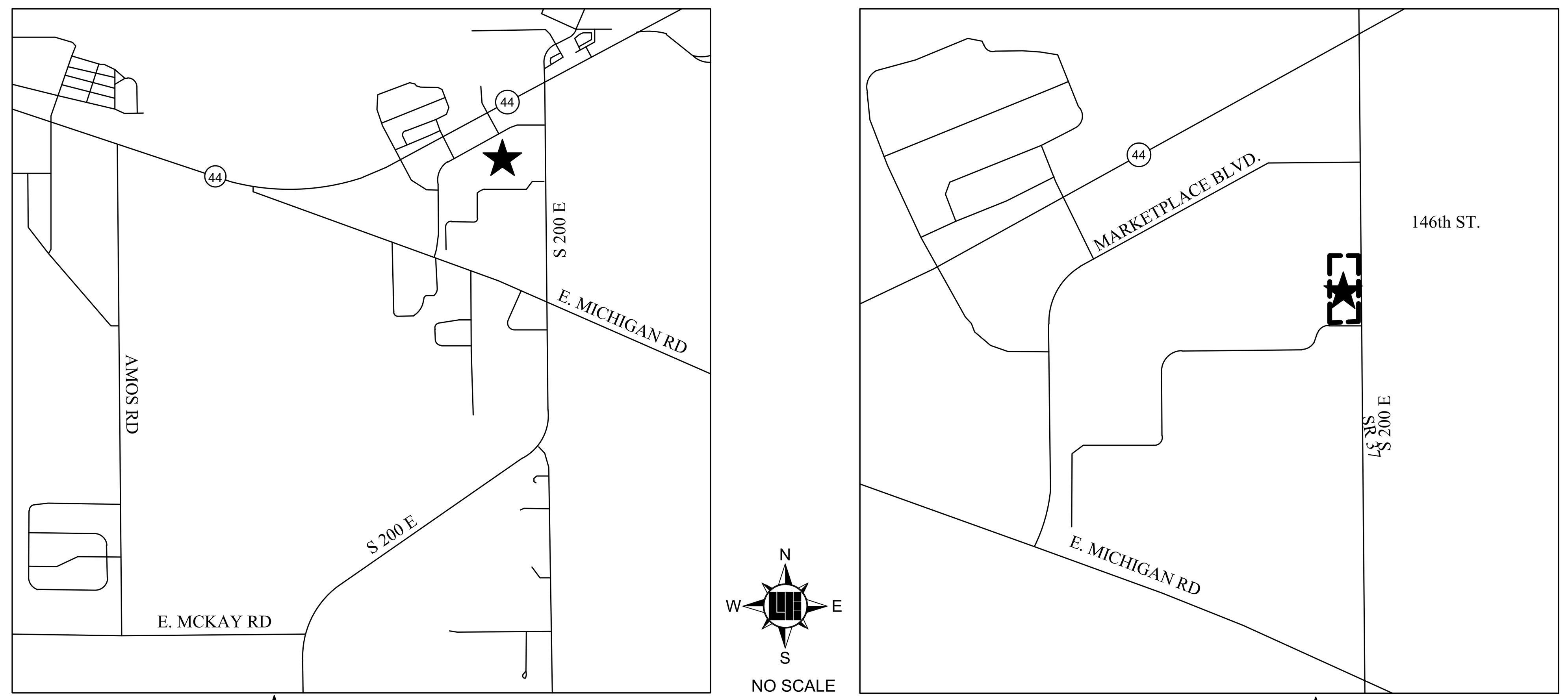
CONSTRUCTION PLANS FOR
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD.
SHELBYVILLE, IN 46176

PLANS PREPARED FOR
GSSR INVESTMENTS
580 E. CARMEL DRIVE, SUITE 100
CARMEL, INDIANA 46032
TELEPHONE: (317) 569-5410
CONTACT PERSON: HIMAN GARG
EMAIL: HG@GARGSGEMS.COM

PLANS PREPARED BY
WEIHE ENGINEERS, INC.
10505 N. COLLEGE AVE.
INDIANAPOLIS, INDIANA 46280
TELEPHONE: (317) 846-6611
FAX: (317) 843-0546
CONTACT PERSON: ERIC CARTER. RLA
EMAIL: CARTERE@WEIHE.NET



LOCATION MAP

Sheet Index	
Sheet No.	Sheet Title
C001	TITLE SHEET
C002	GENERAL NOTES
C101	STORMWATER POLLUTION PREVENTION PLAN PHASE I
C102	STORMWATER POLLUTION PREVENTION PLN PHASE II
C103	STORMWATER POLLUTION PREVENTION PLAN SPECS
C104	STORMWATER POLLUTION PREVENTION PLAN DETAILS
C105	STORMWATER POLLUTION PREVENTION PLAN DETAILS
C200	SITE PLAN
C201	SITE DETAILS
C300	GRADING PLAN
C601	STORM PLAN & PROFILE
C602	STORM DETAILS
C800	UTILITY PLAN
C801	UTILITY DETAILS
L100	LANDSCAPE PLAN
L101	LANDSCAPE DETAILS

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, OR VERIFYING THAT ALL PERMITS AND APPROVALS ARE OBTAINED FROM THE RESPECTIVE CITY, COUNTY, AND STATE AGENCIES 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 CONSTRUCTION
3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO NOTIFY AND COORDINATE CONSTRUCTION WITH ALL RESPECTIVE UTILITIES.
4. ALL QUANTITIES GIVEN ON THESE PRINTS, VERBALLY OR IN THE SCOPE OF WORK SECTION ARE ESTIMATES AND SHALL BE CONFIRMED BY THE BIDDING CONTRACTORS.
5. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS; FINAL RULE 29 CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH.
6. IN ADDITION, EXCAVATION EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRES THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER.
7. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND CONTRACTOR TO MAINTAIN QUALITY CONTROL THROUGHOUT THIS PROJECT.
8. TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL STANDARDS.
9. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
10. ANY FIELD TILES ENCOUNTERED DURING EXCAVATION SHALL BE REPAIRED AND CONNECTED TO NEW STORM SEWERS AND POSITIVE DRAINAGE PRESERVED.
11. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER THAT ALL LANDSCAPE REQUIREMENTS ARE MET AND CONFORM TO APPLICABLE LOCAL STANDARDS.
12. THE SITE DOES NOT LIE IN A SPECIAL FLOOD HAZARD AREA AS ESTABLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY - NATIONAL FLOOD INSURANCE PROGRAM, WHEN PLOTTED BY SCALE ON FLOOD INSURANCE RATE MAP #18145C0138C, DATED NOVEMBER 5, 2014.
13. BEARINGS, DIMENSIONS AND EASEMENTS ARE SHOWN FOR REFERENCE ONLY. SEE RECORD SURVEYS & PLAT FOR EXACT INFORMATION.
14. THIS SITE DOES NOT CONTAIN ANY WETLANDS AT SHOWN ON THE U.S. DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE; SHELBYVILLE, INDIANA, NATIONAL WETLANDS INVENTORY MAP DATED FEBRUARY 13, 2023.

LAND DESCRIPTION

APPROXIMATELY 10.85 ACRES LOCATED IN SHELBYVILLE MARKETPLACE PHASE 1, BLOCK B, SHELBYVILLE, IN - PART OF NE/4, SECTION 04, TOWNSHIP 12 NORTH, RANGE 7 EAST, ADDISON TOWNSHIP, SHELBY COUNTY, IN

BENCHMARK INFORMATION

SITE TBMS

TBM 1112 IS A CUT "X" ON THE NORTHEAST BONNET BOLT OF A FIRE HYDRANT ON THE SOUTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 54' SOUTHWEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND SGT. HENDERSON DRIVE.
ELEV. 791.99 (NAVD 88)

TBM 1180 IS A CUT "X" ON THE EAST BONNET BOLT OF A FIRE HYDRANT ON THE NORTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 240' SOUTHWEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND DEPUTY ALYEA DRIVE.
ELEV. 792.93 (NAVD 88)

TBM 1440 IS A CUT "X" ON THE EAST BONNET BOLT OF A FIRE HYDRANT ON THE SOUTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 306' WEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND PROGRESS PARKWAY.
ELEV. 793.06 (NAVD 88)

TBM 1819 IS A CUT "X" ON THE SOUTHWEST BONNET BOLT OF A FIRE HYDRANT ON THE EASTERN RIGHT-OF-WAY OF PROGRESS PARKWAY, APPROXIMATELY 607' SOUTH OF THE INTERSECTION OF PROGRESS PARKWAY AND MARKET PLACE BLVD.
ELEV. 793.12 (NAVD 88)

OPERATING AUTHORITIES

CITY OF SHELBYVILLE
44 W. WASHING STREET
SHELBYVILLE, IN 46176
317-392-5102

DUKE ENERGY - ELECTRIC
390 N MAIN STREET
MARTINSVILLE, IN 46151
765-349-4012

INDIANA AMERICAN WATER - WATER
153 NORTH EMERSON AVE
GREENWOOD, IN 46143
317-392-0711

VECTREN - GAS
600 INDUSTRIAL DRIVE
FRANKLIN, IN 46131
937-231-8345

COMCAST CABLEVISION
5330 E. 65TH STREET
INDIANAPOLIS, INDIANA 46220
317-872-2225

A T & T
5858 NORTH COLLEGE AVE
INDIANAPOLIS, INDIANA 46220
317-252-4227

Know what's **below.**
Call before you dig.
Within Indiana Call
811 or 800-382-5544
24 Hours a Day, 7 Days a Week.
PER INDIANA STATE LAW IC 8-1-26. IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*
ALLAN H. WEIHE, P.E., L.S. - FOUNDER

WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.™

PROJECT NO.: W22.0478
DWG NAME: C001 - TITLE SHEET
DESIGNED BY: SMB/AQ
DRAWN BY: SMB/AQ
CHECKED BY: EAC
DATE: 03/10/2023

DATE	BY	REVISIONS AND ISSUES

xx/xx/20xx

APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

TITLE SHEET
Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO.
C001

PROJECT NO.
W22.0478

LOCATION: H:\2022\W220478\Engineering\design\conset\Block B\C001 - TITLE SHEET.dwg
LAYOUT: C001
DATE/TIME: April 10, 2023 - 4:56pm
PLOTTED BY: steuberm

DEMOLITION PLAN GENERAL NOTES

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WITH THE OWNER DURING BIDDING AND DURING CONSTRUCTION ACTIVITIES ALL ITEMS TO BE REMOVED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE ANY MATERIALS AND/OR STRUCTURES NOT LOCATED ON THIS SURVEY FOR THE INSTALLATION OF THE NEW WORK.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING UTILITIES PERTAINING TO THEIR PHASE OF WORK, AND TO VERIFY WHICH UTILITIES WILL BE REMOVED BY UTILITY COMPANY. ANY AND ALL UTILITIES NOT REMOVED BY THE UTILITY COMPANY SHALL BE REMOVED BY THE CONTRACTOR.
3. UTILITIES ARE SHOWN TO BE APPROXIMATE AND SHALL BE RELOCATED AND/OR CAPPED AND ABANDONED BEFORE CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
4. ALL DEMOLITION MATERIAL AND SALVAGEABLE MATERIAL IS THE PROPERTY OF THE DEMOLITION CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF THE SITE.
5. SLABS ON GRADE MUST BE REMOVED COMPLETELY AND TAKEN OFF THE SITE.
6. ALL UTILITIES MUST REMAIN ACTIVE FOR AREA TENANTS THAT ARE REMAINING. NO UTILITY SERVICE SHALL BE INTERRUPTED DURING THE CONSTRUCTION PROCESS.
7. BEARINGS, DIMENSIONS, AND EASEMENTS ARE SHOWN FOR REFERENCE ONLY. SEE RECORD SURVEYS AND PLATS FOR EXACT INFORMATION.
8. ANY EXISTING TREE(S) THAT MAY REQUIRE REMOVAL BUT ARE NOT SHOWN ON THE PLAN AS BEING REMOVED MAY BE DONE SO, AS LONG AS THE TREE(S) ARE RELOCATED TO AN APPROVED ALTERNATIVE LOCATION ON SITE.
9. IF THERE ARE ANY QUESTIONS CONCERNING THIS DEMOLITION PLAN, PLEASE CONTACT THE ENGINEER BEFORE CONTINUING WORK.

EROSION CONTROL GENERAL NOTES

1. ALL DISTURBED AREAS SHALL BE SODDED OR SEEDED, EXCEPT BUILDING PAD AND LANDSCAPE BEDS. SEE LANDSCAPE PLANS FOR LOCATION OF LANDSCAPE BEDS.
2. INSTALL SILT FENCE ALONG ALL DOWNSTREAM SLOPES. SILT FENCE TO FOLLOW CONTOUR.
3. THERE SHALL BE NO DIRT, DEBRIS OR STORAGE OF MATERIAL IN THE STREET.

EROSION CONTROL SPECIFICATIONS

1. THIS PLAN IS DESIGNED AS AN ATTEMPT TO PREVENT ANY AND ALL SEDIMENT FROM LEAVING THE CONSTRUCTION SITE BY WAY OF EROSION. IF EROSION OF SEDIMENT FROM THE SITE IS TAKING PLACE, THE CONTRACTOR AND/OR OWNER SHALL TAKE PREVENTATIVE ACTION IMMEDIATELY. THE ENGINEER SHALL BE CONSULTED IN THE EVENT THIS HAPPENS.
2. TEMPORARY SEEDING IS TO BE APPLIED TO ANY DISTURBED AREA THAT WILL REMAIN UNALTERED IN EXCESS OF 7 DAYS.
3. PERMANENT SEEDING IS TO BE APPLIED IMMEDIATELY TO AREAS THAT HAVE ACHIEVED FINAL AND FINISHED GRADE.
4. PRESERVE EXISTING VEGETATION ON THE SITE WHENEVER AND WHEREVER POSSIBLE TO PREVENT TOPSOIL EROSION.
5. ALL SEDIMENT CAPTURING MEASURES SHALL BE IMPLEMENTED PRIOR TO THE DISTURBANCE OF THE CONSTRUCTION AREA THEY ARE INTENDED TO SERVICE. ALL EROSION CONTROL MEASURES PROPOSED ARE TO BE PROPERLY MAINTAINED TO CONTINUE THEIR EFFECTIVENESS.
6. IF GRADING OCCURS DURING THE MONTHS OF DECEMBER, JANUARY OR FEBRUARY DORMANT SEEDING PROCEDURES SHALL BE USED.
7. DURING DRY WEATHER, KEEP LAWNS WATERED WITH SPRINKLERS OR OTHER APPROVED METHODS. RESEED ANY AREAS NOT GERMINATING OR DAMAGED AT INTERVALS AS MAY BE REQUIRED ACCORDING TO SEASONAL CONDITION AND/OR CONSTRUCTION ACTIVITY. WATER GRASS AND EXECUTE NECESSARY WEEDING UNTIL FULL STAND OF GRASS HAS BEEN OBTAINED.
8. THE IMPLEMENTATION AND MAINTENANCE OF THE EROSION CONTROL IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND/OR OWNER.
9. IT SHALL BE THE CONTRACTOR'S AND/OR OWNER'S RESPONSIBILITY TO MINIMIZE SEDIMENTATION (FROM ON-SITE CONSTRUCTION ACTIVITIES) FROM BEING DEPOSITED ONTO ADJACENT PROPERTIES AND RECEIVING STREAMS/DITCHES IN STRICT COMPLIANCE WITH "CONSTRUCTION STORMWATER GENERAL PERMIT" (327 IAC, CONSTRUCTION ACTIVITY STORM WATER RUNOFF CONTROL). IT SHALL ALSO BE THE CONTRACTOR'S AND/OR OWNER'S RESPONSIBILITY TO OBTAIN ANY APPROVALS REQUIRED FROM THE LOCAL AUTHORITY AND TO SUBMIT A COMPLETE NOTICE OF INTENT LETTER TO THE OFFICE OF WATER MANAGEMENT, INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT PRIOR TO ANY CONSTRUCTION ACTIVITY.
10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND/OR OWNER TO MAINTAIN THE SWPPP INFORMATION SIGN UNTIL SUCH TIME THAT THE SITE IS READY FOR THE IDEM NOTICE OF TERMINATION. INSTALL 4" PVC TUBE WITH END CAPS ATTACHED TO THE SWPPP INFORMATION SIGN TO CONTAIN APPROVED SWPPP DRAWINGS AND PERMITS FOR INPSECTORS.
11. FOR SEASONAL VARIATIONS - SEE SEASONAL SOIL PROTECTION CHART IN THESE PLANS.
12. PORTABLE TOILETS MUST BE ANCHORED AND LOCATED A MINIMUM OF 50' FROM ANY STORM DRAIN.

SITE PLAN GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, OR VERIFYING THAT ALL PERMITS AND APPROVALS ARE OBTAINED FROM THE RESPECTIVE CITY, COUNTY, AND STATE AGENCIES PRIOR TO STARTING CONSTRUCTION.
2. ALL QUANTITIES GIVEN ON THESE PRINTS, VERBALLY OR IN THE SCOPE OF WORK SECTION ARE ESTIMATES AND SHALL BE CONFIRMED BY THE BIDDING CONTRACTORS.
3. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS; FINAL RULE 29 CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH. IN ADDITION, EXCAVATION EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRE THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER.
4. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND CONTRACTOR TO MAINTAIN QUALITY CONTROL THROUGHOUT THIS PROJECT.
5. TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL STANDARDS.
6. BEARINGS, DIMENSIONS, AND EASEMENTS ARE SHOWN FOR REFERENCE ONLY. SEE RECORD SURVEYS AND PLATS FOR EXACT INFORMATION.
7. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT.
8. ALL DIMENSIONS ARE BASED ON FACE OF CURB OR BACK OF ROLL CURB OR FACE OF BUILDING.
9. SEE ARCHITECTURAL PLANS FOR DETAILS OF BUILDING, BUILDING DIMENSIONS AND SIGNAGE SPECIFICATIONS. DO NOT STAKE BUILDING FROM THESE PLANS.
10. COORDINATE CONSTRUCTION ACTIVITIES WITH ADJOINING WORK IF APPLICABLE. VERIFY EXTENT OF ADJOINING WORK AND COORDINATE AS REQUIRED.
11. FIELD VERIFY EXISTING CURBS AND TAPER PROPOSED VERTICAL CURBS TO MATCH WITHIN A MIN. OF THREE (3) FEET.
12. ± DIMENSIONS INDICATE FIELD DIMENSION ADJUSTMENT AREA BASED ON ACTUAL FIELD LAYOUT COORDINATES.
13. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD DIMENSIONS. IF ANY DISCREPANCIES ARE FOUND IN THESE PLANS FROM ACTUAL FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
14. PROVIDE SMOOTH TRANSITION FROM NEWLY PAVED AREAS TO EXISTING AREAS AS NECESSARY. ALL AREAS WHERE PROPOSED PAVEMENT MEETS EXISTING PAVEMENT, THE EXISTING EDGE OF PAVEMENT SHALL BE FREE OF ALL LOOSE DEBRIS. THE EDGE OF EXISTING ASPHALT PAVEMENT SHALL BE PROPERLY SEALED WITH A TACK COAT MATERIAL IN ALL AREAS WHERE NEW ASPHALT PAVEMENT IS INDICATED TO JOIN EXISTING.
15. RESURFACE OR RECONSTRUCT AT LEAST TO ORIGINAL CONDITIONS ALL AREAS WHERE THE EXISTING PAVEMENT OR LAWNS ARE DAMAGED DURING CONSTRUCTION FROM TRAFFIC BY CONTRACTORS, SUBCONTRACTORS, OR SUPPLIERS AFTER CONSTRUCTION WORK IS COMPLETE.
16. THE CONTRACTOR SHALL PROTECT AND NOT DESTROY THE PROPERTY CORNER MONUMENTS DURING CONSTRUCTION.
17. REFER TO ARCHITECTURAL PLANS FOR BUILDING ACCESSORY DETAILS.
18. REFER TO SHEET C201 FOR SITE PLAN DETAILS UNLESS OTHERWISE NOTED.

