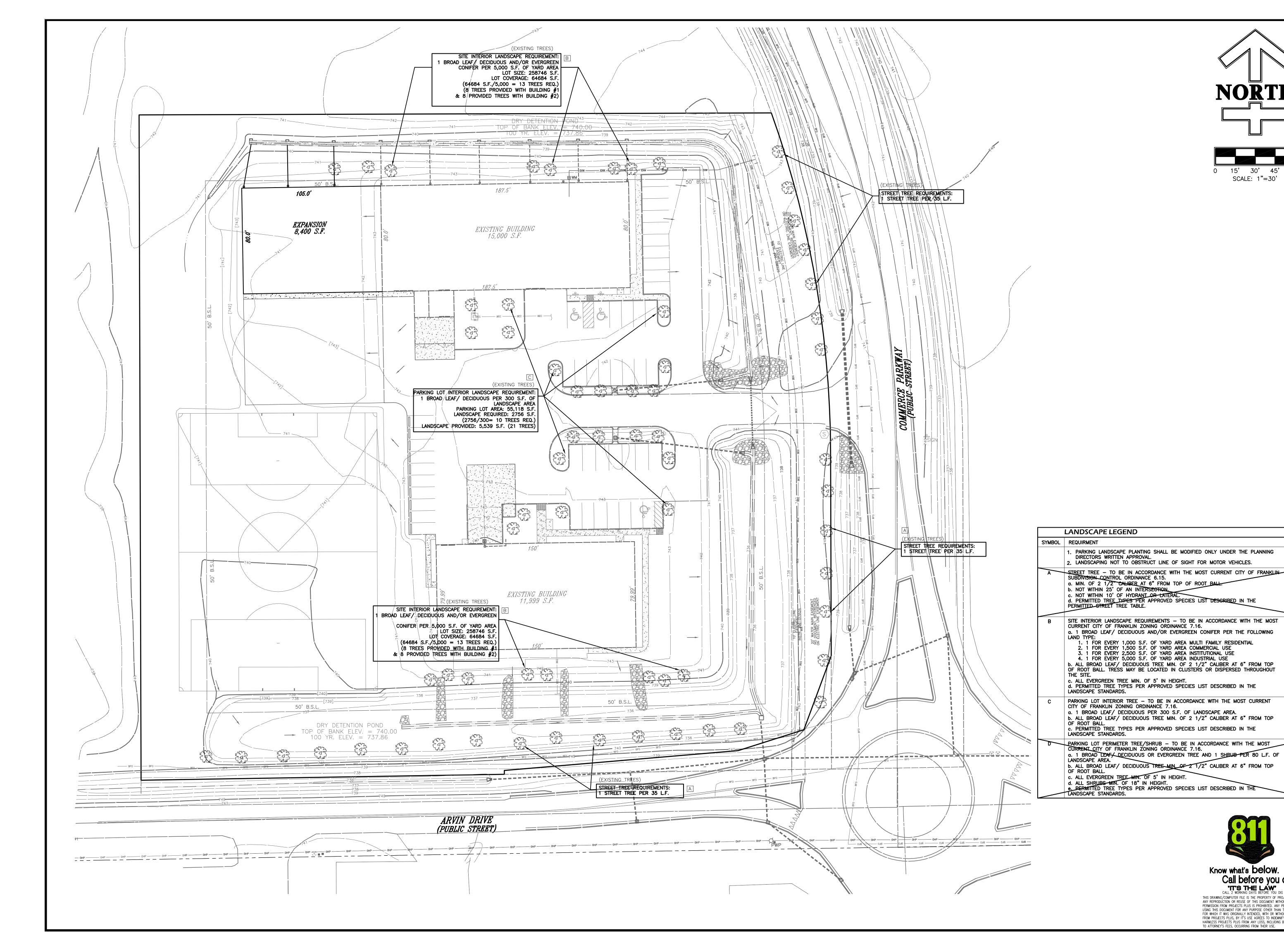
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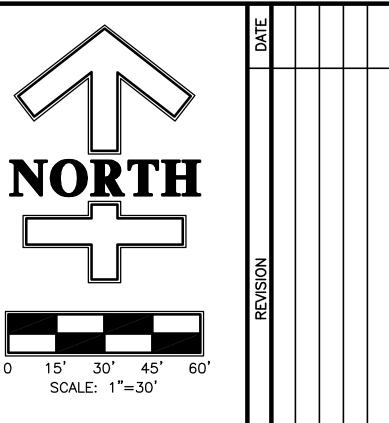
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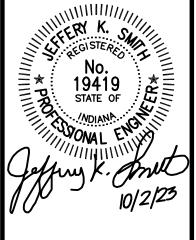
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### SITE WORK GENERAL NOTES AND SPECIFICATIONS

WHEREVER A CONFLICT OR DEFICIENCY OCCURS BETWEEN THE CONSTRUCTION STANDARDS AND SPECIFICATIONS ADOPTED BY THE CITY OF FRANKLIN PLANNING AND ENGINEERING DEPARTMENTS. THE HIGHER OR MORE RESTRICTIVE STANDARD OR SPECIFICATION SHALL APPLY.

ORDINANCE CHAPTER 102 OF CITY OF FRANKLIN AS REVISED AND

### REFERENCE MATERIAL: SUBDIVISION CONTROL AND LAND DEVELOPMENT

NOTICES AND PERMITS THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING OR VERIFYING THAT ALL PERMITS AND APPROVALS ARE OBTAINED FROM THE RESPECTIVE CITY, COUNTY AND STATE AGENCIES

CURRENT I.N.D.O.T. STANDARD SPECIFICATIONS

- PRIOR TO STARTING CONSTRUCTION. 2. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES IN THE VICINITY OF THE CONSTRUCTION AREA PRIOR TO STARTING ANY CONSTRUCTION. IT SHALL BE THE CONTRACTORS RESPONSIBILITY FOR
- NOTIFICATION AND COORDINATION OF ALL CONSTRUCTION WITH THE RESPECTIVE UTILITY COMPANIES, PRIOR TO STARTING ANY CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND CONTRACTOR TO MAINTAIN QUALITY CONTROL THROUGHOUT THE
- PROJECT: FAILURE TO DO SO MAY RESULT IN REMOVAL AND REPLACEMENT OF THE DEFECTIVE WORK. IT IS RECOMMENDED THAT THE DEVELOPER HAVE A QUALIFIED INSPECTOR ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION. . It is essential that the work to be done in CONJUNCTION WITH THIS PROJECT SHALL BE INSTALLED
- ACCORDING TO THESE SPECIFICATIONS. THE ENGINEER WILL BE REQUIRED TO CERTIFY TO CERTAIN PORTIONS OF THIS PROJECT UPON COMPLETION. THEREFORE, IT IS NECESSARY TO OBTAIN APPROVAL AND ACCEPTANCE BY THE CITY OF FRANKLIN PLANNING AND ENGINEERING DEPT. THAT CONSTRUCTION WAS DONE IN COMPLIANCE WITH THESE PLANS AND SPECIFICATIONS.
- B. CLEARING AND GRUBBING CLEARING AND GRUBBING SHALL CONSIST OF CUTTING REMOVAL AND SATISFACTORY DISPOSAL OF ALL TREES, DOWN TIMBER, BRUSH, PROJECTING ROOTS, STUMPS, RUBBISH, BOULDERS, BROKEN CONCRETE, FENCING (AS DESIGNATED) AND OTHER MATERIAL ON THE PROJECT SITE AND WITHIN THE BOUNDARY AS SHOWN ON THE CONSTRUCTION DOCUMENTS AND/OR AS DESIGNATED BY "CONSTRUCTION LIMITS".
- 2. SPECIAL CARE SHALL BE TAKEN TO INSURE THAT TREES TO BE LEFT REMAINING IN THE PROJECT AREA SHALL NOT RECEIVE LIMB, BARK OR ROOT INJURIES. WHEN SUCH INJURIES OCCUR. ALL ROUGH EDGES OF SCARRED AREAS SHALL BE REMOVED IN ACCORDANCE WITH ACCEPTED HORTICULTURAL PRACTICE AND THE SCARS COATED
- THOROUGHLY WITH AN ASPHALTIC BASE TREE PAINT 3. ALL "UNSUITABLE MATERIAL" FROM CLEARING OPERATIONS STATED IN ITEM B-1 SHALL BE REMOVED TO DISPOSAL AREA(S) OFF OF THE PROJECT SITE.
- 4. MATERIALS SHALL NOT BE DISPOSED OF BY BURNING UNLESS APPROVED BY THE LOCAL FIRE MARSHAL.
- C. TREE REMOVAL AND PROTECTION 1. TREES SHALL BE REMOVED FROM THE PROJECT SITE ONLY WHERE THE AREA IS TO BE OCCUPIED BY ROAD AND SURFACED AREAS IN ACCORDANCE WITH SPECIFICATIONS OF THE CITY OF FRANKLIN PLANNING AND HIGHWAY DEPARTMENTS.
- 2. TREES SHALL BE REMOVED FROM THE PROJECT SITE AS DIRECTED BY THE DEVELOPER AND SO DESIGNATED. 3. TREES SHALL BE REMOVED FROM THE PROJECT SITE WHERE THEY INTERFERE DIRECTLY WITH THE PLACEMENT OF STORM OR SANITARY SEWERS AND THAT SUCH EXCAVATION IS OR WILL BE FATAL TO SUCH ADJACENT TREES
- . THE CONTRACTOR SHALL ENDEAVOR TO SAVE AND PROTECT TREES OF VALUE AND WORTH WHICH DO NOT IMPAIR CONSTRUCTION OF IMPROVEMENTS AS DESIGNATED. IN THE EVENT CUT OR FILL EXCEEDS 0.5 FOOT OVER THE ROOT AREA, THE DEVELOPER SHALL BE CONSULTED WITH RESPECT TO PROTECTIVE MEASURES TO BE TAKEN, IF ANY, TO PRESERVE SUCH TREES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE METHOD FOR PROTECTION OF TOPS, TRUNKS AND ROOTS OF EXISTING TREES ON THE PROJECT SITE THAT ARE TO REMAIN EXISTING TREES SUBJECT TO CONSTRUCTION DAMAGE SHALL BE BOXED, FENCED OR OTHERWISE PROTECTED BEFORE ANY ADJACENT WORK IS STARTED. EARTH OR MATERIAL AND EQUIPMENT SHALL NOT BE STOCKPILED OR STORED WITHIN THE SPREAD OF BRANCHES. BRANCHES WHICH NEED TO BE REMOVED OR ARE BROKEN SHALL BE NEATLY TRIMMED AND SCARS SHALL BE COVERED WITH TREE PAINT.

# THE CONTRACTOR SHALL VERIFY THAT ALL TOPSOIL HAS BEEN

- REMOVED IN THE AREAS TO BE OCCUPIED BY ROAD, WALKS AND DESIGNATED BUILDING AREAS. TOPSOIL SHALL BE REMOVED TO A DEPTH OF SIX (6) INCHES OR DEEPER, IF NECESSARY, TO REMOVE VEGETABLE MATTER WHERE REQUIRED. 2. TOPSOIL SHALL BE KEPT SEPARATED FROM SUITABLE FILL MATERIALS AND SHALL NOT BE USED AS FILL UNDER
- PAVEMENT AND/OR BUILDING AREAS. . TOPSOIL SHALL BE STORED AT A LOCATION WHERE IT DOES NOT INTERFERE WITH CONSTRUCTION OPERATIONS. EXCESS TOPSOIL SHALL BE USED FOR FINISH GRADING OF SITE. OF DRAINAGE SWALES, YARDS OF NEW RESIDENCES, BUFFER
- 4. TOPSOIL SHALL BE REASONABLY FREE FROM SUBSOILS DEBRIS AND STONES.

- THE CONTRACTOR SHALL PERFORM ALL GRADING OPERATIONS TO BRING SUBGRADES, AFTER FINAL COMPACTION, TO THE REQUIRED GRADES AND SECTIONS FOR SITE IMPROVEMENT 2. SUBGRADE SHALL BE PROOF ROLLED WITH SUITABLE EQUIPMENT AND ALL SPONGY AND OTHERWISE UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL
- SUBGRADE SHALL BE PREPARED IN COMPLIANCE WITH SECTION 207 OF THE CURRENT I.N.D.O.T. STANDARD SPECIFICATIONS, FOR ALL AREAS OF STREET CONSTRUCTION. 4. ALL FILL MATERIAL SHALL BE FORMED FROM SOIL FREE OF
- DELETERIOUS MATERIAL. PRIOR TO PLACEMENT OF FILL A SAMPLE OF THE PROPOSED FILL MATERIAL SHOULD BE SUBMITTED TO A SOILS ENGINEER FOR HIS APPROVAL AND COPIES OF THE SOLID PROCTORS SHALL BE SUBMITTED TO PROJECTS PLUS.
- . ALL FILLS IN EXCESS OF TWO (2) FEET SHALL BE CONSIDERED AS STRUCTURAL FILLS AND AS SUCH SHALL B COMPACTED IN SIX INCH LIFTS WITH COMPACTION TESTS FOR EACH LIFT. COMPACTION FOR ALL STRUCTURAL FILL AREAS SHALL BE 95 PERCENT STANDARD PROCTOR AND TEST RESULTS SHALL BE SUBMITTED TO PROJECTS PLUS.
- . ALL FILL MATERIAL IN AREAS OUTSIDE OF BUILDING AND PAVEMENT AREAS SHALL BE COMPACTED LIGHTLY AND PROTECTED FROM EROSION BY ONE OR MORE OF THE METHODS OF ITEM G. ALL AREAS WHERE BUILDING AND PAVEMENT CONSTRUCTION IS FEASIBLE SHALL NOT HAVE UNSUITABLE MATERIAL PLACED IN THAT LOCATION, AND FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR OR BETTER.