GRADING GENERAL NOTES

1. CONTRACTOR SHALL REFER TO THE STORMWATER POLLUTION PREVENTION PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO EARTHMOVING ACTIVITIES.
2. REFER TO THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS. THE SECTIONS BELOW FOR VARIOUS ITEMS ARE TO CLARIFY THE INTENT OF THE REQUIREMENTS FOR THIS PROJECT. PLEASE NOTE THAT OTHER SECTIONS OF THE INDOT STANDARD SPECIFICATIONS MAY ALSO BE APPLICABLE.
3. TOPSOIL SHALL BE STRIPPED FROM ALL AREAS TO RECEIVE PAVING AND FROM WITHIN THE LIMITS OF PROPOSED BUILDINGS AND STRUCTURES. TOPSOIL SHALL BE STRIPPED TO THE DEPTH AS NOTED IN THE GEOTECHNICAL REPORT.
4. AFTER STRIPPING TOPSOIL, PROOFROLL AREAS TO BE FILLED WITH A MEDIUM WEIGHT ROLLER TO DETERMINE LOCATIONS OF ANY POCKETS OF UNSUITABLE MATERIAL. RECOMMENDATIONS FOR DRYING, AMENDING AND/OR REMOVAL OF ANY UNSUITABLE MATERIAL WITHIN THE PROPOSED PAVED AND/OR BUILDING AREAS WILL BE DETERMINED AT THE TIME OF CONSTRUCTION BY THE OWNER'S GEOTECHNICAL TESTING REPRESENTATIVE.
5. TOPSOIL SHALL BE PLACED IN MOUNDING AREAS, NONSTRUCTURAL FILL AND/OR PLANTING AREAS TO A MINIMUM DEPTH OF 6". EXCESS TOPSOIL SHALL BE REMOVED FROM THE SITE.
6. WHEN PERFORMING GRADING OPERATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS. REFER TO GEOTECHNICAL REPORT AND/OR CONSULT WITH OWNER'S GEOTECHNICAL TESTING REPRESENTATIVE FOR RECOMMENDATIONS.
7. FILL MATERIAL SHALL CONSIST OF EARTH OBTAINED FROM CUT AREAS, BORROW PITS OR OTHER APPROVED SOURCES. EARTH SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES AND LARGE ROCKS. THE FILL MATERIAL SHALL BE PLACED IN LAYERS NOT TO EXCEED SIX INCHES FOLLOWING COMPACTION, PROPER MOISTURE CONTENT OF FILL MATERIAL WILL BE SUCH TO ACHIEVE SPECIFIED COMPACTION DENSITY. ALL FILL BENEATH PAVED AREAS, FLOOR SLABS AND FUTURE BUILDINGS SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY PER ASTM D-1557. FIELD COMPACTING TEST SHALL BE RUN ON EACH LIFT, IN FILL SECTIONS, AND THE REQUIRED COMPACTION ON EACH LIFT SHALL BE IN ACCORDANCE WITH INDOT SECTION 211.
8. MAXIMUM LAWN SLOPE IS 3:1.
9. THE PLANS SHOW THE LOCATION OF ALL KNOWN UTILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION 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.
10. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE MAINS, CONDUITS, SERVICE LINES, ETC. WITHIN THE CONSTRUCTION LIMITS. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION (IN COOPERATION WITH APPLICABLE UTILITY COMPANY) IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR.
11. ALL SPOT ELEVATIONS ARE TO FINISHED GRADE.
12. COMPACTED "B" BORROW BACK FILL REQ'D. OVER ALL UTILITIES IN PAVED AREAS.
13. ALL GRADES AT BOUNDARY SHALL MEET EXISTING. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE. BUTT JOINTS SHALL BE PROVIDED AT TRANSITIONAL AREAS BETWEEN PROPOSED AND EXISTING PAVEMENT.
14. ANY PART OF SANITARY OR STORM SEWER TRENCHES RUNNING UNDER OR WITHIN 5' OF PAVEMENT TO BE BACKFILLED WITH GRANULAR MATERIAL.
15. ALL CONSTRUCTION ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH O.S.H.A. STANDARDS FOR WORKER SAFETY.
16. THE CONTRACTOR SHALL CONFIRM ALL EARTHWORK QUANTITIES PRIOR TO THE START OF CONSTRUCTION. IF AN EXCESS OR SHORTAGE OF EARTH IS ENCOUNTERED, THE CONTRACTOR SHALL CONFIRM WITH THE OWNER AND ENGINEER THE REQUIREMENTS FOR STOCKPILING, REMOVAL OR IMPORTING OF EARTH.
17. PROVIDE POSITIVE DRAINAGE WITHOUT PONDING IN ALL AREAS AFTER INSTALLATION. CONTRACTOR TO TEST FOR AND CORRECT ANY PONDING CONDITIONS. ANY AREAS THAT HOLD WATER MORE THAN 1/8" DEEP SHALL BE CUT OUT AND CORRECTED TO POSITIVE DRAINAGE AT NO COST TO THE OWNER/ DEVELOPER OR ENGINEER.
18. ADA ACCESSIBLE PARKING SPACES, RAMPS, AND ROUTES SHALL BE IN ACCORDANCE WITH THE LATEST ADA STANDARDS FOR ACCESSIBLE DESIGN.
19. VERTICAL CURVES, WITH A MINIMUM LENGTH OF 50', SHALL BE USED WHERE POSSIBLE BETWEEN VERTICAL CHANGES IN DIRECTION (SLOPE) TO ALLOW FOR POSITIVE DRAINAGE AND SMOOTH TRANSITIONS.
20. CONTRACTOR TO INSTALL CONCRETE CRADLES WHEN THE VERTICAL SEPARATION (AS MEASURED FROM THE EXTERIOR OF THE PIPES) BETWEEN SANITARY SEWER FACILITIES, WATER MAIN, AND STORM SEWERS IS 18" OR LESS.
21. ALL DISTURBED AREA SHALL BE STABILIZED IN ACCORDANCE TO THE STORM WATER POLLUTION PREVENTION PLAN AND LANDSCAPE PLAN.

DRAINAGE GENERAL NOTES

1. THE CONTRACTOR SHALL ADHERE TO ALL TERMS AND CONDITIONS AS OUTLINED IN THE EPA OR APPLICABLE STATE GENERAL N.P.D.E.S. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND STORMWATER POLLUTION PREVENTION PLAN.
2. REFER TO THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS. ALSO USE THE IDEM STORM WATER QUALITY MANUAL FOR ADDITIONAL GUIDANCE FOR ONSITE BMP'S AND GENERAL SWPPP PRACTICES. THE SECTIONS BELOW FOR VARIOUS ITEMS ARE TO CLARIFY THE INTENT OF THE REQUIREMENTS FOR THIS PROJECT. PLEASE NOTE THAT OTHER SECTIONS OF THE INDOT STANDARD SPECIFICATIONS MAY ALSO BE APPLICABLE.
3. THE CONTRACTOR SHALL CONTACT APPLICABLE STATE UNDERGROUND LOCATION SERVICE AT LEAST 72 HOURS PRIOR TO ANY WORK AND SHALL CONTACT THE OWNER AND/OR ENGINEER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. THE PLANS SHOW THE LOCATION OF ALL KNOWN UTILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION 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.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE MAINS, CONDUITS, SERVICE LINES, ETC. WITHIN THE CONSTRUCTION LIMITS. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION (IN COOPERATION WITH APPLICABLE UTILITY COMPANY) IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR.
6. THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITIES AND VERIFY ANY AND ALL FEES ASSOCIATED WITH THE INSTALLATION OF ALL UTILITIES.
7. ALL CONSTRUCTION ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH O.S.H.A. STANDARDS FOR WORKER SAFETY.
8. ANY PART OF STORM SEWER TRENCHES RUNNING UNDER OR WITHIN 5' OF PAVEMENT TO BE BACKFILLED WITH GRANULAR MATERIAL.
9. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY LOCATION, SIZE, AND ELEVATION OF EXISTING UTILITIES, STRUCTURES, PIPES, PAVEMENTS, ETC. AS RELATED TO THEIR WORK. NOTIFY ENGINEER OF ANY CONFLICT AND/OR DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS.
10. MAINTAIN 10' HORIZONTAL AND 18" VERTICAL CLEARANCE BETWEEN STORM / SANITARY SEWER SYSTEMS AND DOMESTIC/FIRE LINE SERVICE. SANITARY SEWER LINE IN PROXIMITY OF WATER LINE SHALL BE C900 WATER MAIN GRADE PVC.
11. CONTRACTOR TO INSTALL CONCRETE CRADLES WHEN THE VERTICAL SEPARATION (AS MEASURED FROM THE EXTERIOR OF THE PIPES) BETWEEN SANITARY SEWERS, WATER MAINS AND STORM SEWERS IS 18" OR LESS.
12. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
13. WHEN PERFORMING EXCAVATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.
14. COMPACTED "B" BORROW BACK FILL REQUIRED OVER ALL UTILITIES IN PAVED AREAS.
15. ALL UTILITY STRUCTURES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING AND COVERS.
16. COORDINATE LOCATIONS AND CONNECTIONS OF BUILDING STORM LINES WITH PLUMBING DRAWINGS.
17. FOLLOW ALL LOCAL AND STATE CODES IN REFERENCE TO STORM SEWER INSTALLATION.
18. ALL EXISTING MANHOLE AND CATCH BASIN GRATES SHALL BE ADJUSTED TO NEW FINISH GRADE ELEVATIONS.
19. EXISTING PIPES WITHIN CONSTRUCTION LIMITS ARE TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
20. ALL STORM PIPE CONNECTIONS AT STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
21. ALL STORM SEWER STRUCTURES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING AND COVERS.
22. ALL STORM SEWER STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR CHANNEL FROM INVERT IN TO INVERT OUT.
23. NEW PIPES AND STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS PRIOR TO FINAL TURNOVER TO THE OWNER.
24. ALL HDPE PIPE SHALL BE DUAL WALLED, HANCOR HQ, ADS N-12 PIPE OR APPROVED EQUAL.
25. ALL FITTINGS AND ACCESSORIES INCLUDING BUT NOT LIMITED TO END CAPS, CLEANOUTS, REDUCERS, ETC., SHALL BE OF HDPE MATERIAL COMPARABLE WITH STORAGE PIPES.
26. PROVIDE BACKFILL WITH A MINIMUM OF 4" BEDDING MATERIAL OF #8 AGGREGATE COMPACTED IN 8" LIFTS TO 95% MAXIMUM DRY DENSITY.
27. VERIFY EXISTING STORM INVERT ELEVATIONS PRIOR TO STARTING NEW STORM SEWER CONNECTION.

UTILITY GENERAL NOTES

1. THE CONTRACTOR SHALL CONTACT APPLICABLE STATE UNDERGROUND LOCATION SERVICE AT LEAST 72 HOURS PRIOR TO ANY WORK AND SHALL CONTACT THE OWNER AND/OR ENGINEER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. THE PLANS SHOW THE LOCATION OF ALL KNOWN UTILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION 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.
3. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE MAINS, CONDUITS, SERVICE LINES, ETC. WITHIN THE CONSTRUCTION LIMITS. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION (IN COOPERATION WITH APPLICABLE UTILITY COMPANY) IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITIES AND VERIFY ANY AND ALL FEES ASSOCIATED WITH THE INSTALLATION OF ALL UTILITIES.
5. ALL CONSTRUCTION ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH O.S.H.A. STANDARDS FOR WORKER SAFETY.
6. ANY PART OF SANITARY OR STORM SEWER TRENCHES RUNNING UNDER OR WITHIN 5' OF PAVEMENT TO BE BACKFILLED WITH GRANULAR MATERIAL.
7. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY LOCATION, SIZE, AND ELEVATION OF EXISTING UTILITIES, STRUCTURES, PIPES, PAVEMENTS, ETC. AS RELATED TO THEIR WORK. NOTIFY ENGINEER OF ANY CONFLICT AND/OR DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS.
8. MAINTAIN 10' HORIZONTAL AND 18" VERTICAL CLEARANCE BETWEEN STORM / SANITARY SEWER SYSTEMS AND DOMESTIC/FIRE LINE SERVICE. SANITARY SEWER LINE IN PROXIMITY OF WATER LINE SHALL BE C900 WATER MAIN GRADE PVC.
9. CONTRACTOR TO INSTALL CONCRETE CRADLES WHEN THE VERTICAL SEPARATION (AS MEASURED FROM THE EXTERIOR OF THE PIPES) BETWEEN SANITARY SEWERS, WATER MAINS AND STORM SEWERS IS 18" OR LESS.
10. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
11. WHEN PERFORMING EXCAVATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.
12. COMPACTED "B" BORROW BACK FILL REQUIRED OVER ALL UTILITIES IN PAVED AREAS.
13. ALL UTILITY STRUCTURES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING AND COVERS.
14. PROVIDE THRUST BLOCKS FOR ALL WATER LINE BENDS AND TEES, INCLUDING TAP CONNECTION.
15. CONTRACTOR SHALL COORDINATE WITH WATER COMPANY FOR DOMESTIC AND FIRE SERVICE. CONNECT TO BUILDING DOMESTIC AND FIRE LINE. COORDINATE WITH PLUMBING DRAWINGS.
16. COORDINATE LOCATION OF ELECTRICAL AND COMMUNICATION LINES WITH LOCAL UTILITIES.
17. COORDINATE LOCATION OF REQUIRED CONDUITS FOR ELECTRIC SERVICE, LIGHT POLES, COMMUNICATION SERVICE AND IRRIGATION SYSTEM.
18. COORDINATE LOCATION AND SIZE OF GAS SERVICE CONNECTION AND INSTALLATION OF SERVICE LINE AND METER WITH GAS COMPANY.
19. COORDINATE LOCATIONS AND CONNECTIONS OF BUILDING STORM LINES WITH PLUMBING DRAWINGS.
20. FOLLOW ALL LOCAL AND STATE CODES IN REFERENCE TO DOMESTIC/FIRE LINE INSTALLATION AND STORM SEWER / SANITARY SEWER INSTALLATION.
21. SANITARY SEWER LATERAL, WATER SERVICE, & ELECTRICAL/COMMUNICATION CONDUITS SHALL BE GRANULAR BACKFILL FOR ENTIRE RUN.
22. ALL EXISTING MANHOLE AND CATCH BASIN GRATES, WATER OR GAS VALVES SHALL BE ADJUSTED TO NEW FINISH GRADE ELEVATIONS.

HATCH LEGEND

REMOVED ASPHALT PAVEMENT

PAVEMENT

STANDARD DUTY ASPHALT
HEAVY DUTY ASPHALT
HEAVY DUTY CONCRETE PAVEMENT

SWPPP LEGEND

- INLET PROTECTION - USE SUBSURFACE INLET PROTECTION WITH OVERFLOW CAPABILITY (DANDY SAC)
- PERMANENT/TEMPORARY SEEDING USE PLANTING CHART
- CONSTRUCTION ENTRANCE
- STAGING AREA
- POSTING AREA - 4" PVC TUBE WITH END CAPS ATTACHED TO PROJECT CONSTRUCTION SIGN TO CONTAIN APPROVED CONSTRUCTION DRAWINGS AND PERMITS FOR INSPECTORS.
- CONCRETE WASHOUT
- SILT FENCE
- LIMITS OF DISTURBANCE (CONSTRUCTION LIMITS)
- SITE DISCHARGE POINT

OVERALL LEGEND ITEMS

UTILITIES

REBAR FOUND
PK OR MAG NAIL FOUND
TEMPORARY BENCH MARK
WATER VALVE
FIRE HYDRANT
WATER METER
FIRE DEPT HOOKUP
WATER MANHOLE
GAS METER
GAS VALVE
GAS PIPELINE MARKER
UTILITY POLE
GUY ANCHOR
TRANSFORMER
SANITARY SEWER MANHOLE
FIBER OPTIC MARKER
MAIL BOX
BOLLARD
SIGN
COMMUNICATIONS PEDESTAL
COMMUNICATIONS RISER
CABLE TELEVISION PEDESTAL
CURB INLET
BEEHIVE INLET
SQUARE INLET
STORM MANHOLE
MONITORING WELL

OTHER

CURB & GUTTER ELEVATION
PAVEMENT SPOT ELEVATION
GROUND SPOT ELEVATION
EXISTING SPOT ELEVATION
EMERGENCY FLOOD ROUTE
FLOW DIRECTION AND SLOPE
ACCESSIBLE SPACE
PARKING COUNT
PARKING WHEEL STOP

ABBREVIATIONS

ROW	RIGHT OF WAY
ESMT	EASEMENT
D.&U.E.	DRAINAGE AND UTILITY EASEMENT
FFE	FINISH FLOOR ELEVATION
TC	TOP OF CURB
GUT	GUTTER
CMP	CORRUGATED METAL PIPE
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE PIPE
VCP	VITRIFIED CLAY PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
DIP	DUCTILE IRON PIPE
SSD	SUB SURFACE DRAIN PIPE
STM	STORM
SAN	SANITARY
STR	STRUCTURE
CO	CLEANOUT

LINE TYPES

UNDERGROUND GAS
UNDERGROUND WATER
AERIAL ELECTRIC
UNDERGROUND ELECTRIC
UNDERGROUND COMMUNICATIONS
AERIAL COMMUNICATIONS
UNDERGROUND FIBER OPTIC
AERIAL FIBER OPTIC CABLE
OVERHEAD UTILITY
FORCE MAIN
STORM SEWER MAIN
SANITARY SEWER LATERAL
RIGHT OF WAY LINE
CHAIN LINK FENCE
BOARD FENCE
WROUGHT IRON FENCE
FARM FENCE
GUARD RAIL
HAND RAIL
SILT FENCE
BUILDING SETBACK LINE
BOUNDARY LINE
FLOW LINE
SECTION LINE
INDEX CONTOUR
INTERMEDIATE CONTOUR
FLOW LINE
ROOF DRAIN
SUB SURFACE DRAIN
GRADE BREAK LINE

-WARNING-

THIS PLAN TO BE USED FOR EROSION CONTROL PURPOSES ONLY. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED IN THE FIELD BY THE INSPECTOR.

-NOTE-

THIS PLAN INDICATES EROSION CONTROL MEASURES REQUIRED AFTER SOIL STRIPPING AND PAD BUILDING HAS TAKEN PLACE. COORDINATE WITH DEVELOPER FOR MEASURES REQUIRED UNTIL PROPERTY TURNED OVER FOR DEVELOPMENT. COORDINATE WITH SOIL CONSERVATION DISTRICT REPRESENTATIVE FOR ANY OTHER MEASURES REQUIRED DUE TO SITE CONDITIONS.

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*
ALLAN H. WEIHE, P.E., L.S. - FOUNDER

WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.

PROJECT NO.: W22.0478
DWG NAME: C002 - GENERAL NOTES
DESIGNED BY: SMB/AQ
DRAWN BY: SMB/AQ
CHECKED BY: EAC
DATE: 03/10/2023

DATE	BY	REVISIONS AND ISSUES

xx/xx/20xx

APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:

SHELBYVILLE MARKETPLACE - RETAIL

2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

GENERAL NOTES

Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO.
C002

PROJECT NO.
W22.0478

LOCATION: H:\2022\W220478\Engineering\design\conset\Block B\C002 - GENERAL NOTES.dwg
LAYOUT: C002
DATE/TIME: April 10, 2023 - 4:56pm
PLOTTED BY: steuberm

SWPPP PHASE 1 LEGEND

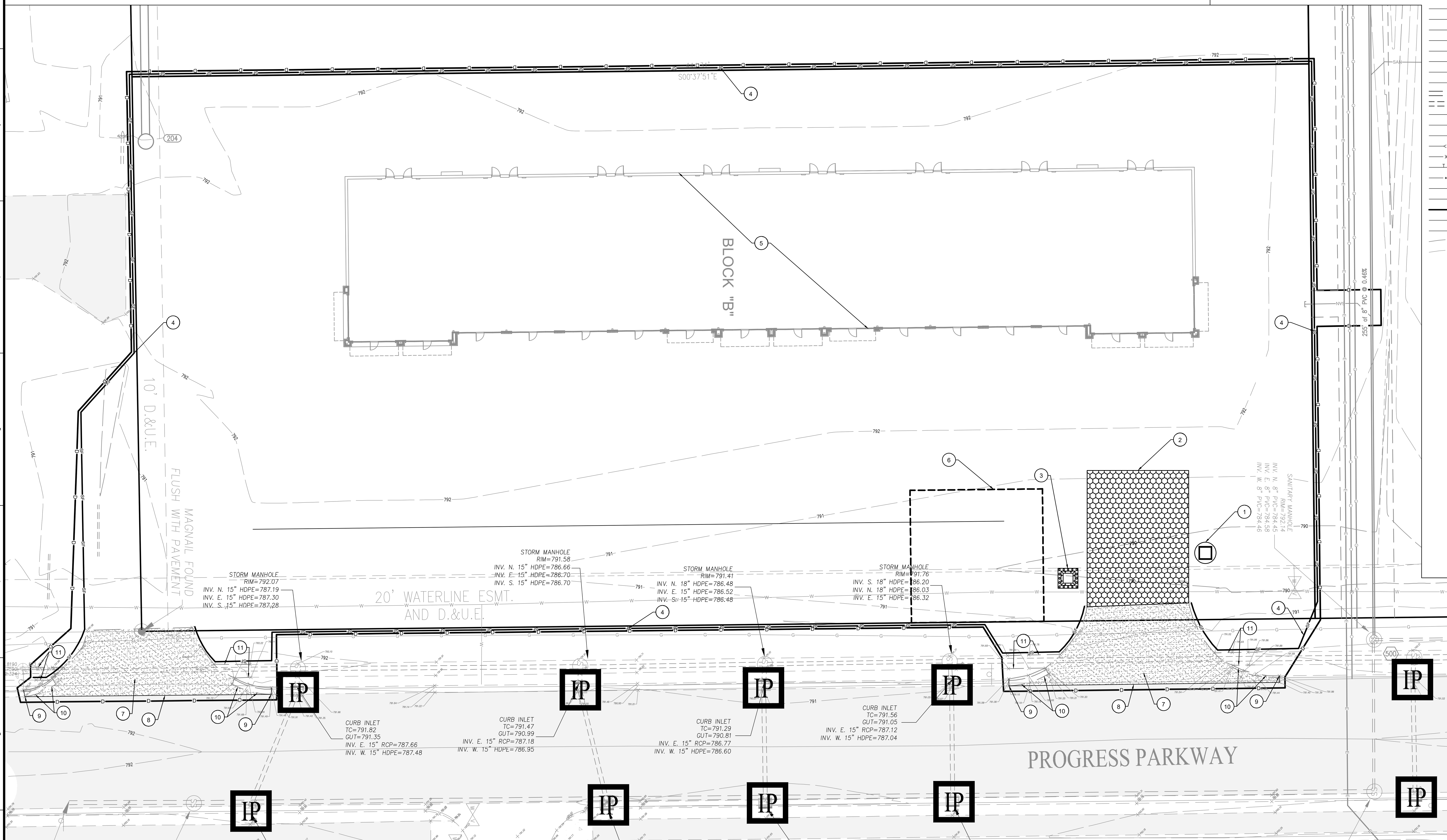
- IP - INLET PROTECTION - USE SUBSURFACE INLET PROTECTION WITH OVERFLOW CAPABILITY (DANDY SAC)
- CONSTRUCTION ENTRANCE
- STAGING AREA
- POSTING AREA - 4" PVC TUBE WITH END CAPS ATTACHED TO PROJECT CONSTRUCTION SIGN TO CONTAIN APPROVED CONSTRUCTION DRAWINGS AND PERMITS FOR INSPECTORS.
- CONCRETE WASHOUT
- SF - SILT FENCE
- D - LIMITS OF DISTURBANCE

SITE PREPARATION / SWPPP PHASE 1 NOTES

1. INSTALL PERMIT POSTING AREA. 4" PVC TUBE WITH END CAPS ATTACHED TO PROJECT CONSTRUCTION SIGN TO CONTAIN APPROVED CONSTRUCTION DRAWINGS AND PERMITS FOR INSPECTORS.
2. INSTALL CONSTRUCTION ENTRANCE. REFER TO DETAIL ON SHEET C104.
3. INSTALL CONCRETE WASHOUT. REFER TO DETAIL ON SHEET C104.
4. INSTALL SILT FENCE. REFER TO DETAIL ON SHEET C104.
5. LIMITS OF PROPOSED BUILDING.
6. STAGING AREA. PROVIDE CONSTRUCTION DUMPSTER, FUELING AREA, AND PORT-O-LET AS NEEDED.
7. REMOVE EXISTING ASPHALT ENTRANCE.
8. SAWCUT EXISTING ASPHALT.
9. SAWCUT EXISTING CURB AND GUTTER.
10. REMOVE EXISTING CURB.
11. REMOVE EXISTING SIDEWALK.

LINE TYPES

Symbol	Line type
G	UNDERGROUND GAS
W	UNDERGROUND WATER
E(A)	AERIAL ELECTRIC
E	UNDERGROUND ELECTRIC
C	UNDERGROUND COMMUNICATIONS
C(A)	AERIAL COMMUNICATIONS
FO	UNDERGROUND FIBER OPTIC
FO(A)	AERIAL FIBER OPTIC CABLE
OHU	OVERHEAD UTILITY
FM	FORCE MAIN
	SANITARY SEWER
	STORM SEWER
	RIGHT OF WAY LINE
	CHAIN LINK FENCE
	BOARD FENCE
	WROUGHT IRON FENCE
X	FARM FENCE
T	GUARD RAIL
*	HAND RAIL
SF	SILT FENCE
	BUILDING SETBACK LINE
	BOUNDARY LINE
	FLOW LINE
	SECTION LINE
500	INDEX CONTOUR
501	INTERMEDIATE CONTOUR



CONTACT PERSON FOR EROSION CONTROL & SEDIMENT PRACTICES

WEIHE ENGINEERS, INC.
10505 N. COLLEGE AVE.
INDIANAPOLIS, IN 46268
TELEPHONE: (317) 846-6611
FAX: (317) 843-0546
EMAIL: PARKERF@WEIHE.NET
CONTACT PERSON: FRED PARKER, CPESC

HATCH LEGEND

REMOVED ASPHALT PAVEMENT

EXISTING AREAS

TOTAL SITE	=	2.13 AC.
DISTURBED	=	2.36 AC.
PERVIOUS	=	2.125 AC.
IMPERVIOUS	=	0.005 AC.

BENCHMARK INFORMATION

SITE TBMS

TBM 1112 IS A CUT "X" ON THE NORTHEAST BONNET BOLT OF A FIRE HYDRANT ON THE SOUTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 54' SOUTHWEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND SGT. HENDERSON DRIVE.
ELEV. 791.99 (NAVD 88)

TBM 1180 IS A CUT "X" ON THE EAST BONNET BOLT OF A FIRE HYDRANT ON THE NORTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 240' SOUTHWEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND DEPUTY ALYEA DRIVE.
ELEV. 792.93 (NAVD 88)

TBM 1440 IS A CUT "X" ON THE EAST BONNET BOLT OF A FIRE HYDRANT ON THE SOUTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 306' WEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND PROGRESS PARKWAY.
ELEV. 793.06 (NAVD 88)

TBM 1819 IS A CUT "X" ON THE SOUTHWEST BONNET BOLT OF A FIRE HYDRANT ON THE EASTERN RIGHT-OF-WAY OF PROGRESS PARKWAY, APPROXIMATELY 607' SOUTH OF THE INTERSECTION OF PROGRESS PARKWAY AND MARKET PLACE BLVD.
ELEV. 793.12 (NAVD 88)

W S N E

SCALE: 1" = 20'
0 10 20 40

Know what's below. Call before you dig.
Within Indiana Call
811 or 800-382-5544
24 Hours a Day, 7 Days a Week.
PER INDIANA STATE LAW IC 8-1-26. IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 fax
ALLAN H. WEIHE, P.E., L.S. - FOUNDER

WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.

PROJECT NO.:	W22.0478
DWG NAME:	C101 - SWPPP I
DESIGNED BY:	SMB/AQ
DRAWN BY:	SMB/AQ
CHECKED BY:	EAC
DATE:	03/10/2023

REVISIONS AND ISSUES — DATE — BY

xx/xx/20xx

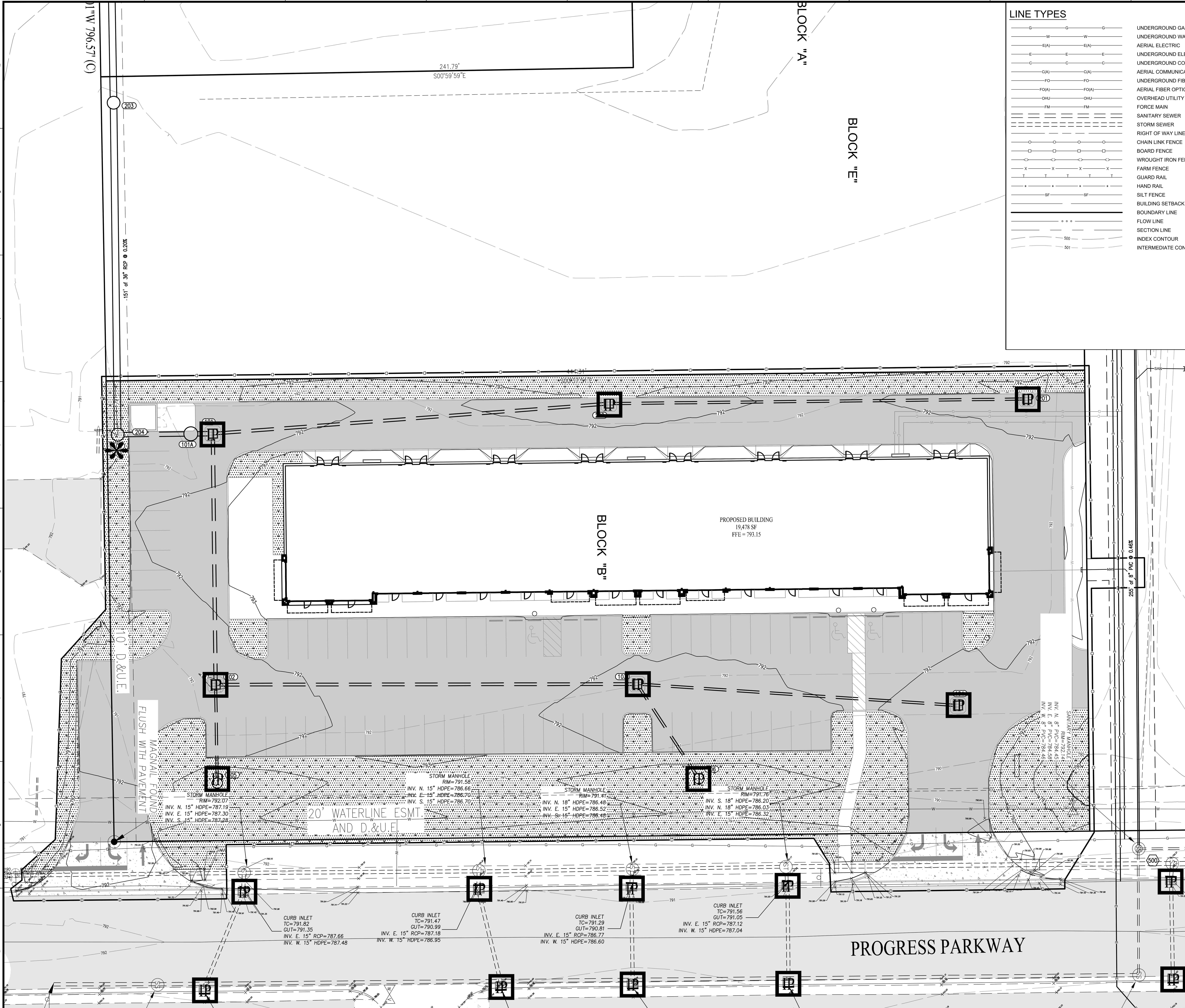
APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

STORMWATER POLLUTION PREVENTION PLAN PHASE I
Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO.
C101
PROJECT NO.
W22.0478

LOCATION: H:\2022\W220478\Engineering\design\conset\Block B\C101 - SWPPP I.dwg
LAYOUT: C101
DATE/TIME: April 10, 2023 - 4:56pm
PLOTTED BY: steuberm



LINE TYPES

- UNDERGROUND GAS
- UNDERGROUND WATER
- AERIAL ELECTRIC
- UNDERGROUND ELECTRIC
- UNDERGROUND COMMUNICATIONS
- AERIAL COMMUNICATIONS
- UNDERGROUND FIBER OPTIC
- AERIAL FIBER OPTIC CABLE
- OVERHEAD UTILITY
- FORCE MAIN
- SANITARY SEWER
- STORM SEWER
- RIGHT OF WAY LINE
- CHAIN LINK FENCE
- BOARD FENCE
- WROUGHT IRON FENCE
- FARM FENCE
- GUARD RAIL
- HAND RAIL
- SILT FENCE
- BUILDING SETBACK LINE
- BOUNDARY LINE
- FLOW LINE
- SECTION LINE
- INDEX CONTOUR
- INTERMEDIATE CONTOUR

CONTACT PERSON FOR EROSION CONTROL & SEDIMENT PRACTICES

WEIHE ENGINEERS, INC.
10505 N. COLLEGE AVE.
INDIANAPOLIS, IN 46268
TELEPHONE: (317) 846-6611
FAX: (317) 843-0546
EMAIL: PARKERF@WEIHE.NET
CONTACT PERSON: FRED PARKER, CPESC

-WARNING-

THIS PLAN TO BE USED FOR EROSION CONTROL PURPOSES ONLY. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED IN THE FIELD BY THE INSPECTOR.

-NOTE-

THIS PLAN INDICATES EROSION CONTROL MEASURES REQUIRED AFTER SOIL STRIPPING AND PAD BUILDING HAS TAKEN PLACE. COORDINATE WITH DEVELOPER FOR MEASURES REQUIRED UNTIL PROPERTY TURNED OVER FOR DEVELOPMENT. COORDINATE WITH CITY OF SHELBYVILLE MS4 REPRESENTATIVE FOR ANY OTHER MEASURES REQUIRED DUE TO SITE CONDITIONS.

EXISTING AREAS

TOTAL SITE = 2.36 AC.
(LIMITS OF CONSTRUCTION)

DISTURBED = 2.36 AC.

EXISTING IMPERVIOUS = 0.005 AC.
EXISTING PERVIOUS = 2.125 AC.

PROPOSED IMPERVIOUS = 1.59 AC.
PROPOSED PERVIOUS = 0.54 AC

SWPPP PHASE 2 LEGEND

- IP - INLET PROTECTION - USE SUBSURFACE INLET PROTECTION WITH OVERFLOW CAPABILITY (DANDY SAC)
- PERMANENT/TEMPORARY SEEDING USE PLANTING CHART
- LIMITS OF DISTURBANCE (CONSTRUCTION LIMITS)
- * - SITE DISCHARGE POINT

LAND DESCRIPTION

APPROXIMATELY 10.85 ACRES LOCATED IN SHELBYVILLE MARKETPLACE PHASE 1, BLOCK B, SHELBYVILLE, IN - PART OF NE/4, SECTION 04, TOWNSHIP 12 NORTH, RANGE 7 EAST, ADDISON TOWNSHIP, SHELBY COUNTY, IN

BENCHMARK INFORMATION

SITE TBMS

TBM 1112 IS A CUT "X" ON THE NORTHEAST BONNET BOLT OF A FIRE HYDRANT ON THE SOUTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 54' SOUTHWEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND SGT. HENDERSON DRIVE.
ELEV. 791.99 (NAVD 88)

TBM 1180 IS A CUT "X" ON THE EAST BONNET BOLT OF A FIRE HYDRANT ON THE NORTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 240' SOUTHWEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND DEPUTY ALYEA DRIVE.
ELEV. 792.93 (NAVD 88)

TBM 1440 IS A CUT "X" ON THE EAST BONNET BOLT OF A FIRE HYDRANT ON THE SOUTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 306' WEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND PROGRESS PARKWAY.
ELEV. 793.06 (NAVD 88)

TBM 1819 IS A CUT "X" ON THE SOUTHWEST BONNET BOLT OF A FIRE HYDRANT ON THE EASTERN RIGHT-OF-WAY OF PROGRESS PARKWAY, APPROXIMATELY 607' SOUTH OF THE INTERSECTION OF PROGRESS PARKWAY AND MARKET PLACE BLVD.
ELEV. 793.12 (NAVD 88)

W S N E

SCALE: 1" = 20'
0 10 20 40

Know what's **below.**
Call before you dig.
Within Indiana Call
811 or 800-382-5544
24 Hours a Day, 7 Days a Week.
PER INDIANA STATE LAW IC 8-1-26. IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*
ALLAN H. WEIHE, P.E., L.S. - FOUNDER
WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.™

PROJECT NO.: W22.0478
DWG NAME: C102 - SWPPP II
DESIGNED BY: SMB/AQ
DRAWN BY: SMB/AQ
CHECKED BY: EAC
DATE: 03/10/2023

DATE	BY	REVISIONS AND ISSUES

xx/xx/20xx

APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

STORMWATER POLLUTION PREVENTION PLAN PHASE II
Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO. C102

PROJECT NO. W22.0478

LOCATION: H:\2022\W220478\Engineering\design\conset\Block B\C102 - SWPPP II.dwg
LAYOUT: C102
DATE/TIME: April 10, 2023 - 4:57pm
PLOTTED BY: steuberm

CONSTRUCTION PLAN - GENERAL PLAN COMPONENTS (SECTION A)