### . STANDARD SANITARY SEWER CONSTRUCTION I. CURRENT CITY OF FRANKLIN SPECIFICATIONS SHALL

- PREVAIL AS TO MATERIALS AND METHODS OF CONSTRUCTION 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING OR VERIFYING ALL PERMITS FOR ALL OR PORTIONS OF THIS PROJECT PRIOR TO STARTING ANY CONSTRUCTION. SANITARY SEWERS SHALL BE INSTALLED IN ACCORDANCE WITH 327 IAC 3-6 TECHNICAL STANDARDS FOR SANITARY COLLECTION
- SYSTEMS, AND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT AND PERMITS SHALL BE OBTAINED PRIOR TO STARTING AND CONSTRUCTION 4. SANITARY SEWERS SHOWN ON THE CONSTRUCTION PLANS WERE DESIGNED WITH POLY-VINYL CHLORIDE PIPE IN ACCORDANCE WITH A.S.T.M. D-3034, S.D.R.-35 FOR PIPES THAT ARE 15 INCH IN DIAMETER OR LESS AND ARE LESS THAN 15 FEET DEEP. PVC PIPE AND FITTINGS THAT ARE GREATER THAN 18 INCH IN DIAMETER SHALL CONFORM TO A.S.T.M. F-679. ALL SANITARY PIPES GREATER THAN 15 FEET DEEP SHALL BE RATED AS HEAVY WALL S.D.R.-26. ALL FITTINGS REGARDLESS OF DEPTH SHALL BE NOTED AS HEAVY
- WALL S.D.R.-26. THE FORCEMAIN SHALL BE AWWA C-900, DR14. NOT USED SANITARY MANHOLES SHALL BE PRECAST CONCRETE IN ACCORDANCE WITH A.S.T.M. C-478. ALL JOINTS AND LIFTING HOLES ON THE EXTERIOR, SHALL BE SEALED WITH NON-SHRINK GROUT. INTERIOR LIFT HOLES PROHIBITED.

- 7. CASTINGS SHALL BE OF TYPE AND KIND AS SHOWN ON THE DETAIL SHEET.
- 8. PLASTIC SANITARY SEWERS SHALL BE MARKED FOR EASY IDENTIFICATION. 9. WATER AND SEWER LINE CROSSINGS AND SEPARATIONS SHALL BE IN ACCORDANCE WITH TEN STATES STANDARDS AND LOCAL
- a. WHERE WATER LINES AND SEWER LINES CROSS AND THE WATER LINE CANNOT BE PLACED ABOVE THE SEWER LINE A MINIMUM OF 18" WITH A MINIMUM COVER OF 48", THE SEWER LINE SHALL BE CONSTRUCTED OF WATERWORKS GRADE CAST IRON PIPE WITH MECHANICAL JOINTS. b. WHERE WATER LINES AND SANITARY SEWER LINES RUN PARALLEL WITH ONE ANOTHER, A MINIMUM OF 10'
- HORIZONTAL SEPARATION SHALL BE MAINTAINED. 10. ALL FUTURE SEWER INSTALLATION, EITHER CONNECTED TO OR EXTENDED FROM THIS SYSTEM, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE SPECIFICATIONS
- 11. NO ROOF DRAINS, FOOTING DRAINS, AND/OR SURFACE WATER DRAINS MAY BE CONNECTED TO THE SANITARY SEWER SYSTEMS, INCLUDING TEMPORARY CONNECTIONS DURING CONSTRUCTION, INCLUDING SUMP PUMPS, ARE PROHIBITED 12. BUILDINGS SHALL BE SERVICED BY A 6" MINIMUM SANITARY
- SEWER LATERAL. THE ENDS SHALL BE PLUGGED AND SEALED WITH A WATER TIGHT PLASTIC DISC. WYES ARE TO BE TILTED UP TO 45 DEGREES FROM THE HORIZONTAL. WITI SUITABLE FITTINGS FOR ALL CHANGES IN DIRECTION. IF 6" PVC LATERALS ARE USED, THEY SHALL BE IN ACCORDANCE WITH A.S.T.M. D-3034 AND A.S.T.M. D-2321 FOR PROPER INSTALLATION. MAGNETIC TAPE LOCATOR SHALL BE PLACED AT THE END OF EACH LATERAL TO IDENTIFY THE LOCATION OF THE LATERAL.
- 13. THE CONTRACTOR SHALL PROVIDE PROJECTS PLUS WITH "AS-BUILT" LATERAL LOCATIONS. 14. MANHOLE SECTIONS SHALL HAVE "O" RINGS WHICH SHALI
- MEET A.S.T.M. C-433. 15. MANHOLE WATERSTOPS SHALL BE INSTALLED AT ALL CONNECTIONS TO MANHOLES, WHERE FLEXIBLE TYPE MANHOLE
- CONNECTIONS ARE NOT USED. 16. ALL PRECAST MANHOLES SHALL BE BEDDED ON A GRANULAR 17. THE CONTRACTOR SHALL REMOVE BY PUMPING OR OTHER
- SUITABLE METHODS ANY WATER WHICH MAY ACCUMULATE IN 18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TESTS FOR LEAKAGE, INFILTRATION AND DEFLECTION AS ESTABLISHED BY THE CITY OF FRANKLIN, I.D.E.M. AND THE STATE BOARD OF HEALTH, AND THE SANITARY SEWER CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CERTIFIED TESTS RESULTS O THE ENGINEER. ANY PORTIONS NOT PASSING SAID TESTS

FOR ACCEPTANCE SHALL BE REPAIRED OR REPLACED AT THE

SANITARY SEWER CONTRACTORS EXPENSE, INCLUDING RE-

a. DEFLECTION TEST 1a. DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS TO PERMIT STABILIZATION OF THE SOIL-PIPE SYSTEM.