A1 - INDEX OF THE LOCATION OF REQUIRED PLAN ELEMENTS IN THE CONSTRUCTION PLAN: SEE BELOW.
A2 - A VICINITY MAP DEPICTING THE PROJECT SITE LOCATION IN RELATIONSHIP TO RECOGNIZABLE LOCAL LANDMARKS, TOWNS, AND MAJOR ROADS: SEE BOTTOM OF THIS PAGE.
A3 - NARRATIVE OF THE NATURE AND PURPOSE OF THE PROJECT: TO CONSTRUCT A RETAIL CENTER, ASSOCIATED PARKING, DRIVES AND STORMWATER MANAGEMENT FACILITIES.
A4 - LATITUDE AND LONGITUDE TO THE NEAREST FIFTEEN (15) SECONDS: LAT: 39.520701, LONG: -85.742940
A5 - LEGAL DESCRIPTION OF THE PROJECT SITE: SEE SHEET C101, BOTTOM RIGHT OF PAGE.
A6 - 11 X 17-INCH PLAT SHOWING BUILDING LOT NUMBERS/BOUNDARIES AND ROAD LAYOUT/NAMES:
A7 - BOUNDARIES OF THE ONE HUNDRED (100) YEAR FLOODPLAINS, FLOODWAY FRINGES, AND FLOODWAYS: NOT APPLICABLE
A8 - LAND USE OF ALL ADJACENT PROPERTIES: NORTH: UNDEVELOPED, FUTURE COMMERCIAL, SOUTH: UNDEVELOPED, EAST: UNDEVELOPED, FUTURE COMMERCIAL, WEST: UNDEVELOPED, FUTURE HOTEL, DETENTION POND.
A9 - IDENTIFICATION OF A U.S. EPA APPROVED OR ESTABLISHED TMDL: NO REPORT IS NOTED AS OF 2/16/2023 ON WMP AND TMDL REPORTS SEARCH TOOL.
A10 - NAME(S) OF THE RECEIVING WATER(S): LITTLE BLUE RIVER
A11 - IDENTIFICATION OF DISCHARGES TO A WATER ON THE CURRENT 303(D) LIST OF IMPAIRED WATERS AND THE POLLUTANT(S) FOR WHICH IT IS IMPAIRED: LITTLE BLUE RIVER IS NOT LISTED AS AN IMPAIRED 303(D) LIST. THIS PROJECT WILL NOT DIRECT DISCHARGE INTO LITTLE BLUE RIVER.
A12 - SOILS MAP OF THE PREDOMINATE SOIL TYPES: SEE BOTTOM OF THIS PAGE.
A13 - IDENTIFICATION AND LOCATION OF ALL KNOWN WETLANDS, LAKES, AND WATER COURSES ON OR ADJACENT TO THE PROJECT SITE (CONSTRUCTION PLAN, EXISTING SITE LAYOUT): NO WETLANDS, LAKES ARE ADJACENT TO THE PROJECT SITE. THERE IS AN EXISTING POND ADJACENT TO THE PROJECT SITE. OFFSITE WATER FROM THE EAST DRAINS ONTO THE SITE AND IS THEN DIRECTED TO THE EXISTING POND TO THE WEST.
A14 - IDENTIFICATION OF ANY OTHER STATE OR FEDERAL WATER QUALITY PERMITS OR AUTHORIZATIONS THAT ARE REQUIRED FOR CONSTRUCTION ACTIVITIES: NOT APPLICABLE.
A15 - IDENTIFICATION AND DELINEATION OF EXISTING COVER, INCLUDING NATURAL BUFFERS: EXISTING COVER CONSISTS OF GRASS, VINEYARD AND OPEN FIELD. NO SURROUNDING SURFACE WATER IS ONSITE TO REQUIRE A NATURAL BUFFER.
A16 - EXISTING SITE TOPOGRAPHY AT AN INTERVAL APPROPRIATE TO INDICATE DRAINAGE PATTERNS: SEE SHEET C101 FOR EXISTING TOPOGRAPHY.
A17- LOCATION(S) WHERE RUN-OFF ENTERS THE PROJECT SITE: RUNOFF ENTERS THE SITE FROM THE EAST AND SHEETFLOWS TO THE WEST AND EXITS TO THE ADJACENT POND.
A18 - LOCATION(S) WHERE RUN-OFF DISCHARGES FROM THE PROJECT SITE PRIOR TO LAND DISTURBANCE: SEE SHEET C101 FOR EXISTING TOPOGRAPHY. RUNOFF SHEETFLOWS OFF SITE AND IS DIRECTED TO EXISTING POND TO THE WEST.
A19 - LOCATION OF ALL EXISTING STRUCTURES ON THE PROJECT SITE: SEE SHEET C101 FOR EXISTING CONDITIONS AND ITEMS NOTED FOR DEMOLITION. THERE ARE NO EXISTING STRUCTURES ONSITE.
A20 - EXISTING PERMANENT RETENTION OR DETENTION FACILITIES, INCLUDING MANMADE WETLANDS, DESIGNED FOR THE PURPOSE OF STORMWATER MANAGEMENT: NOT APPLICABLE.
A21 - LOCATIONS WHERE STORMWATER MAY BE DIRECTLY DISCHARGED INTO GROUND WATER, SUCH AS ABANDONED WELLS, SINKHOLES, OR KARST FEATURES: NOT APPLICABLE.
A22 - SIZE OF THE PROJECT AREA EXPRESSED IN ACRES: 2.13 AC
A23 - TOTAL EXPECTED LAND DISTURBANCE EXPRESSED IN ACRES: 2.36 AC
A24 - PROPOSED FINAL TOPOGRAPHY: SEE SHEET C300 GRADING PLAN SHEET.
A25 - LOCATIONS AND APPROXIMATE BOUNDARIES OF ALL DISTURBED AREAS: SEE SHEETS C101 AND C102 FOR LIMITS OF DISTURBANCE.
A26 - LOCATIONS, SIZE, AND DIMENSIONS OF ALL STORMWATER DRAINAGE SYSTEM SUCH AS CULVERTS, STORMWATER SEWER, AND CONVEYANCE CHANNELS: SEE SHEETS C601, C800 FOR LOCATION, SIZE AND DIMENSIONS OF PROPOSED STORMWATER DRAINAGE SYSTEMS.
A27 - LOCATIONS OF SPECIFIC POINTS WHERE STORMWATER AND NON-STORMWATER DISCHARGES WILL LEAVE THE PROJECT SITE: SEE SHEET C102 SWPPP PLAN FOR OUTFALL OF THE PROPOSED STORM SEWERS (EXISTING STORM SEWERS TO THE SOUTH).
A28 - LOCATION OF ALL PROPOSED SITE IMPROVEMENTS, INCLUDING ROADS, UTILITIES, LOT DELINEATION AND IDENTIFICATION, PROPOSED STRUCTURES, AND COMMON AREAS: SEE CIVIL PLANS SHEETS FOR PROPOSED SITE IMPROVEMENTS, WHICH INCLUDE A RETAIL CENTER, ASSOCIATED PARKING LOT, STORMWATER FACILITIES, LANDSCAPING, RELATED UTIITIES.
A29 - LOCATION OF ALL ON-SITE AND OFF-SITE SOIL STOCKPILES AND BORROW AREAS: SEE SHEET C100 FOR LOCATION OF SOIL STOCKPILES (ONSITE)
A30 - CONSTRUCTION SUPPORT ACTIVITIES THAT ARE EXPECTED TO BE PART OF THE PROJECT: NOT APPLICABLE.
A31 - LOCATION OF ANY IN-STREAM ACTIVITIES THAT ARE PLANNED FOR THE PROJECT INCLUDING, BUT NOT LIMITED TO, STREAM CROSSINGS AND PUMP AROUNDS: NOT APPLICABLE.

STORMWATER POLLUTION PREVENTION - CONSTRUCTION COMPONENT (SECTION B)

B1 - DESCRIPTION OF THE POTENTIAL POLLUTANT GENERATING SOURCES AND POLLUTANTS, INCLUDING ALL POTENTIAL NON-STORMWATER DISCHARGES: POTENTIAL POLLUTANTS FROM CONSTRUCTION ACTIVITY SUCH AS ASPHALT FROM PAVING; CONCRETE FROM CURBING, SIDEWALKS, OIL, GREASE, ANTIFREEZE, GASOLINE AND DIESEL FUEL FROM CONSTRUCTION EQUIPMENT; SOIL EROSION; FERTILIZER AND PESTICIDES FROM LANDSCAPING AND TRASH SHOULD BE PROPERLY ATTENDED TO TO REDUCE THE CONTAMINANTS FROM ENTERING THE STORM SYSTEM. TRASH SHOULD BE CLEANED UP TO REDUCE CLOGGING OF STORM SYSTEMS AND REDUCE POTENTIAL BACTERIA AND/OR OTHER BIOLOGICAL AGENTS FROM ENTERING IN THE STORM SYSTEM.
B2 - STABLE CONSTRUCTION ENTRANCE LOCATIONS AND SPECIFICATIONS: SEE SHEET C100 FOR CONSTRUCTION ENTRANCE, WHICH IS LOCATED AT THE PROPOSED NORTH ENTRANCE. DETAIL IS LOCATED ON SHEET C103.
B3 - SPECIFICATIONS FOR TEMPORARY AND PERMANENT STABILIZATION: SEE TEMPORARY SEEDING SCHEDULE AND NOTES ON DETAIL LOCATED ON SHEET C103, TOP MIDDLE OF PAGE. ALSO LOCATED ON SHEET C102 IS A SEASONAL SOIL PROTECTION CHART FOR CONTRACTOR GUIDELINES ON SOIL STABILIZATION METHODS.
B4 - SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS: THERE ARE TWO SWALES SHOWN ON THE GRADING SHEET C601-C602. UPON FINAL GRADING CONTRACTOR TO INSTALL EROSION CONTROL BLANKET, RIPRAP AND SEEDING PER PLAN SHEET C101 AND DETAILS ON SHEETS C103 AND C104.
B5 - SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS: UPON FINAL GRADING, CONTRACTOR TO APPLY SEEDING AT SPECIFIED RATES PER C101 AND DETAILS ON SHEET C104 AND L200.
B6 - RUN-OFF CONTROL MEASURES: THE POND AND BYPASS PIPE OUTLET TO THE US421 ROW. RIPRAP AND EROSION CONTROL BLANKET AS SPECIFIED ON SHEET C101 MUST BE INSTALLED AFTER FINAL GRADING AND STRUCTURE INSTALLATION.
B7 - STORMWATER OUTLET PROTECTION LOCATION AND SPECIFICATIONS: THE POND AND BYPASS PIPE OUTLET TO THE US421 ROW. RIPRAP AND EROSION CONTROL BLANKET AS SPECIFIED ON SHEET C101 MUST BE INSTALLED AFTER FINAL GRADING AND STRUCTURE INSTALLATION.
B8 - GRADE STABILIZATION STRUCTURE LOCATIONS AND SPECIFICATIONS: NOT APPLICABLE.
B9 - DEWATERING APPLICATIONS AND MANAGEMENT METHODS: IN THE EVENT THAT DEWATERING IS REQUIRED ON SITE, PROVIDE SEDIMENT AND OIL CONTAINMENT WITH THE USE OF THE ULTRA DEWATERING BAG, PART #9724-O/S AS PROVIDED BY ULTRATECH INTERNATIONAL, INC. AND SUPPLIED BY D2 LAND & WATER RESOURCES. REFER TO MANUFACTURER SPECIFICATIONS FOR ALTERNATE SIZES OF BAGS IF NEEDED. ALTERNATE EQUAL MEASURES OF CONTAINMENT MAY BE APPROVED BY THE ENGINEER OR EROSION CONTACT PERSON IF ANOTHER PRODUCT OR METHOD OF CONTAINMENT IS DESIRED.
B10 - MEASURES UTILIZED FOR WORK WITHIN WATERBODIES: NOT APPLICABLE.
B11 - MAINTENANCE GUIDELINES FOR EACH PROPOSED STORMWATER QUALITY MEASURE: INSPECT ALL EROSION CONTROL AND STORMWATER QUALITY MEASURES WEEKLY AND AFTER EACH STORM EVENT OR HEAVY USE. REPAIR/REPLACE ANY COMPROMISED OR FAILED MEASURE AS REQUIRED. MORE SPECIFIC GUIDELINES ARE INCLUDED ON INDIVIDUAL DETAILS AND BELOW.
B12 - PLANNED CONSTRUCTION SEQUENCE THAT DESCRIBES THE IMPLEMENTATION OF STORMWATER QUALITY MEASURES IN RELATION TO LAND DISTURBANCE:

1. A PRE-CONSTRUCTION MEETING WITH THE CITY OF SHELBYVILLE IS REQUIRED PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK. ADDITIONALLY, IDEM IS REQUIRED TO BE CONTACTED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
2. CONSTRUCTION ENTRANCE - INSTALL CONSTRUCTION ENTRANCE OFF OF PROGRESS PARKWAY. SEE SHEET C101 FOR LOCATION AND SHEET C104 FOR DETAIL.
3. INSTALL SILT FENCING AND ALL OTHER EROSION CONTROL MEASURES PRIOR TO ANY EARTH MOVING.
4. EARTHWORK - STRIP TOPSOIL, BEGIN ROUGH GRADING AND PREPARE BUILDING PAD AND ROUGH GRADE.
5. STORM SEWER - INSTALL STORM SEWER SYSTEM AND CORRESPONDING INLET PROTECTION
6. UTILITIES - COORDINATE INSTALLATION OF ALL UTILITIES.
7. FINISH GRADING AND PERMANENT EROSION CONTROL - FINISH GRADE AND PERMANENTLY SEED ALL PROPERTY PERIMETER AREAS.
8. PAVEMENT - INSTALL STONE, BASE COURSES AND FINISHED GRADES FOR ENTRY DRIVE.
9. CLEANUP - CONTRACTOR SHALL SPOIL ALL EXCESS MATERIALS, REGRADE AND STABILIZE ALL AREAS DISTURBED BY UTILITY INSTALLATIONS AND RESEED.
10. FINAL LANDSCAPING - INSTALL FINAL LANDSCAPING.

B13 - PROVISIONS FOR EROSION AND SEDIMENT CONTROL ON INDIVIDUAL RESIDENTIAL BUILDING LOTS REGULATED UNDER THE PROPOSED PROJECT: NOT APPLICABLE.
B14 - MATERIAL HANDLING AND SPILL PREVENTION AND SPILL RESPONSE PLAN MEETING THE REQUIREMENTS IN 327 IAC 2-6.1: POTENTIAL POLLUTANTS FROM CONSTRUCTION ACTIVITY SUCH AS ASPHALT FROM PAVING; CONCRETE FROM CURBING, SIDEWALKS. A CONCRETE WASHOUT AREA HAS BEEN DESIGNATED OIL, GREASE, ANTIFREEZE, GASOLINE AND DIESEL FUEL FROM CONSTRUCTION EQUIPMENT. IF THERE IS A SPILL FROM ONE OF THESE, IMMEDIATE CLEANUP SHOULD OCCUR; SOIL EROSION; FERTILIZER AND PESTICIDES FROM LANDSCAPING AND TRASH SHOULD BE PROPERLY ATTENDED TO TO REDUCE THE CONTAMINANTS FROM ENTERING THE STORM SYSTEM. TRASH SHOULD BE CLEANED UP TO REDUCE CLOGGING OF STORM SYSTEMS AND REDUCE POTENTIAL BACTERIA AND/OR OTHER BIOLOGICAL AGENTS FROM ENTERING IN THE STORM SYSTEM.
SHALL MEET THE REQUIREMENTS OF IAC 2-6.1. FOLLOW MATERIAL SAFETY DATA SHEET (MSDS) GUIDELINES FOR CONTAMINANTS PRESENT ON SITE..
CONTACT INFORMATION FOR STATE AND LOCAL EMERGENCY SPILL RESPONSE IS INCLUDED ON THIS SHEET, TOP MIDDLE OF PAGE.
B15 - MATERIAL HANDLING AND STORAGE PROCEDURES ASSOCIATED WITH CONSTRUCTION ACTIVITY: APPROPRIATE MEASURES MUST BE IMPLEMENTED TO MANAGE WASTES OR UNUSED BUILDING MATERIALS INCLUDING, BUT NOT LIMITED TO GARBAGE, DEBRIS, CLEANING WASTES, WASTEWATER, CONCRETE OR CEMENTITIOUS WASHOUT WATER, MORTAR/MASONRY PRODUCTS, SOIL STABILIZERS, LIME STABILIZATION MATERIALS, AND OTHER SUBSTANCES. WASTES AND UNUSED BUILDING MATERIALS MUST BE MANAGED AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE STATUTES AND REGULATIONS.
PROPER STORAGE AND HANDLING OF MATERIALS, SUCH AS FUELS OR HAZARDOUS WASTES, AND SPILL PREVENTION AND CLEAN-UP MEASURES MUST BE IMPLEMENTED TO MINIMIZE THE POTENTIAL FOR POLLUTANTS TO CONTAMINATE SURFACE OR GROUND WATER OR DEGRADE SOIL QUALITY.
CONCRETE WASHOUT AREA IS LOCATED ON SHEET C100. WASH WATER MUST BE DIRECTED INTO LEAK-PROOF CONTAINERS OR LEAK-PROOF CONTAINMENT AREAS WHICH ARE LOCATED AND DESIGNED TO DIVERT STORMWATER RUN-OFF TO PREVENT THE DISCHARGE AND/OR OVERFLOW OF THE WASH WATER.

STORMWATER POLLUTION PREVENTION - POST-CONSTRUCTION COMPONENT (SECTION C)

C1 - DESCRIPTION OF POLLUTANTS AND THEIR SOURCES ASSOCIATED WITH THE PROPOSED LAND USE: POTENTIAL POLLUTANTS FROM POST-CONSTRUCTION ACTIVITY SUCH AS SANDS AND SALTS FROM SNOW REMOVAL; OIL, GREASE, ANTIFREEZE, ETC. FROM VEHICLES INCLUDING HEAVY METAL FROM BRAKE PAD WEAR SHOULD BE PROPERLY ATTENDED TO TO REDUCE THE CONTAMINANTS FROM ENTERING THE STORM SYSTEM. TRASH SHOULD BE CLEANED UP TO REDUCE CLOGGING OF STORM SYSTEMS AND REDUCE POTENTIAL BACTERIA AND/OR OTHER BIOLOGICAL AGENTS FROM ENTERING IN THE STORM SYSTEM. EXCESS FERTILIZERS AND HERBICIDES SHOULD BE AVOIDED. CLEAN UP IMMEDIATELY IF ANY IS SPILLED.
C2 - DESCRIPTION OF PROPOSED POST-CONSTRUCTION STORMWATER MEASURES: THE ONSITE STORMWATER WILL BE CONVEYED BY AN UNDERGROUND PIPE SYSTEM INTO THE WATER QUALITY BMP, PROVIDED BY THE EXCELERATOR XC-5 MECHANICAL WATER QUALITY UNITS. THE STORM WATER IS THEN DISPERSED INTO THE WET POND, THEN RELEASED FROM THE SITE BY A CYLINDRICAL MANHOLE USED AS A CONTROL STRUCTURE. THE INFORMATION FOR THESE PRODUCTS ARE BETTER DEFINED IN THE C600 SERIES PLANS AND DETAILS. ADDITIONAL WATER QUALITY MEASURES WILL BE IMPLEMENTED BY THE SITE OWNER AS PART OF THEIR SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN.
C3 - PLAN DETAILS FOR EACH STORMWATER MEASURES: SEE SHEET C608 FOR THE DETAIL OF THE PROPOSED WATER QUALITY BMP AND ASSOCIATED BYPASS STRUCTURES AND OUTLET CONTROL.
C4 - SEQUENCE DESCRIBING STORMWATER MEASURE IMPLEMENTATION: THE WATER QUALITY BMP XC-5 WILL BE INSTALLED DURING THE STORM SEWER INSTALLING OF THE PROJECT. SEE SEQUENCE DESCRIBED ABOVE. AFTER FINAL GRADING, RIPRAP, EROSION CONTROL BLANKET WILL BE INSTALLED TO MAINTAIN GRADES WHILE GRASS IS ESTABLISHED.
C5 - MAINTENANCE GUIDELINES FOR PROPOSED POST-CONSTRUCTION STORMWATER MEASURES: AN OPERATION MANUAL IS SUPPLIED WITH THESE PLANS.
C6 - ENTITY THAT WILL BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE POST-CONSTRUCTION STORMWATER MEASURES: THE PROJECT SITE OWNER, GSSR INVESTMENTS, WILL BE RESPONSIBLE FOR ONGOING OPERATION AND MAINTENANCE OF THE POST-CONSTRUCTION STORMWATER MEASURES.

MECHANICAL WATER QUALITY UNIT:
THE MECHANICAL WATER QUALITY UNIT PROVIDES A HIGHLY EFFECTIVE MEANS FOR THE REMOVAL OF SEDIMENT, FLOATING DEBRIS AND FREE-OIL. SWIRL TECHNOLOGY, OR VORTEX SEPARATION, IS A PROVEN FORM OF TREATMENT UTILIZED IN THE STORMWATER INDUSTRY TO ACCELERATE GRAVITATIONAL SEPARATION. THE WQU PROVIDES TREATMENT FOR MOST CONTAMINATED FIRST FLUSH, WHILE THE CLEANER PEAK STORM FLOW IS DIVERTED AND CHANNELED THROUGH THE MAIN CONVEYANCE PIPE. A COMBINATION OF GRAVITATIONAL AND HYDRODYNAMIC DRAG FORCES ENCOURAGES THE SOLIDS TO DROP OUT OF THE FLOW AND MIGRATE TO THE CENTER OF THE CHAMBER WHERE VELOCITIES ARE THE LOWEST.

CATCH BASINS:
CATCH BASIN/INLET CLEANING AND REPAIR HAS TRADITIONALLY BEEN PERFORMED TO RESPOND TO LOCALIZED FLOODING PROBLEMS IN STREETS. CATCH BASINS ARE INLETS AT THE CURB WITH A SMALL TRAP (USUALLY SIX INCHES TO ONE FOOT DEEP) BELOW THE SEWER PIPE. THESE DEVICES HELP TO CLEAN STORM WATER BECAUSE PARTICLES IN STREET RUNOFF SETTLE INTO THE TRAP BEFORE THE WATER ENTERS THE STORM SEWERS. CATCH BASINS REQUIRE REGULAR CLEANING OF THE SEDIMENT TRAP TO BE. THE INLETS DO NOT TRAP SEDIMENTS AND DON'T NEED CLEANING UNLESS THEY ARE PLUGGED. CLEANING FOR EITHER CATCH BASINS OR INLETS CAN BE DONE BY HAND (E.G., WITH A CLAMSHELL OR SHOVEL) OR WITH A VACUUM TRUCK.

CONVEYANCE STORM PIPES:
A GOOD RULE OF THUMB IS TO CONDUCT INSPECTION OF STORM DRAIN INLETS, DITCHES, CHANNELS, PONDS AND OTHER TREATMENT FACILITIES AT LEAST ONCE A YEAR, PRIOR TO THE BEGINNING OF THE RAINY SEASON. COMPLETE INSPECTIONS EARLY ENOUGH SO THAT REPAIRS CAN BE MADE DURING DRY WEATHER. CATCH BASINS SHOULD BE INSPECTED AT LEAST ONCE EVERY SIX MONTHS. SOME STORM WATER TREATMENT DEVICES, SUCH AS OIL/WATER SEPARATORS, MAY REQUIRE MORE FREQUENT INSPECTION. FOR THESE, CHECK THE MANUFACTURER'S SPECIFICATION OR OTHER DESIGN GUIDANCE HANDBOOKS. SEWER PIPES AND CULVERTS SHOULD BE INSPECTED EVERY THREE TO FIVE YEARS, OR IN RESPONSE TO A REPORTED PROBLEM. MOST AGENCIES INSPECT THEIR SEWER PIPES SIX INCHES OR LARGER WITH A TV CAMERA, AND PIPES 36 INCHES OR LARGER WITH A WALK-THROUGH INSPECTION. ALL OTHER PARTS OF THE SYSTEM ARE INSPECTED VISUALLY.