EXCAVATION AND BACKFILL.

- 1b. NO PIPE SHALL EXCEED A DEFLECTION OF 5 PERCENT. IF DEFLECTION EXCEEDS 5 PERCENT, REPLACEMENT OR CORRECTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH REQUIREMENTS IN THE APPROVED SPECIFICATIONS.
- 1c. THE RIGID BALL OR MANDREL USED FOR THE DEFLECTION TEST SHALL HAVE A DIAMETER NOT LESS THAN 95 PERCENT OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE DEPENDING ON WHICH IS SPECIFIED IN THE ASTM SPECIFICATION, INCLUDING THE APPENDIX, TO WHICH THE PIPE IS MANUFACTURED. THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES.
- 1a. THE AIR TEST SHALL, AS A MINIMUM, CONFORM TO THE TEST PROCEDURE DESCRIBED IN ASTM C-828 FOR CLAY PIPE ASTM C 924 FOR CONCRETE PIPE. ASTM F-1417 FOR PLASTIC PIPE, AND FOR OTHER MATERIALS TEST PROCEDURES APPROVED

1b. FOR AIR TESTING, (TIME-PRESSURE DROP METHOD) EACH END OF THE SECTIONOF PIPE TO BE TESTED SHALL BE PLUGGED WITH AIR STOPPERS FURNISHED BY THE CONTRACTOR.AIR SHALL SLOWLY BE SUPPLIED TO THE PLUGGED PIPE NSTALLATION BY AN AIR COMPRESSOR, FURNISHED BY THE CONTRACTOR, UNTIL PRESSURE REACHES 4.0 P.S.I.. IF GROUNDWATER ELEVATION IS ABOVE INVERT OF SEWER BEING TESTED, AN ADDITIONAL 1.0 P.S.I. OF AIR PRESSURE SHALL BE ADDED FOR EACH 2.3 FEET OF WATER ABOVE THE INVERT OF THE SEWER. AT LEAST 2 MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE

THE RATE OF AIR LOSS SHALL THEN BE DETERMINED BY MEASURING THE TIME INTERVAL REQUIRED FOR PRESSURE TO DECREASE FROM 3.5 TO 2.5 PSI. THE PRESSURE GAUGE AND STOP WATCH WILL BE FURNISHED BY THE

- 1c. THE PIPELINE SHALL BE CONSIDERED ACCEPTABLE WHEN TESTED AT AN AVERAGE PRESSURE OF 3.0 PSI IF (1) THE TOTAL RATE OF AIR LOSS FROM ANY SECTION TESTED IN ITS ENTIRETY BETWEEN MANHOLE AND CLEANOUT STRUCTURE DOES NOT EXCEED 2.0 CFM, OR (2) THE SECTION UNDER TEST DOES NOT LOSE AIR AT A RATE GRÉATER THAN 0.0030 CFM PER SQUARE FOOT OF INTERNAL PIPE SURFACE.
- 1d. THE REQUIREMENTS OF THIS SPECIFICATION SHALL BE CONSIDERED SATISFIED IF THE TIME REQUIRED IN SECONDS FOR THE PRESSURE TO DECREASE FROM 3.5 TO 2.5 PSI IS NOT LESS THAN SHOWN IN THE "ALLOWABLE TIME TABLE".

### ALLOWABLE TIME TABLE:

PIPE	MINIMUM	LENGTH FOR	TIME FOR	SPECIFICATION TIME FOR LENGTH (L) SHOWN, MIN;S								
DIAMETER in.	TIME MINUS.	MINIMUM TIME FT.	LONGER LENGTHS	100 FT.	150 FT.	200 FT.	250 FT.	300 FT.	350 FT.	400 FT.	450 FT.	
4	3:48	597	0.380	3:48	3:48	3:48	3:48	3:48	3:48	3:48	3:48	Н.
6	5:40	388	0.854	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24	l
8	7:34	298	1.520	7:34	7:34	7:34	7:34	7:34	8:52	10:06	11:24	l
10	8:26	239	2.374	8:26	8:26	8:26	8:53	11:52	13:51	15:49	17:48	l
12	11:20	199	3.418	11:20	11:24	11:24	14:15	17:06	19:56	22:47	25:38	l
16	14:10	159	5.342	14:10	14:10	17:48	22:15	28:42	31:09	35:38	40:04	l
18	17:00	133	7.892	17:00	19:18	25:38	32.:03	38:27	44:62	51:16	57:41	l
21	19:50	114	10.470	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31	l
24	22:40	99	13.674	22:47	34:11	48:34	56:58	68:22	79:46	81:10	102:33	l
27	26:30	88	17.808	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48	l
30	28:20	80	21.366	35:37	58:25	71:13	89:02	106:50	124:38	142:26	160:16	l
33	31:10	72	26.852	48:05	64:38	86:10	107:43	128:16	150:43	172:21	193:53	l
36	34:00	68	30.768	51:17	78:66	102:34	128:12	163:50	179:29	205:07	210:46	l

1e. FOR EXFILTRATION TEST, THE INLET END OF THE UPSTREAM AND DOWNSTREAM MANHOLES SHALL BE CLOSED WITH WATERTIGHT BULKHEADS. THEN THE SEWER AND THE UPSTREAM MANHOLE SHALL BE FILLED WITH WATER UNTIL THE ELEVATION OF WATER IN THE UPSTREAM MANHOLE IS TWO FEET HIGHER THAN THE TOP OF THE PIPE IN THE LINE BEING TESTED, OR TWO FEET ABOVE THE EXISTING GROUND WATER IN THE TRENCH, WHICHEVER IS THE HIGHER ELEVATION. THE EXFILTRATION WILL BE MEASURED BY DETERMINING THE AMOUNT OF WATER REQUIRED TO MAINTAIN THE INITIAL WATER ELEVATION FOR ONE HOUR FROM THE START OF THE TEST.

### c. SANITARY MANHOLE VACUUM TESTING

ALL MANHOLE VACUUM TESTS SHALL BE CONDUCTED IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF FRANKLIN. ALL MANHOLE TESTS SHALL BE IN ACCORDANCE WITH ASTMC 1244-93 STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY THE NEGATIVE AIR PRESSURE (VACUUM) TEST. CITY OF FRANKLIN MAY HAVE ADDITIONAL REQUIREMENTS.