LOOK FOR EXCESSIVE SILT BUILD-UP, EROSION, UNUSUAL ALGAL GROWTH, CRACKED OR COLLAPSED PIPES, MISALIGNED JOINTS, AND OTHER SIGNS OF PROBLEMS SUCH AS A SHEEN ON THE WATER SURFACE, DISCOLORED WATER, OR AN UNPLEASANT ODOR. CHECK WITH PRODUCT MANUFACTURERS OR STORM WATER HANDBOOKS FOR ADVICE ON WHAT TO LOOK FOR WHEN INSPECTING MORE SOPHISTICATED TREATMENT DEVICES SUCH AS FLOW SPLITTERS AND DIVERTERS. WHEN A PROBLEM IS NOTED, TAKE STEPS TO CORRECT THE PROBLEM, OR ROUTE THIS INFORMATION IMMEDIATELY TO THE APPROPRIATE INDIVIDUAL(S) IN YOUR ORGANIZATION WHO CAN RESPOND. IF NEEDED, DEVELOP A GOOD RESPONSE PLAN TO ENSURE QUICK FOLLOW-UP IN THE FUTURE.

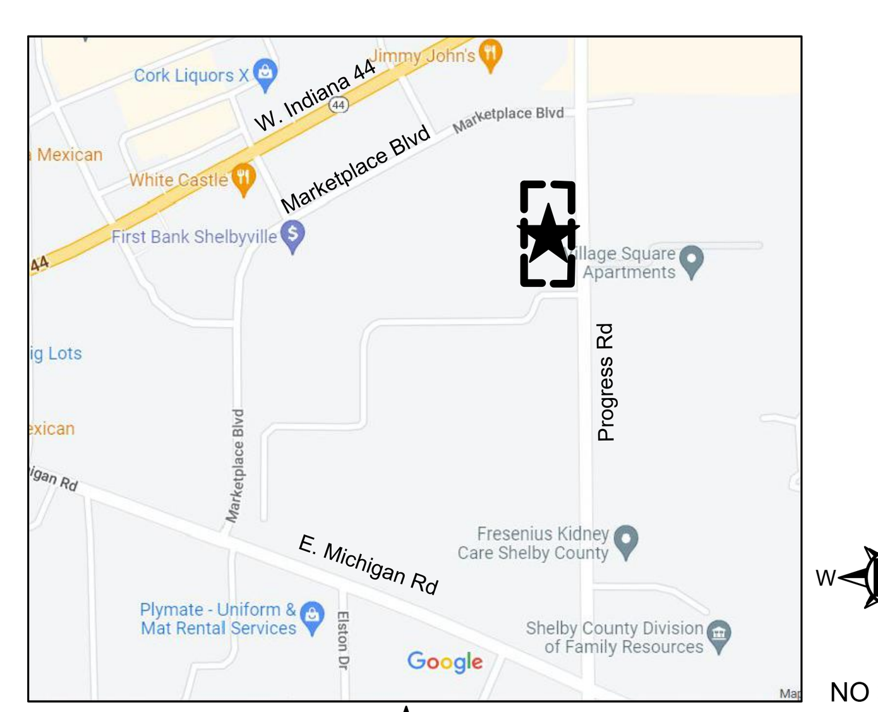
SECTION 1 EMERGENCY RESPONSE NUMBERS

EMERGENCY RESPONSE TO ANY LIFE THREATENING PROBLEM	911
SHELBYVILLE FIRE DEPARTMENT	911
SHELBYVILLE POLICE DEPARTMENT	911
INDIANA DEPARTMENT OF NATURAL RESOURCES	812-477-8773
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT	317-233-7745
SHELBY COUNTY SOIL AND WATER	765-544-2051
CITY OF SHELBYVILLE MS4	317-364-4990

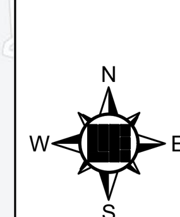
SECTION 2 MATERIAL HANDLING AND SPILL PREVENTION PLAN

IN ORDER TO MINIMIZE THE RELEASE OF POTENTIAL POLLUTANTS DURING CONSTRUCTION THE CONTRACTORS SHALL IMPLEMENT THIS MATERIAL HANDLING AND SPILL PREVENTION PLAN. THE CONTRACTOR SHALL REVIEW THIS PLAN WITH ALL SUBCONTRACTORS AND REQUIRE THAT THEY IMPLEMENT THE PLAN AS WELL.

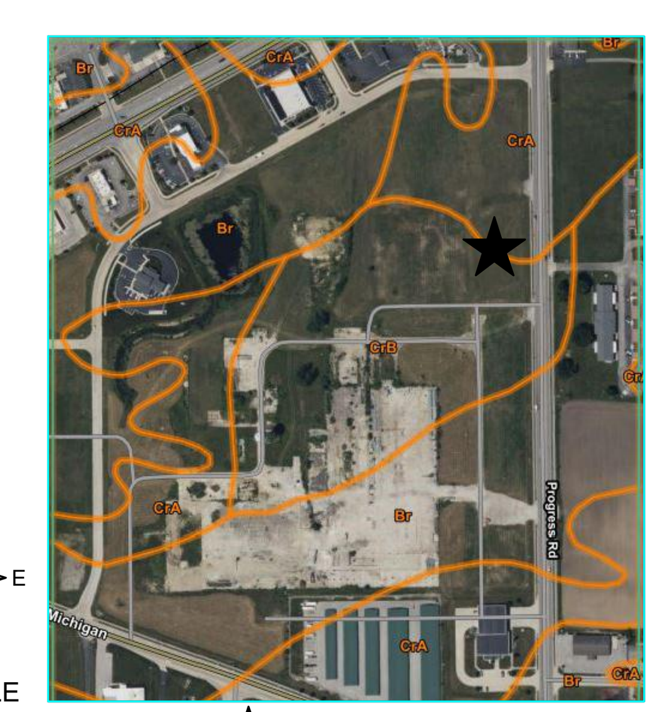
1. CONSTRUCTION EQUIPMENT
A. FUELING, LUBRICATION AND FLUIDS: ALL OPERATIONS INVOLVING THE ADDITION OF FLUIDS TO EQUIPMENT SHOULD BE DONE IN ONE LOCATION, AS DESIGNATED BY THE CONSTRUCTION MANAGER, SO THAT SPILLS ARE LIMITED TO ONE LOCATION ON THE SITE, WHICH WILL FACILITATE THE CLEANUP OF SPILLS. IF AN ONSITE-FUELING TANK IS PLANNED TO BE ON SITE, IT SHALL BE DOUBLE WALLED AND STORED IN THIS DESIGNED AREA. THIS LOCATION IS AN AREA THAT WILL NOT ALLOW SPILLED FLUIDS TO MIGRATE INTO SUBSURFACE SOILS. IN THE EVENT OF A SPILL, THE FLUID SHALL IMMEDIATELY BE CLEANED UP BY REMOVING THE CONTAMINATED SOIL OR STONE, WHICH SHALL BE DISPOSED OF IN AN ACCEPTABLE MANNER. SPILLS ON HARD SURFACES SHALL BE SOAKED UP BY AN ACCEPTABLE MATERIAL SUCH AS OIL DRY AND THE ABSORBENT MATERIAL DISPOSED OF IN A PROPER MANNER. THE SPILL SHALL ALSO BE REPORTED IMMEDIATELY TO THE CONSTRUCTION MANAGER'S SUPERINTENDENT.
B. EQUIPMENT REPAIR, ESPECIALLY WHEN FLUIDS MUST BE REMOVED FROM THE EQUIPMENT OR THE POSSIBILITY OF FLUID SPILLS IS HIGH, SHOULD ALWAYS BE DONE OFFSITE AT A FACILITY THAT IS MORE SUITABLE THAN A CONSTRUCTION SITE TO HANDLE SPILLS. WHEN EQUIPMENT MUST BE REPAIRED ONSITE IT SHOULD BE MOVED TO THE MAINTENANCE AND FUELING AREA IF POSSIBLE. OTHERWISE, SUITABLE ON SITE CONTAINERS SHOULD BE PLACED UNDER THE EQUIPMENT DURING REPAIR TO CATCH ANY SPILLED FLUIDS AND THESE FLUIDS SHOULD BE DISPOSED OF IN A PROPER MANNER.
C. ALL REUSABLE FLUID CONTAINERS, SUCH AS GASOLINE CANS, SHALL BE INSPECTED FOR LEAKS EACH TIME THEY ARE USED. IF LEAKS ARE FOUND, THE FLUID SHALL BE REMOVED FROM THE CONTAINER IN A PROPER MANNER AND THE CONTAINER DISPOSED OF IN AN ACCEPTABLE MANNER. EMPTY DISPOSABLE CONTAINER, SUCH AS GREASE TUBES AND LUBRICATING OIL AND BRAKE FLUID CONTAINERS, AND THEIR PACKAGING, SHALL BE DISPOSED OF IN A PROPER MANNER AND SHALL NOT BE LEFT ON THE GROUND OR IN THE OPEN ON THE CONSTRUCTION SITE.
2. CONSTRUCTION MATERIALS AND THEIR PACKAGING
A. EROSION CONTROL MEASURE SHOWN ON THE SUBJECT PROJECT SHALL BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION IN THE PROPER SEQUENCING TO MINIMIZE SOIL EROSION. EROSION CONTROLS SHALL BE INSPECTED AND MAINTAINED AS DESCRIBED ELSEWHERE ON THE PLANS. EXCESSIVE DUSTING OF SOIL ON THE SITE SHALL BE MINIMIZED BY REDUCING CONSTRUCTION TRAFFIC ACROSS BARE SOIL DURING DRY AND/OR WINDY WEATHER, AND BY APPLYING WATER OR OTHER ACCEPTABLE DUST CONTROL MEASURES TO THE SOIL. UPON COMPLETION OF CONSTRUCTION AND SUITABLE ESTABLISHMENT OF PERMANENT VEGETATION, TEMPORARY EROSION CONTROL MEASURES SUCH AS SILT FENCE, CHECK DAMS AND INLET PROTECTION DEVICES SHALL BE REMOVED IN A MANNER TO MINIMIZE ADDITIONAL LAND DISTURBANCE. ANY AREAS DISTURBED BY THESE OPERATIONS SHALL BE PROPERLY REVEGATATED.
B. LARGE WASTE MATERIALS CREATED BY CUTTING, SAWING, DRILLING, OR OTHER OPERATIONS SHALL BE PROPERLY DISPOSED OF IN SUITABLE WASTE CONTAINERS. THE SITE SHALL BE CHECKED AT THE END OF THE DAY, AS A MINIMUM, AND ALL WASTE MATERIALS, INCLUDING THOSE BLOWN ACROSS OR OFF THE SITE BY WIND SHALL BE PICKED UP AND DISPOSED OF IN SUITABLE CONTAINERS. WHERE POSSIBLE, OPERATIONS SUCH AS SAWING THAT CREATE SMALL PARTICLES SHOULD BE PERFORMED IN ONE SPOT IN AN AREA PROTECTED FROM WIND, AND WASTE PARTICLES COLLECTED AND DISPOSED OF FREQUENTLY TO MINIMIZE WIND DISPERSAL. PACKAGING USED TO TRANSPORT MATERIALS TO THE SITE FOR CONSTRUCTION OF THE FACILITY SHALL BE DISPOSED OF PROPERLY, WHETHER THE MATERIAL IS TAKEN OUT OF ITS PACKAGE AND INCORPORATED INTO THE PROJECT IMMEDIATELY OR STORED ONSITE FOR FUTURE USE. PACKAGED MATERIALS STORED ONSITE SHALL BE INSPECTED REGULARLY AND ANY LOOSE PACKAGING SHALL BE REPAIRED OR DISPOSED OF PROPERLY.
C. ALL DEWATERING OF ACTIVITIES SHALL BE DONE IN ACCORDANCE TO GOOD EROSION CONTROL PRACTICES. THESE PRACTICES SHOULD INCLUDE THE USE OF DIRT BAGS SUCH AS SILT FENCE INLET PROTECTION. THE USE OF THESE TYPES OF DEWATERING DEVICES WILL REMOVE LARGE QUANTITIES OF SILT, SEDIMENT, AND DIRT AND PREVENT THESE MATERIALS TO ENTER THE STORM SEWER SYSTEM.
D. IF THE USE OF LIME IS USED TO STABILIZE THE SOIL OF THE SITE THEN ALL CONSTRUCTION EQUIPMENT USED SHALL BE CLEANED OF ALL EXCESS MATERIAL WITH WATER IN THE MAINTENANCE AND REFUELING AREA AS SHOWN WITHIN THESE PLANS.
E. NUTRIENTS AND FERTILIZERS SHALL ONLY BE USED TO ESTABLISH RAPID VEGETATION. WHEN THESE PRODUCTS ARE UTILIZED, THE USER SHOULD PAY STRICT ATTENTION TO THE PRODUCTS RECOMMENDED USAGE.
3. CONCRETE WASTE WATER
A. ALL CONCRETE WASTEWATER SHALL BE DISPOSED OF IN THE DESIGNED AREA AS DIRECTED BY THE CONSTRUCTION MANAGER. THIS AREA IS TO BE A 3' DEEP, 10' SQUARE PIT AS DETAILED ON THE EROSION CONTROL PLAN. THIS AREA SHALL BE INSPECTED ON A DAILY BASIS AT A MINIMUM. WHEN THIS AREA BECOMES FULL, THE POLLUTANTS SHALL BE EXCAVATED, PLACED IN AN ACCEPTABLE CONTAINER AND DISPOSED OF IN PROPER MANNER, BY THE EXCAVATION CONTRACTOR.
4. PAINT PRODUCTS
A. ALL EXCESS PAINT AND THEIR RELATED PRODUCTS SHALL BE DISPOSED OF IN THE MANNER AT WHICH THE MANUFACTURER SUGGESTS. UNDER NO CIRCUMSTANCES WILL PAINT OR THEIR RELATED PRODUCTS BE CLEANED OR DISPOSED OF IN SOIL, SANITARY SEWERS, STORM SEWERS OR DETENTION BASINS. ANY VIOLATION OF THIS SHALL BE REPORTED TO THE JOB SUPERINTENDENT.
IN THE EVENT OF ACCIDENTALLY CONTAMINATION ALL EFFORTS SHOULD BE MADE TO REMOVE CONTAMINANTS IN AN APPROPRIATE MANNER. THE SHELBYVILLE FIRE DEPARTMENT SHOULD BE CONTACTED IMMEDIATELY TO DETERMINE IF FURTHER MEASURES ARE NEEDED.



★ PROJECT LOCATION
AREA MAP



NO SCALE



★ PROJECT LOCATION
SOILS MAP

RULE 6. SPILLS OF OIL AND OTHER OBJECTIONABLE SUBSTANCES; REPORTING, CONTAINMENT AND CLEANUP

(REPEALED BY WATER POLLUTION CONTROL BOARD; FILED FEB 25, 1997, 1:00 P.M.: 20 IR 1734)

RULE 6.1. SPILLS; REPORTING, CONTAINMENT, AND RESPONSE

327 IAC 2-6.1-1 APPLICABILITY
AUTHORITY: IC 13-14-8-7
AFFECTED: IC 13-11-2; IC 13-18-1; IC 13-18-3; IC 13-18-8; IC 13-18-17
SEC. 1. THIS RULE APPLIES TO THE REPORTING AND CONTAINMENT OF, AND THE RESPONSE TO THOSE SPILLS OF HAZARDOUS SUBSTANCES, EXTREMELY HAZARDOUS SUBSTANCES, PETROLEUM, AND OBJECTIONABLE SUBSTANCES THAT ARE OF A QUANTITY, TYPE, DURATION AND IN A LOCATION AS TO DAMAGE THE WATERS OF THE STATE. NOTHING IN THIS RULE IS INTENDED TO AFFECT REPORTING OR CLEAN-UP REQUIREMENTS SET FORTH BY OTHER FEDERAL, STATE, OR LOCAL LAWS. (WATER POLLUTION CONTROL BOARD; 327 IAC 2-6.1-1; FILED FEB 25, 1997, 1:00 P.M.: 20 IR 1731; READOPTED FILED JAN 10, 2001, 3:23 P.M.: 24 IR 1518; READOPTED FILED NOV 21, 2007, 1:16 P.M.: 20071219-IR-327070553BFA)

327 IAC 2-6.1-2 SPECIAL AREAS
AUTHORITY: IC 13-14-8-7
AFFECTED: IC 13-11-2; IC 13-18-1; IC 13-18-3; IC 13-18-8; IC 13-18-17
SEC. 2. CERTAIN AREAS OF THE STATE ARE RECOGNIZED AS HAVING UNIQUE GEOLOGY. A LARGE SECTION OF THE MID-SOUTHERN PART OF THE STATE IS A KARST REGION. PORTIONS OF SAINT JOSEPH, ELKHART, KOSCIUSKO, AND LAGRANGE COUNTIES CONTAIN A SOLE SOURCE AQUIFER AS REFERENCED IN 42 U.S.C. 300H-3(E). THE WATERS OF THE STATE ARE PARTICULARLY VULNERABLE TO DAMAGE FROM SPILLS IN THESE AREAS, AND CARE SHOULD BE EXERCISED WHEN EVALUATING DAMAGE FROM SPILLS. INFORMATION ABOUT THESE AREAS CAN BE OBTAINED BY CALLING THE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, OFFICE OF LAND QUALITY, EMERGENCY RESPONSE SECTION: AREA CODE 1-888-233-7745 FOR IN-STATE CALLS (TOLL FREE), (317) 233-7745 FOR OUT-OF-STATE CALLS. (WATER POLLUTION CONTROL BOARD; 327 IAC 2-6.1-2; FILED FEB 25, 1997, 1:00 P.M.: 20 IR 1731; READOPTED FILED JAN 10, 2001, 3:23 P.M.: 24 IR 1518; READOPTED FILED NOV 21, 2007, 1:16 P.M.: 20071219-IR-327070553BFA; ERRATA FILED MAY 27, 2008, 2:06 P.M.: 20080625-IR-327080419ACA)

327 IAC 2-6.1-3 EXCLUSIONS
AUTHORITY: IC 13-14-8-7
AFFECTED: IC 13-11-2; IC 13-18-1; IC 13-18-3; IC 13-18-8; IC 13-18-17
SEC. 3. NOTWITHSTANDING ANY OTHER SECTION OF THIS RULE, THE REPORTING REQUIREMENT OF THIS RULE DOES NOT APPLY TO THE FOLLOWING OCCURRENCES:
(1) DISCHARGES OR EXCEEDANCES THAT ARE UNDER THE JURISDICTION OF AN APPLICABLE PERMIT WHEN THE SUBSTANCE IN QUESTION IS COVERED BY THE PERMIT AND DEATH OR ACUTE INJURY OR ILLNESS TO ANIMALS OR HUMANS DOES NOT OCCUR.
(2) LAWFUL APPLICATION OF MATERIALS, INCLUDING, BUT NOT LIMITED TO:
(A) COMMERCIAL OR NATURAL FERTILIZERS AND PESTICIDES ON OR TO LAND OR WATER; OR
(B) DUST SUPPRESSION MATERIALS.
(3) THE APPLICATION OF PETROLEUM NECESSARY FOR CONSTRUCTION THAT DOES NOT DAMAGE WATERS OF THE STATE.
(4) SPILLS OF LESS THAN ONE (1) POUND OR ONE (1) PINT.
(5) SPILLS OF INTEGRAL OPERATING FLUIDS, IN THE USE OF MOTOR VEHICLES OR OTHER EQUIPMENT, THE TOTAL VOLUME OF WHICH IS LESS THAN OR EQUAL TO FIFTY-FIVE (55) GALLONS AND WHICH DO NOT DAMAGE WATERS OF THE STATE.
(6) OIL SHEENS PRODUCED AS A RESULT OF THE NORMAL OPERATION OF PROPERLY FUNCTIONING WATERCRAFT.
(7) A RELEASE OF A SUBSTANCE INTEGRAL TO A SPILL RESPONSE ACTIVITY THAT HAS BEEN APPROVED AND AUTHORIZED BY A STATE OR FEDERAL ONSCENE COORDINATOR. (WATER POLLUTION CONTROL BOARD; 327 IAC 2-6.1-3; FILED FEB 25, 1997, 1:00 P.M.: 20 IR 1731; ERRATA FILED MAR 7, 1997, 2:25 P.M.: 20 IR 1738; READOPTED FILED JAN 10, 2001, 3:23 P.M.: 24 IR 1518; READOPTED FILED NOV 21, 2007, 1:16 P.M.: 20071219-IR-327070553BFA)

327 IAC 2-6.1-4 DEFINITIONS
AUTHORITY: IC 13-14-8-7
AFFECTED: IC 13-11-2; IC 13-18-1; IC 13-18-3; IC 13-18-8; IC 13-18-17; IC 14-8-2-7; IC 14-25-7-13; IC 14-25-7-15
SEC. 4. IN ADDITION TO THE DEFINITIONS CONTAINED IN IC 13-11-2-17(D), IC 13-11-2-35(A), IC 13-11-2-51, IC 13-11-2-158(A), IC 13-11-2-160, IC 13-11-2-260, IC 13-11-2-265, AND IN 327 IAC 1, THE FOLLOWING DEFINITIONS APPLY THROUGHOUT THIS RULE:
(1) "ANIMAL" MEANS ALL MAMMALS, BIRDS, REPTILES, AMPHIBIANS, FISH, CRUSTACEANS, AND MOLLUSKS.
(2) "AQUATIC LIFE" MEANS THOSE PLANTS AND MACROINVERTEBRATES THAT ARE DEPENDENT UPON AN AQUATIC ENVIRONMENT.
(3) "CONTAIN" MEANS TO TAKE SUCH IMMEDIATE ACTION AS NECESSARY TO DAM, BLOCK, RESTRAIN, OR OTHERWISE ACT TO MOST EFFECTIVELY PREVENT A SPILL FROM ENTERING WATERS OF THE STATE OR MINIMIZE DAMAGE TO THE WATERS OF THE STATE FROM A SPILL.
(4) "DAMAGE" MEANS THE ACTUAL OR IMMINENT ALTERATION OF THE WATERS OF THE STATE SO AS TO RENDER THE WATERS HARMFUL, DETRIMENTAL, OR INJURIOUS TO:
(A) PUBLIC HEALTH, SAFETY, OR WELFARE;
(B) DOMESTIC, COMMERCIAL, INDUSTRIAL, AGRICULTURAL, OR RECREATIONAL USES; OR
(C) ANIMALS OR AQUATIC LIFE.
(5) "DOWNSTREAM WATER USER" MEANS:
(A) A COMMUNITY PUBLIC WATER SUPPLY, AS IDENTIFIED BY THE DEPARTMENT OF NATURAL RESOURCES UNDER IC 14-25-7-13(D);
(B) A SIGNIFICANT WATER WITHDRAWAL FACILITY AS REGISTERED WITH THE DEPARTMENT OF NATURAL RESOURCES UNDER IC 14-25-7-15;
(C) USERS OF RECREATIONAL WATERS; OR
(D) ANY OTHER USER MADE KNOWN TO THE PERSON WHO HAS A SPILL.
(6) "EXTREMELY HAZARDOUS SUBSTANCE" MEANS A SUBSTANCE IDENTIFIED PURSUANT TO 42 U.S.C. 11002 AND 11004. (40 CFR 355 APPENDIX A.)
(7) "FACILITY" MEANS ALL LAND, BUILDINGS, EQUIPMENT, STRUCTURES, AND OTHER STATIONARY ITEMS THAT ARE LOCATED ON A SINGLE SITE OR ON CONTIGUOUS SITES AND THAT ARE OWNED OR OPERATED BY THE SAME PERSON OR BY ANY PERSON WHO CONTROLS, IS CONTROLLED BY, OR IS UNDER COMMON CONTROL WITH, SUCH PERSON.
(8) "FACILITY BOUNDARY" MEANS THE BOUNDARY OF A FACILITY OR AN EASEMENT OR RIGHT-OF-WAY.
(9) "HAZARDOUS SUBSTANCE" HAS THE MEANING SET FORTH IN 42 U.S.C. 9601(14).
(10) "MODE OF TRANSPORTATION" INCLUDES, BUT IS NOT LIMITED TO, CARRIAGE BY:
(A) RAIL AND MOTOR VEHICLES;
(B) AIRCRAFT;
(C) WATERCRAFT;
(D) PIPELINES; OR
(E) OTHER MEANS OF TRANSPORTATION;
IN COMMERCE. THIS DEFINITION EXCLUDES CARRIAGE WITHIN A FACILITY BY TRANSPORTATION EQUIPMENT OWNED, OPERATED, OR CONTROLLED BY THAT FACILITY.
(11) "OBJECTIONABLE SUBSTANCES" MEANS SUBSTANCES THAT ARE:
(A) OF A QUANTITY AND A TYPE; AND
(B) PRESENT FOR A DURATION AND IN A LOCATION;
SO AS TO DAMAGE WATERS OF THE STATE. THIS DEFINITION EXCLUDES HAZARDOUS SUBSTANCES, EXTREMELY HAZARDOUS SUBSTANCES, PETROLEUM, AND MIXTURES THEREOF.
(12) "ON-SCENE COORDINATOR" MEANS A STATE OR FEDERAL OFFICIAL DESIGNATED BY THE DEPARTMENT, THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, OR THE UNITED STATES COAST GUARD TO DIRECT AND COORDINATE SPECIAL SPILL RESPONSE ACTIVITIES.
(13) "RECREATIONAL WATERS" MEANS ANY WATER USED FOR:
(A) BOATING, SWIMMING, FISHING, HUNTING, TRAPPING, OR WILDLIFE VIEWING; OR
(B) PUBLIC ACCESS AREAS THAT ARE OWNED BY THE DEPARTMENT OF NATURAL RESOURCES OR THE FEDERAL GOVERNMENT; AS LISTED BY THE DEPARTMENT.
(14) "REPORTABLE QUANTITY" MEANS THE AMOUNT OF A HAZARDOUS SUBSTANCE OR EXTREMELY HAZARDOUS SUBSTANCE THAT IS REQUIRED TO BE REPORTED UNDER FEDERAL LAW UNDER 42 U.S.C. 9602(A) AND (B) AND 42 U.S.C. 9603(A). (40 CFR 302.4 OR 40 CFR 355 APPENDIX A.) (15) "SPILL" MEANS ANY UNEXPECTED, UNINTENDED, ABNORMAL, OR UNAPPROVED DUMPING, LEAKAGE, DRAINAGE, SEEPAGE, DISCHARGE OR OTHER LOSS OF PETROLEUM, HAZARDOUS SUBSTANCES, EXTREMELY HAZARDOUS SUBSTANCES, OR OBJECTIONABLE SUBSTANCES. THE TERM DOES NOT INCLUDE RELEASES TO IMPERMEABLE SURFACES WHEN THE SUBSTANCE DOES NOT MIGRATE OFF THE SURFACE OR PENETRATE THE SURFACE AND ENTER THE SOIL.
(16) "SPILL RESPONSE", FOR PURPOSES OF THIS RULE, MEANS THE FOLLOWING:
(A) THE SPILL IS CONTAINED; AND
(B) FREE MATERIAL IS REMOVED OR NEUTRALIZED.
(17) "SPILL REPORT" MEANS AN ORAL REPORT THAT INCLUDES THE FOLLOWING INFORMATION ABOUT A SPILL, TO THE EXTENT THAT THE INFORMATION IS KNOWN AT THE TIME OF THE REPORT:
(A) THE NAME, ADDRESS, AND TELEPHONE NUMBER OF THE PERSON MAKING THE SPILL REPORT.
(B) THE NAME, ADDRESS, AND TELEPHONE NUMBER OF A CONTACT PERSON IF DIFFERENT FROM CLAUSE (A).
(C) THE LOCATION OF THE SPILL.
(D) THE TIME OF THE SPILL.
(E) THE IDENTIFICATION OF THE SUBSTANCE SPILLED.
(F) THE APPROXIMATE QUANTITY OF THE SUBSTANCE THAT HAS BEEN OR MAY FURTHER BE SPILLED.
(G) THE DURATION OF THE SPILL.
(H) THE SOURCE OF THE SPILL.
(I) NAME AND LOCATION OF THE WATERS DAMAGED.
(J) THE IDENTITY OF ANY RESPONSE ORGANIZATION RESPONDING TO THE SPILL.
(K) WHAT MEASURES HAVE BEEN OR WILL BE UNDERTAKEN TO PERFORM A SPILL RESPONSE.
(L) ANY OTHER INFORMATION THAT MAY BE SIGNIFICANT TO THE RESPONSE ACTION.
(18) "WATERS", AS DEFINED IN IC 13-11-2-265, MEANS THE ACCUMULATIONS OF WATER, SURFACE AND UNDERGROUND, NATURAL AND ARTIFICIAL, PUBLIC AND PRIVATE, OR PARTS THEREOF, THAT ARE WHOLLY OR PARTIALLY WITHIN, FLOW THROUGH, OR BORDER UPON THIS STATE. THE TERM DOES NOT INCLUDE ANY PRIVATE POND OR ANY OFF-STREAM POND, RESERVOIR, OR FACILITY BUILT FOR REDUCTION OR CONTROL OF POLLUTION OR COOLING OF WATER PRIOR TO DISCHARGE UNLESS THE DISCHARGE FROM THE POND, RESERVOIR, OR FACILITY CAUSES OR THREATENS TO CAUSE WATER POLLUTION. (WATER POLLUTION CONTROL BOARD; 327 IAC 2-6.1-4; FILED FEB 25, 1997, 1:00 P.M.: 20 IR 1731; ERRATA FILED MAR 7, 1997, 2:25 P.M.: 20 IR 1738; READOPTED FILED JAN 10, 2001, 3:23 P.M.: 24 IR 1518; READOPTED FILED NOV 21, 2007, 1:16 P.M.: 20071219-IR-327070553BFA)

327 IAC 2-6.1-5 REPORTABLE SPILLS; FACILITY
AUTHORITY: IC 13-14-8-7
AFFECTED: IC 13-11-2; IC 13-18-1; IC 13-18-3; IC 13-18-8; IC 13-18-17
SEC. 5. THE FOLLOWING SPILLS FROM A FACILITY MUST BE REPORTED:
(1) SPILLS THAT DAMAGE THE WATERS OF THE STATE SO AS TO CAUSE DEATH OR ACUTE INJURY OR ILLNESS TO HUMANS OR ANIMALS.
(2) SPILLS FROM A FACILITY THAT HAS BEEN NOTIFIED IN WRITING BY A WATER UTILITY THAT IT IS LOCATED IN A DELINEATED PUBLIC WATER SUPPLY WELLHEAD PROTECTION AREA AS APPROVED BY THE DEPARTMENT UNDER 327 IAC 8-4.1 THAT ARE:
(A) SPILLS OF HAZARDOUS SUBSTANCES OR EXTREMELY HAZARDOUS SUBSTANCES WHEN THE AMOUNT SPILLED EXCEEDS ONE HUNDRED (100) POUNDS OR THE REPORTABLE QUANTITY, WHICHEVER IS LESS;
(B) SPILLS OF PETROLEUM WHEN THE AMOUNT SPILLED EXCEEDS FIFTY-FIVE (55) GALLONS; OR
(C) SPILLS OF OBJECTIONABLE SUBSTANCES AS DEFINED IN SECTION 4(11) OF THIS RULE.
(3) SPILLS THAT DAMAGE WATERS OF THE STATE AND THAT:
(A) ARE LOCATED WITHIN FIFTY (50) FEET OF A KNOWN PRIVATE DRINKING WATER WELL LOCATED BEYOND THE FACILITY PROPERTY BOUNDARY; OR
(B) ARE LOCATED WITHIN ONE HUNDRED (100) YARDS OF:
(I) ANY HIGH QUALITY WATER DESIGNATED AS AN OUTSTANDING STATE RESOURCE PURSUANT TO 327 IAC 2-1-2(3), EXCLUDING LAKE MICHIGAN;
(II) ANY WATER DESIGNATED AS EXCEPTIONAL USE PURSUANT TO 327 IAC 2-13(A)(6) [SIC., 327 IAC 2-1-3(A)(6)] AND 327 IAC 2-1-11(B);
(III) ANY WATER DESIGNATED AS CAPABLE OF SUPPORTING A SALMONID FISHERY PURSUANT TO 327 IAC 2-1-6(C)(1), EXCEPT LAKE MICHIGAN;
OR
(IV) ANY WATER THAT IS A FISH HATCHERY, FISH AND WILDLIFE AREA, NATURE PRESERVE, OR RECREATIONAL WATER OWNED BY THE DEPARTMENT OF NATURAL RESOURCES OR THE FEDERAL GOVERNMENT.
(4) FOR ANY SPILL WHICH DOES NOT MEET THE CRITERIA IN SUBDIVISIONS (1) THROUGH (3), THE FOLLOWING MUST BE REPORTED:
(A) SPILLS TO SURFACE WATERS:
(I) SPILLS OF HAZARDOUS SUBSTANCES OR EXTREMELY HAZARDOUS SUBSTANCES WHEN THE AMOUNT SPILLED EXCEEDS ONE HUNDRED (100) POUNDS OR THE REPORTABLE QUANTITY, WHICHEVER IS LESS;
(II) SPILLS OF PETROLEUM OF SUCH QUANTITY AS TO CAUSE A SHEEN UPON THE WATERS;
OR
(III) SPILLS OF OBJECTIONABLE SUBSTANCES AS DEFINED IN SECTION 4(11) OF THIS RULE.
(B) SPILLS TO SOIL BEYOND THE FACILITY BOUNDARY:
(I) SPILLS OF HAZARDOUS SUBSTANCES OR EXTREMELY HAZARDOUS SUBSTANCES WHEN THE AMOUNT SPILLED EXCEEDS ONE HUNDRED (100) POUNDS OR THE REPORTABLE QUANTITY, WHICHEVER IS LESS;
(II) SPILLS OF PETROLEUM WHEN THE AMOUNT SPILLED EXCEEDS FIFTY-FIVE (55) GALLONS;
OR
(III) SPILLS OF OBJECTIONABLE SUBSTANCES AS DEFINED IN SECTION 4(11) OF THIS RULE.
(C) SPILLS TO SOIL WITHIN THE FACILITY BOUNDARY:
(I) SPILLS OF HAZARDOUS SUBSTANCES OR EXTREMELY HAZARDOUS SUBSTANCES WHEN THE AMOUNT SPILLED EXCEEDS THE REPORTABLE QUANTITY;
(II) SPILLS OF PETROLEUM WHEN THE SPILLED AMOUNT EXCEEDS ONE THOUSAND (1,000) GALLONS;
OR
(III) SPILLS OF OBJECTIONABLE SUBSTANCES AS DEFINED IN SECTION 4(11) OF THIS RULE.
(5) ANY SPILL FOR WHICH A SPILL RESPONSE HAS NOT BEEN DONE. (WATER POLLUTION CONTROL BOARD; 327 IAC 2-6.1-5; FILED FEB 25, 1997, 1:00 P.M.: 20 IR 1732; ERRATA FILED MAR 7, 1997, 2:25 P.M.: 20 IR 1738; READOPTED FILED JAN 10, 2001, 3:23 P.M.: 24 IR 1518; READOPTED FILED NOV 21, 2007, 1:16 P.M.: 20071219-IR-327070553BFA)

327 IAC 2-6.1-6 REPORTABLE SPILLS; TRANSPORTATION

AUTHORITY: IC 13-14-8-7
AFFECTED: IC 13-11-2; IC 13-18-1; IC 13-18-3; IC 13-18-8; IC 13-18-17
SEC. 6. THE FOLLOWING SPILLS FROM A MODE OF TRANSPORTATION MUST BE REPORTED:
(1) SPILLS THAT DAMAGE THE WATERS OF THE STATE SO AS TO CAUSE DEATH OR ACUTE INJURY OR ILLNESS TO HUMANS OR ANIMALS.
(2) SPILLS THAT DAMAGE SURFACE WATERS.
(3) SPILLS TO SOIL:
(A) SPILLS OF HAZARDOUS SUBSTANCES OR EXTREMELY HAZARDOUS SUBSTANCES WHEN THE AMOUNT SPILLED EXCEEDS ONE HUNDRED (100) POUNDS OR THE REPORTABLE QUANTITY, WHICHEVER IS LESS;
(B) SPILLS OF PETROLEUM WHEN THE AMOUNT SPILLED EXCEEDS FIFTY-FIVE (55) GALLONS;
OR
(C) SPILLS OF OBJECTIONABLE SUBSTANCES AS DEFINED IN SECTION 4(11) OF THIS RULE.
(4) ANY SPILL FOR WHICH A SPILL RESPONSE HAS NOT BEEN DONE. (WATER POLLUTION CONTROL BOARD; 327 IAC 2-6.1-6; FILED FEB 25, 1997, 1:00 P.M.: 20 IR 1733; READOPTED FILED JAN 10, 2001, 3:23 P.M.: 24 IR 1518; READOPTED FILED NOV 21, 2007, 1:16 P.M.: 20071219-IR-327070553BFA)

327 IAC 2-6.1-7 REPORTABLE SPILLS; RESPONSIBILITIES

AUTHORITY: IC 13-14-8-7
AFFECTED: IC 13-11-2; IC 13-18-1; IC 13-18-3; IC 13-18-8; IC 13-18-17
SEC. 7. ANY PERSON WHO OPERATES, CONTROLS, OR MAINTAINS ANY MODE OF TRANSPORTATION OR FACILITY FROM WHICH A SPILL OCCURS SHALL, UPON DISCOVERY OF A REPORTABLE SPILL TO THE SOIL OR SURFACE WATERS OF THE STATE, DO THE FOLLOWING:
(1) CONTAIN THE SPILL, IF POSSIBLE, TO PREVENT ADDITIONAL SPILLED MATERIAL FROM ENTERING THE WATERS OF THE STATE.
(2) UNDERTAKE OR CAUSE OTHERS TO UNDERTAKE ACTIVITIES NEEDED TO ACCOMPLISH A SPILL RESPONSE.
(3) AS SOON AS POSSIBLE, BUT WITHIN TWO (2) HOURS OF DISCOVERY, COMMUNICATE A SPILL REPORT TO THE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, OFFICE OF LAND QUALITY, EMERGENCY RESPONSE SECTION: AREA CODE 1-888-233-7745 FOR IN-STATE CALLS (TOLL FREE), (317) 233-7745 FOR OUT-OF-STATE CALLS. IF NEW OR UPDATED SPILL REPORT INFORMATION BECOMES KNOWN THAT INDICATES A SIGNIFICANT INCREASE IN THE LIKELIHOOD OF DAMAGE TO THE WATERS OF THE STATE, THE RESPONSIBLE PARTY SHALL NOTIFY THE DEPARTMENT AS SOON AS POSSIBLE BUT WITHIN TWO (2) HOURS OF THE TIME THE NEW OR UPDATED INFORMATION BECOMES KNOWN.
(4) SUBMIT TO THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, OFFICE OF LAND QUALITY, EMERGENCY RESPONSE SECTION (MC 66-30), 2525 N. SHADELAND AVE., SUITE 100, INDIANAPOLIS, IN 46219-1787, A WRITTEN COPY OF THE SPILL REPORT IF REQUESTED IN WRITING BY THE DEPARTMENT.
(5) EXCEPT FROM MODES OF TRANSPORTATION OTHER THAN PIPELINES, EXERCISE DUE DILIGENCE AND DOCUMENT ATTEMPTS TO NOTIFY THE FOLLOWING:
(A) FOR SPILLS TO SURFACE WATER THAT CAUSE DAMAGE, THE NEAREST AFFECTED DOWNSTREAM WATER USER LOCATED WITHIN TEN (10) MILES OF THE SPILL AND IN THE STATE OF INDIANA;
AND
(B) FOR SPILLS TO SOIL OUTSIDE THE FACILITY BOUNDARY, THE AFFECTED PROPERTY OWNER OR OWNERS, OPERATOR OR OPERATORS, OR OCCUPANT OR OCCUPANTS. (WATER POLLUTION CONTROL BOARD; 327 IAC 2-6.1-7; FILED FEB 25, 1997, 1:00 P.M.: 20 IR 1733; READOPTED FILED JAN 10, 2001, 3:23 P.M.: 24 IR 1518; ERRATA FILED FEB 6, 2006, 11:15 A.M.: 29 IR 1936; ERRATA FILED OCT 20, 2006, 10:08 A.M.: 20061101-IR-327060497ACA; READOPTED FILED NOV 21, 2007, 1:16 P.M.: 20071219-IR-327070553BFA; ERRATA FILED MAY 27, 2008, 2:06 P.M.: 20080625-IR-327080419ACA)