THE VACUUM TEST EQUIPMENT SHALL CONSIST OF: INFLATABLE PLUGS FOR ALL INCOMING AND OUTGOING SEWER LINES; AN INFLATABLE TEST COLLAR TO SEAL THE MANHOLE AT THE MANHOLE FRAME; AND A VACUUM PUMP. A VACUUM GAUGE SHALL BE LOCATED IN-LINE BETWEEN THE TEST COLLAR AND THE PUMP TO ACCURATELY INDICATE THE VACUUM IN INCHES OF MERCURY WITHIN THE MANHOLE. THE VACUUM GAUGE SHALL HAVE A RANGE TO NO MORE THAN THIRTY (30) INCHES OF MERCURY, WITH SCALE MARKINGS OF NO GREATER THAN ONE-HALF (1/2) INCH OF MERCURY VACUUM AND AN ACCURACY TO WITHIN ± TWO PERCENT (2%) OF TRUE VACUUM.

THE VACUUM TEST SHALL BE CONDUCTED BY PLUGGING ALL INCOMING AND OUTGOING SEWER LINES IN THE MANHOLE AT A LOCATION BEYOND THE CONNECTION OF THE SEWER PIPE WITH THE MANHOLE. ALL PLUGS SHALL BE BLOCKED IN PLACE SO AS NOT TO MOVE DURING THE TEST. THE VACUUM TESTING COLLAR SHALL BE INFLATED IN THE FRAME IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. A VACUUM OF TEN (10) INCHES OF MERCURY SHALL BE DRAWN AND THE VACUUM PUMP TURNED OFF AND THE VALVE BETWEEN THE VACUUM PUMP AND THE VACUUM GAUGE SHALL BE TURNED OFF.

THE TIME PERIOD WHICH IS TAKEN FOR THE VACUUM TO FALL FROM TEN INCHES (10") OF MERCURY TO NINE INCHES (9") OF MERCURY SHALL BE DETERMINED. IF THE TIME TAKEN FOR THE VACUUM TO REDUCE THE TEN INCHES (10") OF MERCURY TO NINE INCHES (9") OF MERCURY IS LESS THAN THE TIME INDICATED IN THE FOLLOWING TABLE. THEN THE MANHOLE WORK SHALL BE CONSIDERED NOT ACCEPTABLE AND SHALL BE REJECTED. IF THE TIME IS EQUAL TO OR EXCEEDS THE TIME INDICATED BELOW, THE MANHOLE WORK SHALL BE ACCEPTED.

# DEPTH (FT.) DIAMETER= 48" FOR EACH ADDITIONAL 2' ADD: 5

**MANHOLE** 

CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE RESULTS OF EACH MANHOLE VACUUM TEST. SUCH REPORTS SHALL INCLUDE A DESCRIPTION OF THE LOCATION OF THE MANHOLE, THE TIME, DATE AND WEATHER OF THE TEST. A LIST OF ALL PERSONS PRESENT. THE DIAMETER AND DEPTH OF THE MANHOLE AND THE ALLOWABLE TEST RESULTS, AND THE ACTUAL TEST

ALL MANHOLES SHALL BE REPAIRED BY CONTRACTOR AND RETESTED AS DESCRIBED ABOVE UNTIL A SUCCESSFUL TEST IS MADE. AFTER EACH TEST, THE TEMPORARY PLUGS SHALL BE REMOVED.

- 18. PIPE SHALL BE LAID IN OPEN TRENCHES, EXCEPT WHEN CONDITIONS REQUIRE AND THE APPROPRIATE APPROVING AGENCIES GIVE WRITTEN PERMISSION FOR TUNNELING OR
- JACKING OF PIPE. 19. TRENCH SHALL BE OPENED SUFFICIENTLY AHEAD OF PIPE LAYING TO REVEAL OBSTRUCTIONS AND SHALL BE PROPERLY PROTECTED AND/OR BARRICADED WHEN LEFT UNATTENDED. 20. TRENCHES SHALL BE SHEETED AND BRACED AS NECESSARY TO
- PROTECT WORKMEN AND ADJACENT STRUCTURES. ALL TRENCHING SHALL BE DONE IN ACCORDANCE WITH I.O.S.H.A. STANDARDS TO PROTECT WORKMEN. 21. THE FLOW CHANNELS FOR THE SANITARY SEWER MANHOLES SHALL BE U-SHAPED WITH THE BENCHWALLS EXTENDING TO
- THE CROWN OF THE INCOMING AND OUTGOING PIPES. CHANGES IN SIZE AND GRADE SHALL BE MADE BY SMOOTH TRUE CURVES FOR ALL CONNECTING SEWERS AT EACH
- 22. NUMBER 53 STONE BACKFILL SHALL BE REQUIRED UNDER ALI PAVEMENT AREAS AND WITHIN 5' OF THE EDGE OF PAVEMENT 23. ALL TRENCHES UNDER PAVEMENT SHALL BE COMPACTED TO 95 PERCENT MODIFIED PROCTOR. 25. THE MINIMUM CELL CLASSIFICATION FOR P.V.C. SHALL BE 12454B OR C PER A.S.T.M. STANDARDS
- 24. ALL GRAVITY AND FORCEMAIN PIPE SHALL BE INSTALLED WITH BELL END OF THE PIPE AT THE UPSTREAM SIDE OF FLOW OR AT THE END IN WHICH THE FIRST RECEIVES THE FLOW.
- 25. ALL FORCEMAIN SHALL BE HYDROSTATICALLY TESTED. THE FORCEMAIN TEST SECTION SHALL BE SLOWLY FILLED WITH WATER AND PRESSURIZED TO A TEST PRESSURE 50 HIGHER THAN NORMAL OPERATING PRESSURE. THE TEST DURATION SHALL BE A MINIMUM OF TWO (2) HOURS. SUITABLE MEANS SHALL BE PROVIDED BY THE CONTRACTOR FOR DETERMINING WATER LOST BY LEAKAGE UNDER THE TEST PRESSURE. NO PIPE INSTALLATION WILL BE ACCEPTED UNTIL OR UNLESS THIS LEAKAGE IS LESS THEN TEN (10) GALLONS PER INCH OF PIPE DIAMETE PER MILE OF PIPE PER DAY, AT THE DESIGNATED TEST
- 26. THE CITY OF FRANKLIN SHALL BE NOTIFIED IN ADVANCED OF ALL SANITARY SEWER TESTING.
- G. EROSION PROTECTION DURING CONSTRUCTION
- 1. THE CONTRACTOR SHALL PROVIDE ADEQUATE EROSION PROTECTION MEASURES DURING AND AFTER CONSTRUCTION SUCH AS BUT NOT LIMITED TO:
  - a. SILTATION BASINS o. SILT TRAPS STRAW BALE DAMS
  - d. SOIL CEMENT . MULCH AND SEEDING
- . SOIL STABILIZATION FABRIC a. JUTE NETTING 2. SPECIFIC EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AND INSTALLED PER THE EROSION CONTROL PLAN INCLUDED IN THESE CONSTRUCTION PLANS.
- 3. DETAILS AND PLACEMENT SPECIFICATIONS FOR THE ABOVE ITEMS ARE AVAILABLE ON REQUEST FROM THE ENGINEER. 4. ALL EROSION CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE INDIANA STORM WATER QUALITY MANUAL DATED OCTOBER 2007 BY THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM).
- . STORM SEWER STRUCTURES SHALL COMPLY WITH CURRENT SPECIFICATIONS OF THE CITY OF FRANKLIN PLANNING AND HIGHWAY DEPARTMENTS 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 CURRENT I.N.D.O.T. STANDARD SPECIFICATIONS
- 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. 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 SECTION 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. PRECAST CONCRETE AND STEEL FOR MANHOLES AND INLETS
- SHALL BE IN ACCORDANCE WITH A.S.T.M. C-478.
- 6. CASTINGS SHALL BE AS SHOWN ON THE DETAIL SHEET(S) FOR MANUFACTURER, TYPE AND MODEL NUMBER. . NUMBER 53 STONE BACKFILL SHALL BE REQUIRED UNDER ALL PAVEMENT AREAS AND TRENCHES WITHIN FIVE(5) FEET OF THE
- EDGE OF PAVEMENT 8. ALL TRENCHES UNDER PAVEMENT SHALL BE COMPACTED TO 95 PERCENT MODIFIED PROCTOR.

### I. UTILITIES

- 1. WATER SERVICE a. ALL MAIN WATER LINES SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE INDIANA-AMERICAN WATER COMPANY (UTILITY DEPT.) AND COORDINATION OF CONSTRUCTION OF THESE MAINS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE COORDINATED PRIOR TO STARTING ANY
- CONSTRUCTION. b. INSTALLATION AND MATERIALS FOR ALL WATER MAIN CONSTRUCTION SHALL MEET CITY OF FRANKLIN UTILITIES AND INDIANA STATE BOARD OF HEALTH
- SPECIFICATIONS. c. SEE SANITARY SEWER (F-9a & F9-b) FOR VERTICAL AND HORIZONTAL SEPARATIONS.

- d. GRANULAR BACKFILL (NO.53 STONE) SHALL BE REQUIRED FOR ALL UTILITIES CROSSINGS UNDER AND WITHIN 5 FEET OF PAVEMENT, AREAS AND TRENCHES UNDER PAVEMENT SHALL BE COMPACTED TO 95 PERCENT MODIFIED
- 2. ELECTRIC AND TELEPHONE a. CONDUIT SHALL BE REQUIRED FOR ALL CROSSINGS UNDER
- PAVEMENT AREAS. b. THE CONTRACTOR SHALL COORDINATE PLACEMENT OF THESE CONDUITS WITH THE POWER AND TELEPHONE COMPANIES PRIOR TO CONSTRUCTION.
- c. GRANULAR BACKFILL (NO.53 STONE) SHALL BE REQUIRED FOR ALL CROSSINGS UNDER PAVEMENT AREAS AND TRENCHES SHALL BE COMPACTED TO 95 PERCENT
- MODIFIED PROCTOR. d. CONCRETE PADS FOR ELECTRIC AND TELEPHONE TRANSFORMERS SHALL BE SET AT THE APPROXIMATE GROUND GRADE AS SHOWN ON THE SITE DEVELOPMENT GRADING PLANS FOR THE RESPECTIVE LOCATIONS. e. THE CONTRACTOR SHALL BE RESPONSIBLE FOR
- COORDINATING WITH EACH UTILITY FOR INSTALLATION OF ANY LINES OR CONDUITS OR ANY OTHER EQUIPMENT REQUIRED IN THE PROJECT. THE UTILITIES SHALL BE NOTIFIED PRIOR TO THE PLACEMENT OF PAVEMENT A MINIMUM OF 7 WORKING DAYS SO THAT THEY MIGHT INSTALL ANY CROSSINGS.
- J. GRANULAR BACKFILL SHALL BE IN ACCORDANCE WITH CURRENT I.N.D.O.T. STANDARD

### SPECIFICATIONS

K. PAVEMENT CONSTRUCTION 1. ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF CITY OF FRANKLIN PLANNING AND HIGHWAY DEPARTMENTS, AND IF THEIR ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARD SPECIFICATIONS

### 2. FLEXIBLE PAVEMENT

- . GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.
- d2. 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, B, C OR D AND CONFORM TO INDIANA DEPARTMENT OF TRANSPORTATION (I.N.D.O.T.) STANDARD SPECIFICATION SECTION 903.
- a3. 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 SPECIFICATION SECTION 903.
- a4. 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.
- a5. 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 SPECIFICATION SECTION 903.
- d6. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATION SECTION 408.
- a7. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATION SECTION 409.
- a8. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115), TYPE III.
- a9. SEAL COAT: ASPHALT PAVEMENT SEALER (BLACK) ASTM-
- b. ASPHALT-AGGREGATE MIXTURE ALL BITUMINOUS MIXTURES ARE TO CONFORM TO CURRENT I.N.D.O.T. SPECIFICATIONS. CONTRACTOR SHALL PROVIDE A JOB
- MIX FORMULA PER EACH TYPE OF ASPHALT PRIOR TO CONSTRUCTION
- b1. SURFACE COURSE: #11 b2. BINDER COURSE: #8
- b3. BASE COURSE: TYPE: #5D

### c. SURFACE PREPARATION

- c1. REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE SURFACE IMMEDIATELY BEFORE APPLYING PRIME COAT.
- 1. PROOF ROLL SUBGRADE SURFACE TO CHECK FOR UNSTABLE AREAS AND AREAS REQUIRING ADDITIONAL COMPACTION.
- 2. NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.
- c2. AGGREGATE BASE: AFTER PLACEMENT, PROOF ROLL COMPACTED AGGREGATE BASE SURFACE TO CHECK FOR UNSTABLE AREAS AND AREAS REQUIRING ADDITIONAL
- 1. NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT AGGREGATE BASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.
- 2. REMOVE LOOSE MATERIAL FROM COMPACTED AGGREGATE BASE SURFACE IMMEDIATELY BEFORE APPLYING PRIME COAT.
- c3. TACK COAT: APPLY TO CONTACT SURFACES OF PREVIOUSLY CONSTRUCTED ASPHALT AND SURFACES ABUTTING OR PROJECTING INTO ASPHALT CONCRETE PAVEMENT. DISTRIBUTE AT RATE OF 0.05 TO 0.15 GAL. PER SQ. YD. OF SURFACE.
- 1. ALLOW TO DRY UNTIL AT PROPER CONDITION TO RECEIVE PAVING.
- 2. EXERCISE CARE IN APPLYING BITUMINOUS MATERIALS TO AVOID SMEARING OF ADJOINING SURFACES. REMOVE AND CLEAN DAMAGED