327 IAC 2-6.1-8 EMERGENCY SPILL RESPONSE ACTIONS

AUTHORITY: IC 13-14-8-7
AFFECTED: IC 13-11-2; IC 13-18-1; IC 13-18-3; IC 13-18-8; IC 13-18-17
SEC. 8. NOTWITHSTANDING ANY OTHER SECTION OF THIS RULE, EMERGENCY SPILL RESPONSE ACTIONS TAKE PRECEDENCE OVER REPORTING REQUIREMENTS, AND WHEN EMERGENCY SPILL RESPONSE ACTIVITIES RENDER SPILL REPORTING INCONSISTENT WITH EFFECTIVE RESPONSE ACTIVITIES, COMMUNICATION OF THE SPILL REPORT TO THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT MAY BE DELAYED. IN SITUATIONS WHERE THE SPILL REPORT IS DELAYED, THE BURDEN OF PROVING THE NEED FOR THE DELAY SHALL BE UPON THE RESPONSIBLE PERSON. (WATER POLLUTION CONTROL BOARD; 327 IAC 2-6.1-8; FILED FEB 25, 1997, 1:00 P.M.: 20 IR 1734; READOPTED FILED JAN 10, 2001, 3:23 P.M.: 24 IR 1518; READOPTED FILED NOV 21, 2007, 1:16 P.M.: 20071219-IR-327070553BFA)

327 IAC 2-6.1-9 COMPLIANCE CONFIRMATION

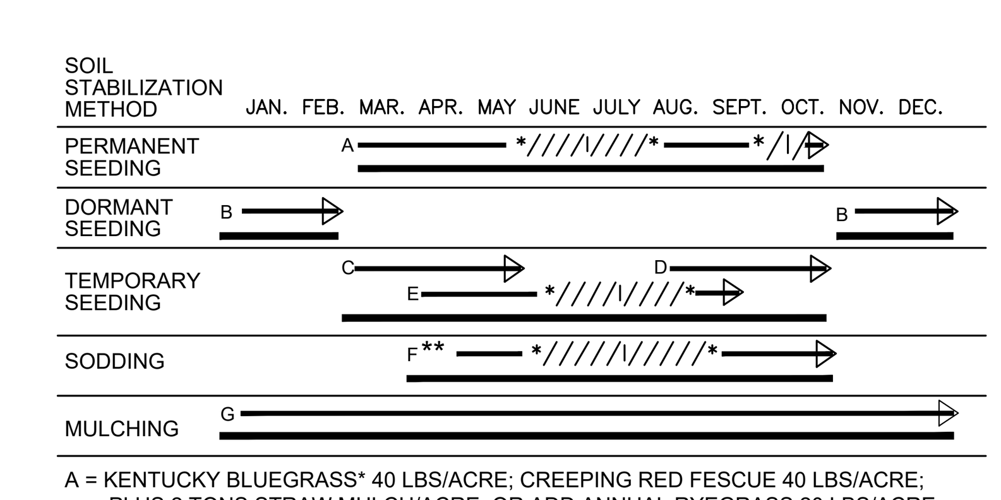
AUTHORITY: IC 13-14-8-7
AFFECTED: IC 13-11-2; IC 13-18-1; IC 13-18-3; IC 13-18-8; IC 13-18-17
SEC. 9. WHEN SPILL REPORTING AND RESPONSE, AS PROVIDED FOR IN THIS RULE, HAS OCCURRED, THE DEPARTMENT SHALL, UPON REQUEST, ISSUE A LETTER CONFIRMING COMPLIANCE WITH THIS RULE AND STATING THAT NO FURTHER ACTION IS REQUIRED UNDER THIS RULE. (WATER POLLUTION CONTROL BOARD; 327 IAC 2-6.1-9; FILED FEB 25, 1997, 1:00 P.M.: 20 IR 1734; READOPTED FILED JAN 10, 2001, 3:23 P.M.: 24 IR 1518; READOPTED FILED NOV 21, 2007, 1:16 P.M.: 20071219-IR-327070553BFA)

SOILS TYPE LEGEND

Br BROOKSTON SILTY CLAY LOAM
THE MAIN SOIL FEATURES THAT ADVERSELY AFFECT ENGINEERING USES OF THIS SOIL ARE A SEASONAL HIGH WATER TABLE, HIGH POTENTIAL FROST ACTION, MODERATE SHRINK-SWELL POTENTIAL, AND MODERATE PERMEABILITY. THIS SOIL HAS SEVERE LIMITATIONS FOR BUILDING SITES. THE SITES NEED TO BE ARTIFICIALLY DRAINED AND PROTECTED FROM FLOODING. DWELLINGS AND SMALL BUILDINGS WITH BASEMENTS SHOULD NOT BE CONSTRUCTED ON THIS SOIL. USING PROPERLY DESIGNED FOUNDATIONS AND FOOTINGS HELPS TO PREVENT STRUCTURAL DAMAGE FROM FROST ACTION AND SHRINKING AND SWELLING OF THE SOIL. THIS SOIL HAS SEVERE LIMITATIONS FOR LOCAL ROADS AND STREETS BECAUSE OF SEASONAL HIGH WATER TABLE AND HIGH POTENTIAL FROST ACTION. INSTALLATION OF DRAINAGE DITCHES ALONG ROADS HELPS TO LOWER THE WATER TABLE AND PREVENT DAMAGE FROM FROST ACTION. THE BASE MATERIAL FOR ROADS AND STREETS SHOULD BE REPLACED OR STRENGTHENED WITH SUITABLE MATERIAL.

CrA CROSBY SILT LOAM
0 TO 2 PERCENT SLOPES. THE MAIN SOIL FEATURES THAT ADVERSELY AFFECT THE ENGINEERING USES OF THIS SOIL ARE A SEASONAL HIGH WATER TABLE, MODERATE SHRINK-SWELL POTENTIAL, HIGH POTENTIAL FROST ACTION, AND SLOW PERMEABILITY. THIS SOIL HAS SOME SEVERE LIMITATIONS FOR BUILDING SITES. THE SITES NEED TO BE ARTIFICIALLY DRAINED TO PREVENT WETNESS FROM BECOMING A PROBLEM. DWELLINGS AND SMALL BUILDINGS WITH BASEMENTS SHOULD NOT BE CONSTRUCTED ON THIS SOIL. USING PROPERLY DRAINED FOUNDATIONS AND FOOTINGS HELPS TO PREVENT STRUCTURAL DAMAGE FROM LOW STRENGTH AND SHRINKING AND SWELLING OF THE SOIL. THIS SOIL HAS SEVER LIMITATIONS FOR LOCAL ROADS AND STREETS. THE BASE MATERIAL FOR ROADS NEEDS TO BE STRENGTHENED OR REPLACED WITH SUITABLE MATERIAL.

CrB CRIDER SILT LOAM
2 TO 6 PERCENT SLOPES. THIS GENTLY SLOPING, DEEP, WELL DRAINED SOIL IS ON NARROW AND BROAD CONVEX RIDGETOPS ON UPLANDS. THE SURFACE LAYER IS TYPICALLY DARK BROWN SILT LOAM ABOUT 10 INCHES THICK. THE SUBSOIL EXTENDS TO A DEPTH OF 80 INCHES OR MORE.



A = KENTUCKY BLUEGRASS* 40 LBS/ACRE; CREEPING RED FESCUE 40 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 20 LBS/ACRE.
B = KENTUCKY BLUEGRASS* 60 LBS/ACRE; CREEPING RED FESCUE 60 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 30 LBS/ACRE.
C = SPRING OATS 3 BUSHEL/ACRE.
D = WHEAT OR RYE 2 BUSHEL/ACRE.
E = ANNUAL RYEGRASS 40 LBS/ACRE.
F = SOD (BLEND 3 IMPROVED VARIETIES).
G = STRAW MULCH 2 TONS/ACRE.
/I/ IRRIGATION NEEDED DURING JUNE, JULY, AND/OR SEPTEMBER.
** IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD.
*KENTUCKY BLUEGRASS BLEND OF 3 IMPROVED VARIETIES.

SEASONAL SOIL PROTECTION CHART

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 fax
ALLAN H. WEIHE, P.E., L.S. - FOUNDER
WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.™

PROJECT NO.: W22.0478
DWG NAME: C103 - SWPPP SPECS
DESIGNED BY: SMB/AQ
DRAWN BY: SMB/AQ
CHECKED BY: EAC
DATE: 03/10/2023

DATE	BY	REVISIONS AND ISSUES

xx/xx/20xx

APPROVAL PENDING
NOT FOR CONSTRUCTION

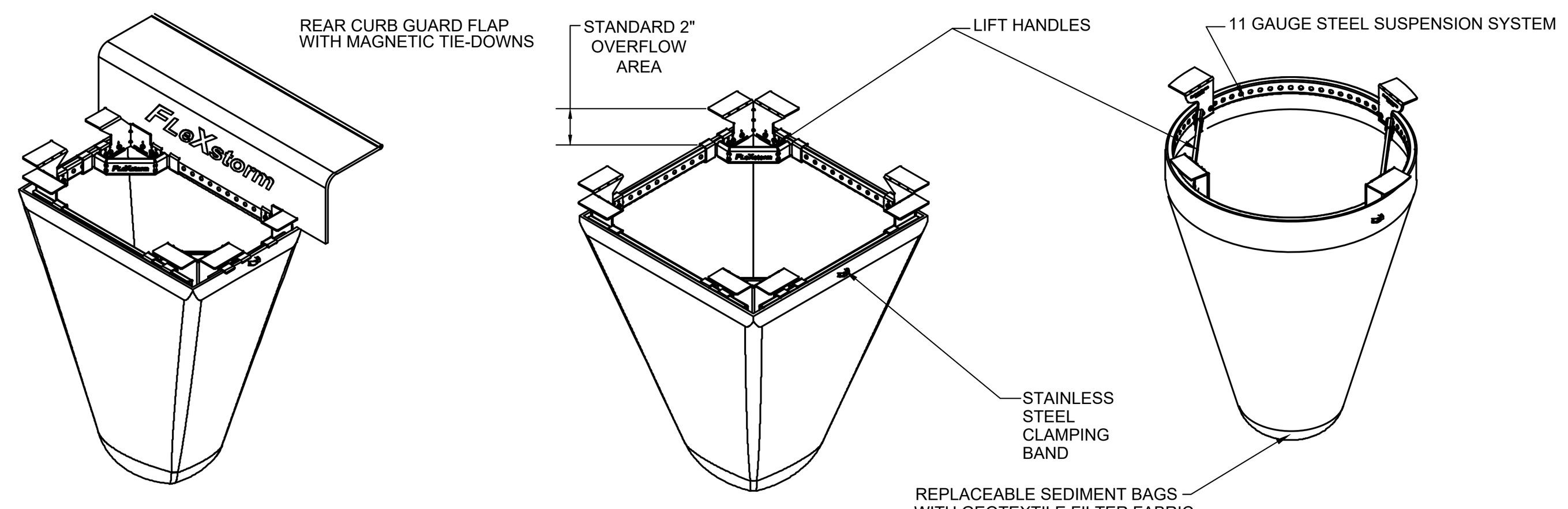
PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

STORMWATER POLLUTION PREVENTION PLAN SPECS
Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO.
C103

PROJECT NO.
W22.0478

LOCATION: H:\2022\W220478\Engineering\design\conset\Block B\C103 - SWPPP SPECS.dwg
LAYOUT: C103
DATE/TIME: April 10, 2023 - 4:57pm
PLOTTED BY: steuberm



TYPICAL CURB BOX INLET FILTER

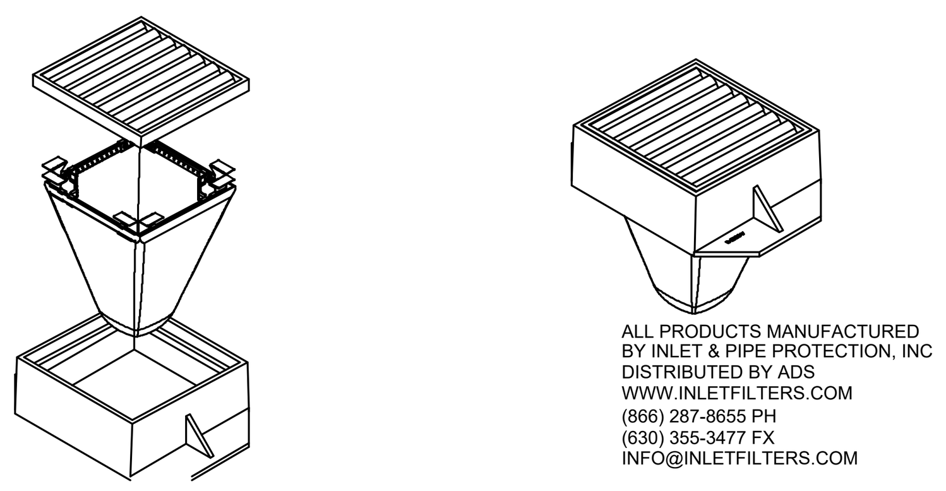
TYPICAL FLAT/RECTANGULAR/ROLLED CURB INLET FILTER

TYPICAL ROUND INLET FILTER

INSTALLATION
1) REMOVE INLET GRATE.
2) DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE. ADJUST AS REQUIRED.
3) REPLACE GRATE.

MAINTENANCE
1) REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF INLET AFTER EACH STORM EVENT.
2) AFTER EACH STORM EVENT AND AT WEEKLY INTERVALS, INSPECT THE LEVEL OF SEDIMENT PRESENT IN THE FILTER BAG.
3) IF THE CONTAINMENT FILTER BAG IS MORE THAN 1/3 FULL OF SEDIMENT, THE UNIT MUST BE EMPTIED.
4) TO EMPTY UNIT, REMOVE THE GRATE AND LIFT THE UNIT OUT OF THE INLET USING THE LIFTING STRAPS.
5) DISPOSE OF SEDIMENT IN AN APPROVED LOCATION. PLACE UNIT BACK INTO INLET.
6) IF USING OPTIONAL OIL ABSORBENTS; REPLACE ABSORBENT WHEN NEAR SATURATION.
7) REPLACE OR REPAIR TORN OR DAMAGED FILTER BAGS AS REQUIRED.

FLEXSTORM Inlet Filter Specifications		
WOVEN Geotextile Sediment Bag Specs (2 ft^3 vol)		
Material Property	Test Method	Value (ave)
Grab Tensile	ASTM D 4632	255 x 275
Puncture Strength	ASTM D 4833	135 lbs
Trapezoidal Tear	ASTM D 4533	75 lbs
UV Resistance	ASTM D 4355	90%
App Open Size (AOS)	ASTM D 4751	20 sieve
Permittivity	ASTM D 4491	1.5 / sec
Water Flow Rate	ASTM D 4491	200 gpm/sqft
Sediment Removal Efficiency (8% mix)	ASTM D 7351	82%



ALL PRODUCTS MANUFACTURED BY INLET & PIPE PROTECTION, INC
DISTRIBUTED BY ADS
WWW.INLETFILTERS.COM
(866) 287-8655 PH
(630) 355-3477 FX
INFO@INLETFILTERS.COM

TABLE 1. TEMPORARY SEEDING SPECIFICATIONS

SEED SPECIES¹	RATE PER ACRE	PLANTING DEPTH	OPTIMUM DATES²
WHEAT OR RYE	150 LBS.	1 TO 1½ INCHES	SEPT. 15 - OCT. 30
SPRING OATS	100 LBS.	1 INCH	MARCH 1 - APRIL 15
ANNUAL RYEGRASS	40 LBS.	¼ INCH	MARCH 1 - MAY 1 AUG. 1 - SEPT. 1
GERMAN MILLET	40 LBS.	1 TO 2 INCHES	MAY 1 - JUNE 1
SUDANGRASS	35 LBS.	1 TO 2 INCHES	MAY 1 - JULY 30
BUCKWHEAT	60 LBS.	1 TO 2 INCHES	APRIL 15 - JUNE 1
CORN (BROADCAST)	300 LBS.	1 TO 2 INCHES	MAY 11 - AUG. 10
SORGHUM	35 LBS.	1 TO 2 INCHES	MAY 1 - JULY 15

1. PERENNIAL SPECIES MAY BE USED AS A TEMPORARY COVER, ESPECIALLY IF THE AREA TO BE SEEDED WILL REMAIN IDLE FOR MORE THAN ONE YEAR.
2. SEEDING DONE OUTSIDE THE OPTIMUM SEEDING DATES INCREASES THE CHANCES OF SEEDING FAILURE. DATES MAY BE EXTENDED OR SHORTENED BASED ON THE LOCATION OF THE PROJECT SITE WITHIN THE STATE.

NOTES
1. MULCH ALONE IS AN ACCEPTABLE TEMPORARY COVER AND MAY BE USED IN LIEU OF TEMPORARY SEEDING, PROVIDED THAT IT IS APPROPRIATELY ANCHORED.
2. A HIGH POTENTIAL FOR FERTILIZER, SEED, AND MULCH TO WASH EXISTS ON STEEP BANKS, CUTS, AND IN CHANNELS AND AREAS OF CONCENTRATED FLOW.

SEEDBED PREPARATION
1. TEST SOIL TO DETERMINE PH AND NUTRIENT LEVELS.
2. APPLY SOIL AMENDMENTS AS RECOMMENDED BY THE SOIL TEST. IF TESTING IS NOT DONE, APPLY 400 TO 600 POUNDS PER ACRE OF 12-12-12 ANALYSIS FERTILIZER, OR EQUIVALENT.
3. WORK THE SOIL AMENDMENTS INTO THE UPPER TWO TO FOUR INCHES OF THE SOIL WITH A DISK OR RAKE OPERATED ACROSS THE SLOPE.

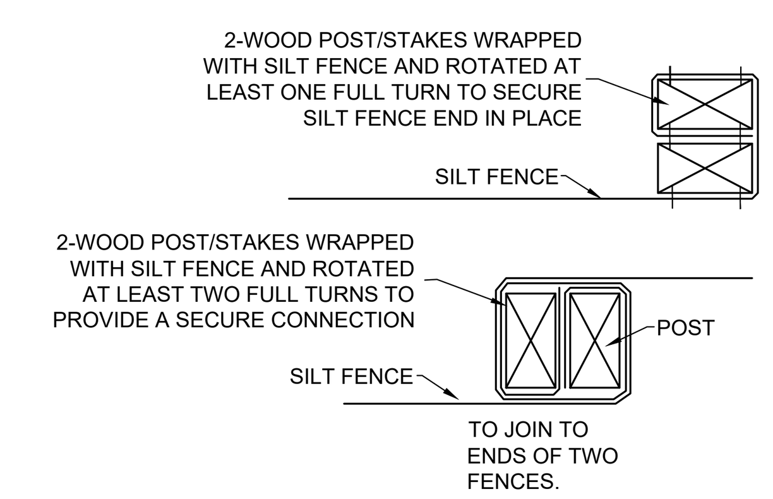
SEEDING
1. SELECT A SEED SPECIES OR AN APPROPRIATE SEED MIXTURE AND APPLICATION RATE FROM TABLE 1.
2. APPLY SEED UNIFORMLY WITH A DRILL OR CULTIPACKER SEEDER OR BY BROADCASTING. PLANT OR COVER SEED TO THE DEPTH SHOWN IN TABLE 1.

NOTES
1. IF DRILLING OR BROADCASTING THE SEED, ENSURE GOOD SEED-TO-SOIL CONTACT BY FIRMING THE SEEDBED WITH A ROLLER OR CULTIPACKER AFTER COMPLETING SEEDING OPERATIONS.
2. DAILY SEEDING WHEN THE SOIL IS MOIST IS USUALLY MOST EFFECTIVE.
3. IF SEEDING IS DONE WITH A HYDROSEEDER, FERTILIZER AND MULCH CAN BE APPLIED WITH THE SEED IN A SLURRY MIXTURE.
3. APPLY MULCH AND ANCHOR IT IN PLACE.