### d. PLACING THE MIX

- d1. GENERAL: PLACE BITUMINOUS AGGREGATE MIXTURE ON PREPARED SURFACE, SPREAD AND STRIKE-OFF. SPREAD MIXTURE AT MINIMUM TEMPERATURE OF 225 DEGREES F (107 DEGREES C). PLACE INACCESSIBLE AND SMALL AREAS BY HAND. PLACE EACH COURSE TO REQUIRED GRADE, CROSS-SECTION, AND COMPACTED THICKNESS.
- d2. BASE COURSE, COMPACTED AGGREGATE: SPREAD AND COMPACT IN TWO LIFTS AS FOLLOWS: 1. FIRST LIFT: NO. 5'S SHALL BE A MINIMUM OF 4" OR 1/2 THE TOTAL DEPTH OF AGGREGATE. EXTEND THE FIRST LIFT 4" OR A DISTANCE EQUAL

TO THE DEPTH OF THE LIFT BEYOND THE SECOND

2. SECOND LIFT: SIZE NO. 53.

- d3. PRIME COAT: SUBBASE SURFACE SHALL BE PRIMED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SECTION 408 OF I.N.D.O.T. STANDARD SPECIFICATIONS.
- d4. HOT ASPHALT CONCRETE BINDER COURSE: SPREAD AND ROLL TO MINIMUM FINISH DEPTHS INDICATED ON
- d5. 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 SPECIFICATIONS.
- d6. SURFACE COURSE: SPREAD AND ROLL TO MINIMUM FINISH DEPTH INDICATED ON DETAILS. FINISH ELEVATION SHALL BE TRUE TO LINE AND GRADE WITHIN 1/2" OF TRUE ELEVATION.
- d7. PAVER PLACING: PLACE IN STRIPS NOT LESS THAN 10' WIDE, UNLESS OTHERWISE ACCEPTABLE TO ARCHITECT/ENGINEER. AFTER FIRST STRIP HAS BEEN PLACED AND ROLLED, PLACE SUCCEEDING STRIPS AND EXTEND ROLLING TO OVERLAP PREVIOUS STRIPS. COMPLETE BINDER COURSE FOR A SECTION BEFORE PLACING SURFACE COURSE.
- d8. JOINTS: MAKE JOINTS BETWEEN OLD AND NEW PAVEMENTS, OR BETWEEN PAVER PASSES, OR BETWEEN SUCCESSIVÉ DAYS WORK, TO ENSURE CONTINUOUS BOND BETWEEN ADJOINING WORK, CONSTRUCT JOINTS TO HAVE SAME TEXTURE, DENSITY AND SMOOTHNESS AS OTHER SECTIONS. CLEAN CONTACT SURFACES AND APPLY TACK COAT.

e1. GENERAL: BEGIN ROLLING WHEN MIXTURE WILL BEAR ROLLER WEIGHT WITHOUT EXCESSIVE DISPLACEMENT. 1. COMPACT MIXTURE WITH HOT HAND TAMPERS OR

VIBRATING PLATE COMPACTORS IN AREAS

INACCESSIBLE TO ROLLERS.

- e2. 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
- e3. SECOND ROLLING: FOLLOW BREAKDOWN ROLLING AS SOON AS POSSIBLE, WHICH MIXTURE IS HOT. CONTINUE SECOND ROLLING UNTIL MIXTURE HAS BEEN THOROUGHLY COMPACTED.
- e4. 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. e5. 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.
- e6. PROTECTION: AFTER FINAL ROLLING, DO NOT PERMIT VEHICULAR TRAFFIC ON PAVEMENT UNTIL IT HAS COOLED AND HARDENED.
- e7. ERECT BARRICADES TO PROTECT PAVING FROM TRAFFIC UNTIL MIXTURE HAS COOLED ENOUGH NOT TO BECOME
- e8. SEAL COAT: ALLOW PAVEMENT 30 DAYS TO CURE BEFORE SEALER IS APPLIED, ACCORDING TO MANUFACTURER'S RECOMMENDATIONS APPLY TWO COATS OF PAVEMENT SEALER. DO NOT APPLY SEAL COAT UNTIL AFTER SURFACE COURSE HAS BEEN CHECKED AND ANY IRREGULARITIES OR ERRORS HAVE BEEN SATISFACTORILY CORRECTED.
- 1. APPLY FIRST COAT IN LENGTHWISE FASHION TO PAVEMENT SURFACE.
- 2. APPLY SECOND COAT IN CROSS WISE FASHION (90 DEGREES TO DIRECTION OF FIRST COAT).
- 3. APPLY SEALER AT UNIFORM RATE AS RECOMMENDED BY MANUFACTURER.
- f. TRAFFIC AND LANE MARKINGS
- LOOSE MATERIAL AND DUST. f2. STRIPPING: USE CHLORINATED RUBBER BASE TRAFFIC LANE-MARKING PAINT, FACTORY-MIXED, QUICK-DRYING, AND NON-BLEEDING.

f1. CLEANING: SWEEP AND CLEAN SURFACE TO ELIMINATE

- 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

### g. FIELD QUALITY CONTROL

COLOR: YELLOW.

- g1. TESTING AND INSPECTION SERVICE: 1. OWNER SHALL EMPLOY A TESTING LABORATORY TO PERFORM PAVEMENT TESTING AND INSPECTION SERVICE FOR QUALITY CONTROL DURING PAVING
- 2. TESTING SERVICE SHALL HAVE REPRESENTATIVE PRESENT TO OBSERVE AND PERFORM TESTS AT ALL TIMES PAVING WORK IS IN PROGRESS.
- q2. 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' X 12' 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.
- NOT BE ACCEPTABLE IF EXCEEDING FOLLOWING ALLOWABLE VARIATION FROM REQUIRED THICKNESS: AGGREGATE BASE COURSE: 1/2", PLUS OR MINUS. BASE COURSE: 1/2", PLUS OR MINUS. BINDER COURSE: 1/4", PLUS OR MINUS. SURFACE COURSE: 1/4", PLUS OR MINUS. 1. A MINIMUM OF TWO PAVEMENT CORES PER COMPACTED LIFT SHALL BE TAKEN. CORES ARE TO

DIRECTED BY THE TESTING SERVICE. THE

g3. THICKNESS: IN-PLACE COMPACTED THICKNESS WILL

FOLLOWING TESTS SHALL BE PERFORMED BY THE TESTING SERVICE, ON EACH PAVEMENT CORE: 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 OF THE REMAINDER OF THE PAVEMENT.

BE TAKEN AT LOCATIONS AND AT TIMES OF DAY AS

- 3. 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
- 4. PAVEMENT WHICH FAILS TO COMPLY WITH APPROVED JOB MIX FORMULA SHALL BE REPLACED AS DIRECTED BY THE ARCHITECT/ENGINEER.
- g4. SURFACE SMOOTHNESS: TEST FINISHED SURFACE FOR SMOOTHNESS, USING 10' STRAIGHTEDGE APPLIED PARALLEL WITH, AND AT RIGHT ANGLES TO CENTERLINE OF PAVED AREA. SURFACE WILL NOT BE ACCEPTABLE IF EXCEEDING THE FOLLOWING TOLERANCES FOR SMOOTHNESS.
  - AGGREGATE BASE COURSE SURFACE: 1/4". BASE COURSE SURFACE: 1/4" BINDER COURSE SURFACE: 1/8".
- WEARING COURSE SURFACE: 1/8".
- 1. CHECK SURFACED AREAS AT INTERVALS AS DIRECTED BY TESTING SERVICE.
- g5. DENSITY TESTS: DENSITY TESTS SHALL BE MADE AT EACH LIFT. TESTS SHALL BE AS FOLLOWS:
- ASPHALT PAVING AREAS. q6. 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. 3. SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH I.N.D.O.T.

1. TESTS WILL BE REQUIRED AT VARIOUS TIMES AND

LOCATIONS FOR SUBGRADE AND BASE COURSES FOR

- STANDARD SPECIFICATIONS, SECTION 207 AND SUBSECTION 501.07. NO TRAFFIC SHALL BE PERMITTED ON THE PREPARED SUBGRADE PRIOR TO PAVING. 4. SEE GRADING, SECTION "E" FOR ADDITIONAL COMPACTION REQUIREMENTS.
- L. CONCRETE CURB AND WALKS1. SEE DETAIL SHEET FOR TYPE AND DETAILS.
- CONFORMING TO A.S.T.M. C-150 AND WATER. AGGREGATE SHALL CONFORM TO A.S.T.M. C-33. CONCRETE SHALL BE BAG CLASS "A" WITH COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS BEING MINIMUM 4000 P.S.I. WHERE REQUIRED,

2. CONCRETE SHALL BE READY MIXED PORTLAND CEMENT

- S. REINFORCEMENT a. WELDED WIRE FABRIC SHALL CONFORM TO A.S.T.M. A-185 . REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A-615
- 4. APPLICATION a. PLACE CONCRETE ONLY ON A MOIST, COMPACTED SUBGRADE OR BASE FREE FROM LOOSE MATERIAL. PLACE NO CONCRETE ON MUDDY OR FROZEN SUBGRADE. b. CONCRETE SHALL BE DEPOSITED SO AS TO REQUIRE AS
- S TO BE PLACED AT AN ATMOSPHERIC TEMPERATURE OF 35 DEGREES F OR LESS, CURRENT I.N.D.O.T. SPECIFICATIONS SHALL APPLY. c. EXCEPT AS OTHERWISE SPECIFIED, CURE ALL CONCRETE BY ONE OF THE METHODS DESCRIBED IN CURRENT I.N.D.O.T.

LITTLE REHANDLING AS PRACTICABLE. WHEN CONCRETE

### M. FINISH GRADING AND SEEDING

**SPECIFICATIONS** 

- ALL EROSION CONTROL MEASURES ARE REQUIRED TO BE PER INDIANA STORMWATER QUALITY MANUAL SPECIFICATION, DATED OCTOBER 2007, OR MOST CURRENT
- 1. OVER THE APPROVED ROUGH GRADE (SEE SECTION E), SPREAD 4" MINIMUM OF TOPSOIL OR APPROVED FILL TO SUCH DEPTH AS WILL FINISH TO THE REQUIRED FINISH GRADES AND CONTOURS AFTER ROLLING AND NATURAL SETTLEMENT. NEW GRADES SHALL SLOPE UNIFORMLY BETWEEN LEVELS ESTABLISHED ON THE PLANS AND INTERSECTIONS OF NEW
- GRADES WITH EXISTING GRADES SHALL BE UNIFORM AND 2. TEMPORARY SEEDING - THE AREAS WHERE STRIPPING, CUTS OR FILLS HAVE BEEN GRADED SHALL BE SEEDED FOR SILT AND EROSION PROTECTION SHALL BE AS PER I.S.W.Q.M.
- SPECIFICATIONS (TEMPORARY SEEDING). SEEDING SHA a. EARLY SPRING MIX: 100% SPRING OATS

SEEDING RATE: 100 LBS./ACRE

b. SPRING OR LATE FALL MÍX: 100% ANNUAL RYEGRASS SEEDING RATE: 40 LBS./ACRE c. FALL MIX: 100% PERENNIAL RYE SEEDING RATE 150 LBS./ACRE

3. MULCHING - MULCHING IS REQUIRED FOR ALL TEMPORARY AND

PERMANENT SEEDED AREAS AS TO PREVENT REMOVAL BY WIND

- OR WATER. MULCHING SHALL BE ANCHORED AS OUTLINED IN I.S.W.Q.M. SPECIFICATIONS (MULCHING), BY A COMBINATION OF THE FOLLOWING: a. MULCH ANCHORING TOOL OR FARM DISK b.
- STABLIZERS e. NETTING 4. EROSION CONTROL BLANKET/NETTING - BLANKET IS REQUIRED AT SLOPED AREAS AND CONVEYANCE CHANNELS TO PREVENT EROSION AND PROTECT SOIL AND SEEDING FROM WATER RUNOFF EROSION CONTROL BLANKETS SHALL BE INSTALLED PER CURREN

I.S.W.Q.M. SPECIFICATIONS (SURFACE STABILIZTATION).

CLEATING WITH DOZER TRACKS c. WOOD HYDROMULCH

FIBERS d. SYNTHETIC TACKIFIERS, BINDER OR SOILD

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