MAINTENANCE
1. INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
2. CHECK FOR EROSION OR MOVEMENT OF MULCH AND REPAIR IMMEDIATELY.
3. MONITOR FOR EROSION DAMAGE AND ADEQUATE COVER (80 PERCENT DENSITY); RESEED, FERTILIZE, AND APPLY 4. MULCH WHERE NECESSARY.
4. IF NITROGEN DEFICIENCY IS APPARENT, TOP-DRESS FALL SEEDED WHEAT OR RYE SEEDING WITH 50 POUNDS PER ACRE OF NITROGEN IN FEBRUARY OR MARCH.

REFERENCE IN CHAPTER 7 PAGES 31-33 IN THE INDIANA STORM WATER QUALITY MANUAL

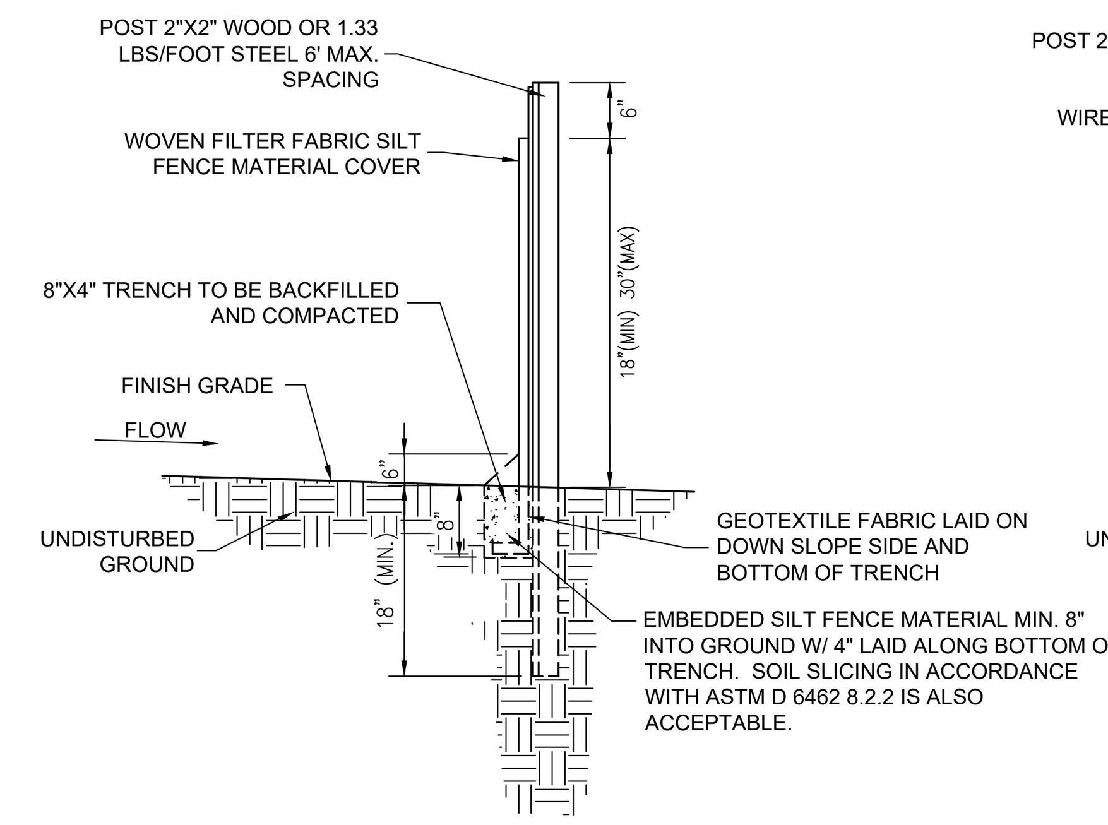
TEMPORARY SEED



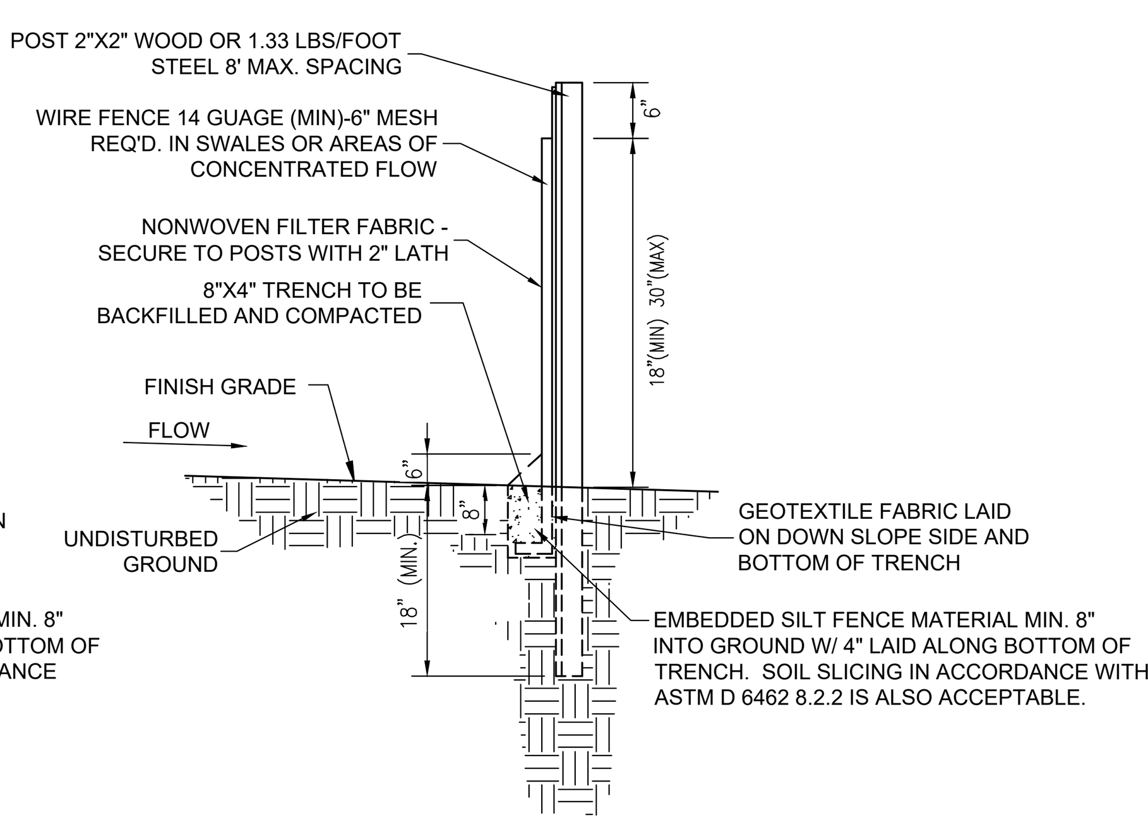
MAXIMUM LOAD SLOPE AND DISTANCE FOR WHICH A SILT FENCE IS APPLICABLE

LOAD SLOPE	MAX. DISTANCE ABOVE FENCE
LESS THAN 2%	100 FT.
2 TO 5%	75 FT.
5 TO 10%	50 FT.
10 TO 20%	25 FT.
MORE THAN 20%	15 FT.

POSTS: STEEL T OR U TYPE, OR 2"X2" HARD WOOD POST
FENCE: WOVEN WIRE, 14-1/2 GA., 6" MAX. MESH OPENING
FABRIC: IN ACCORDANCE WITH ASTM D 6461 LATEST EDITION.



WITHOUT WIRE SUPPORT



WITH WIRE SUPPORT

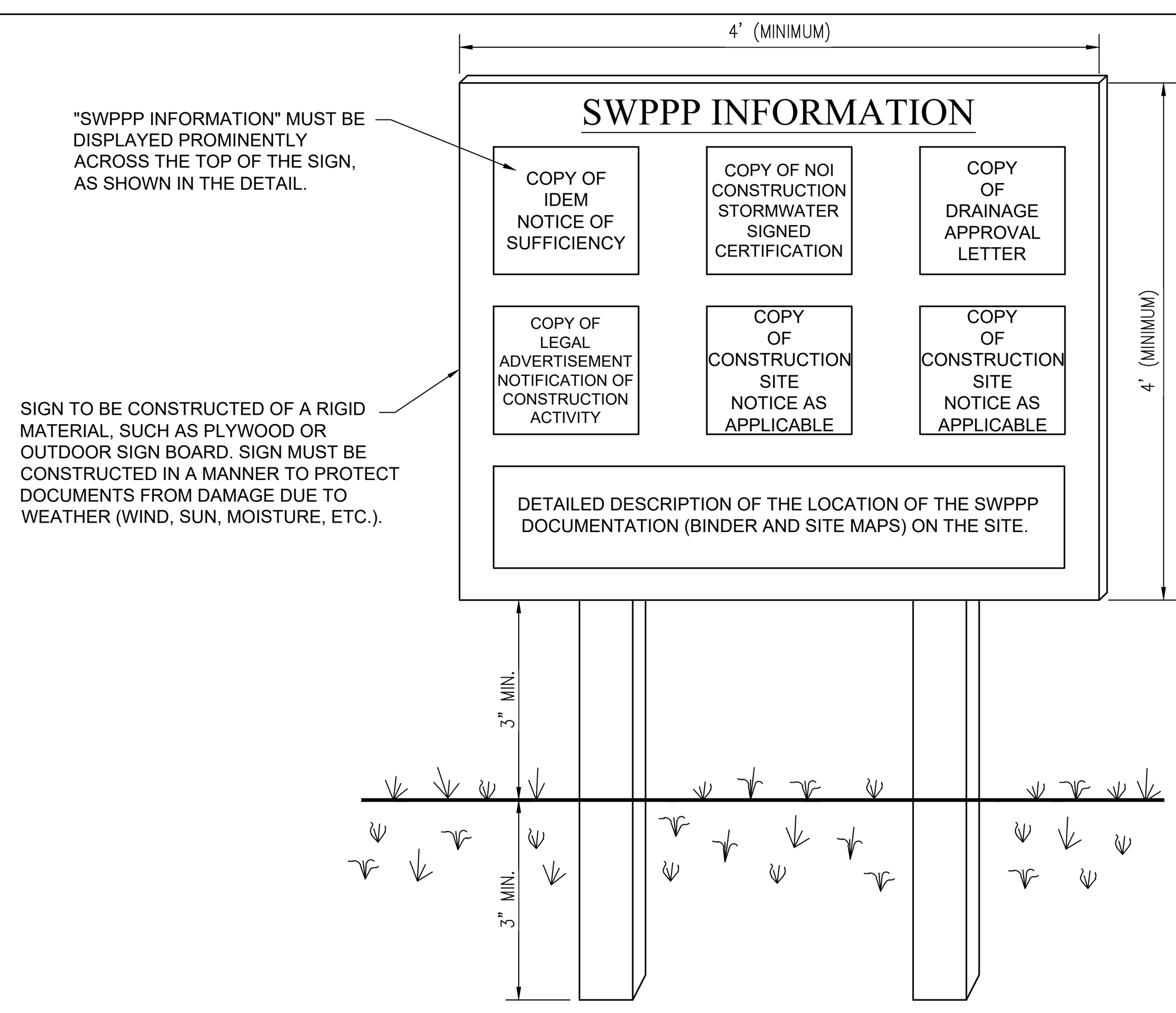
INSTALLATION
PREFABRICATED SILT FENCE
1. LAY OUT THE LOCATION OF THE FENCE SO THAT IT IS PARALLEL TO THE CONTOUR OF THE SLOPE AND AT LEAST 10 FEET BEYOND THE TOE OF THE SLOPE TO PROVIDE A SEDIMENT STORAGE AREA. TURN THE ENDS OF THE FENCE UP SLOPE SUCH THAT THE POINT OF CONTACT BETWEEN THE GROUND AND THE BOTTOM OF THE FENCE END TERMINATES AT A HIGHER ELEVATION THAN THE TOP OF THE FENCE AT ITS LOWEST POINT.
2. EXCAVATE AN EIGHT-INCH DEEP BY FOUR-INCH WIDE TRENCH ALONG THE ENTIRE LENGTH OF THE FENCE LINE. INSTALLATION BY PLOWING IS ALSO ACCEPTABLE.
3. INSTALL THE SILT FENCE WITH THE FILTER FABRIC LOCATED ON THE UP-SLOPE SIDE OF THE EXCAVATED TRENCH AND THE SUPPORT POSTS ON THE DOWN-SLOPE SIDE OF THE TRENCH.
4. DRIVE THE SUPPORT POSTS AT LEAST 18 INCHES INTO THE GROUND, TIGHTLY STRETCHING THE FABRIC BETWEEN THE POSTS AS EACH IS DRIVEN INTO THE SOIL. MINIMUM OF 12 INCHES OF THE FILTER FABRIC SHOULD EXTEND INTO THE TRENCH.
5. LAY THE LOWER FOUR INCHES OF FILTER FABRIC ON THE BOTTOM OF THE TRENCH AND EXTEND IT TOWARD THE UP-SLOPE SIDE OF THE TRENCH.
6. BACKFILL THE TRENCH WITH SOIL MATERIAL AND COMPACT IT IN PLACE.

NOTE: IF THE SILT FENCE IS BEING CONSTRUCTED ON-SITE, ATTACH THE FILTER FABRIC TO THE SUPPORT POSTS AND ATTACH WOODEN LATHE TO SECURE THE FABRIC TO THE POSTS. ALLOW FOR AT LEAST 12 INCHES OF FABRIC BELOW GROUND LEVEL. COMPLETE THE SILT FENCE INSTALLATION, FOLLOWING STEPS 1 THROUGH 6 ABOVE.

MAINTENANCE
_ INSPECT WITHIN 24 HOURS OF A RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
_ IF FENCE FABRIC TEARS, STARTS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED PORTION IMMEDIATELY. NOTE: ALL REPAIRS SHOULD MEET SPECIFICATIONS AS OUTLINED WITHIN THIS MEASURE.
_ REMOVE DEPOSITED SEDIMENT WHEN IT IS CAUSING THE FILTER FABRIC TO BULGE OR WHEN IT REACHES ONE-HALF THE HEIGHT OF THE FENCE AT ITS LOWEST POINT. WHEN CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND SEDIMENT DEPOSITS, GRADE THE SITE TO BLEND WITH THE SURROUNDING AREA, AND STABILIZE.

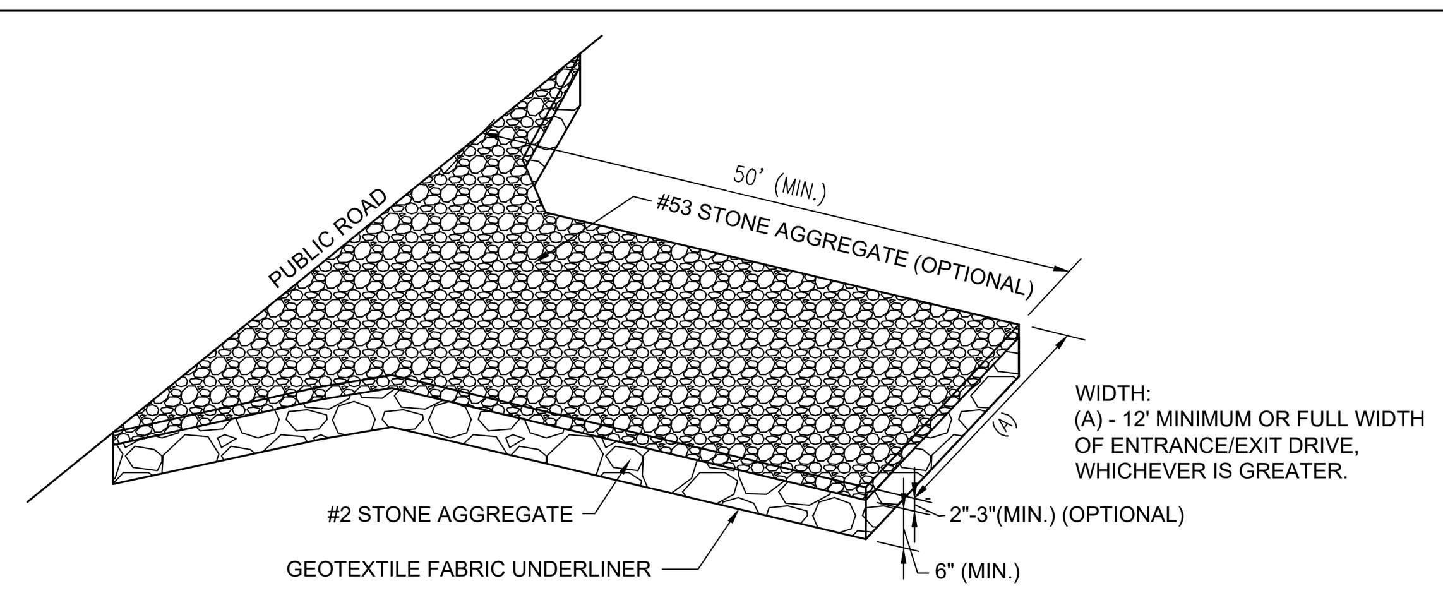
REFERENCE IN CHAPTER 7 PAGES 215-221 IN THE INDIANA STORM WATER QUALITY MANUAL

SEDIMENTATION/SILT FENCE
(NO SCALE)



NOTES:
1. THE SWPPP INFORMATION SIGN MUST BE LOCATED NEAR THE CONSTRUCTION EXIT OF THE SITE, SUCH THAT IT IS ACCESSIBLE AND VIEWABLE BY THE GENERAL PUBLIC, BUT NOT OBSTRUCTING VIEWS AS TO CAUSE A SAFETY HAZARD.
2. ALL POSTED DOCUMENTS MUST BE MAINTAINED IN A CLEARLY READABLE CONDITION AT ALL TIMES THROUGHOUT CONSTRUCTION AND UNTIL THE NOTICE-OF-TERMINATION (NOT) IS FILED FOR THE PERMIT.
3. CONTRACTOR SHALL POST OTHER STORM WATER AND/OR EROSION AND SEDIMENT CONTROL RELATED PERMITS ON THE SIGN AS REQUIRED BY THE GOVERNING AGENCY.
4. SIGN SHALL BE LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY AND EASEMENTS UNLESS APPROVED BY THE GOVERNING AGENCY.
5. CONTRACTOR IS RESPONSIBLE FOR ENSURING STABILITY OF THE SWPPP INFORMATION SIGN.
6. IN THE EVENT THAT THE GENERAL CONTRACTOR (GC) DOES NOT HAVE A JOB TRAILER ONSITE DURING CONSTRUCTION OR AT SUCH TIME THAT THE GC IS SUBSTANTIALLY COMPLETE AND IS NO LONGER ONSITE - PROVIDE A 4" PVC TUBE WITH END CAPS (SECURED TO SIGN) TO CONTAIN THE APPROVED PLANS AND PERMITS FOR INSPECTORS.

SWPPP INFORMATION SIGN
(NO SCALE)



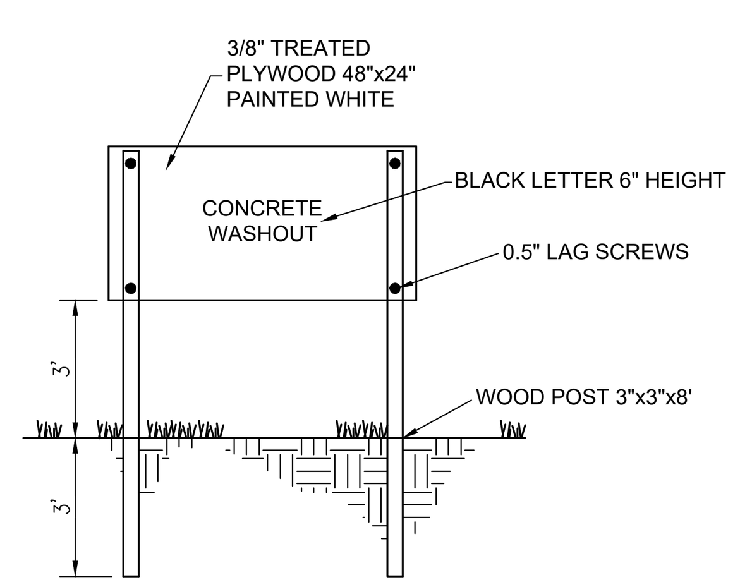
WIDTH:
(A) - 12' MINIMUM OR FULL WIDTH OF ENTRANCE/EXIT DRIVE, WHICHEVER IS GREATER.

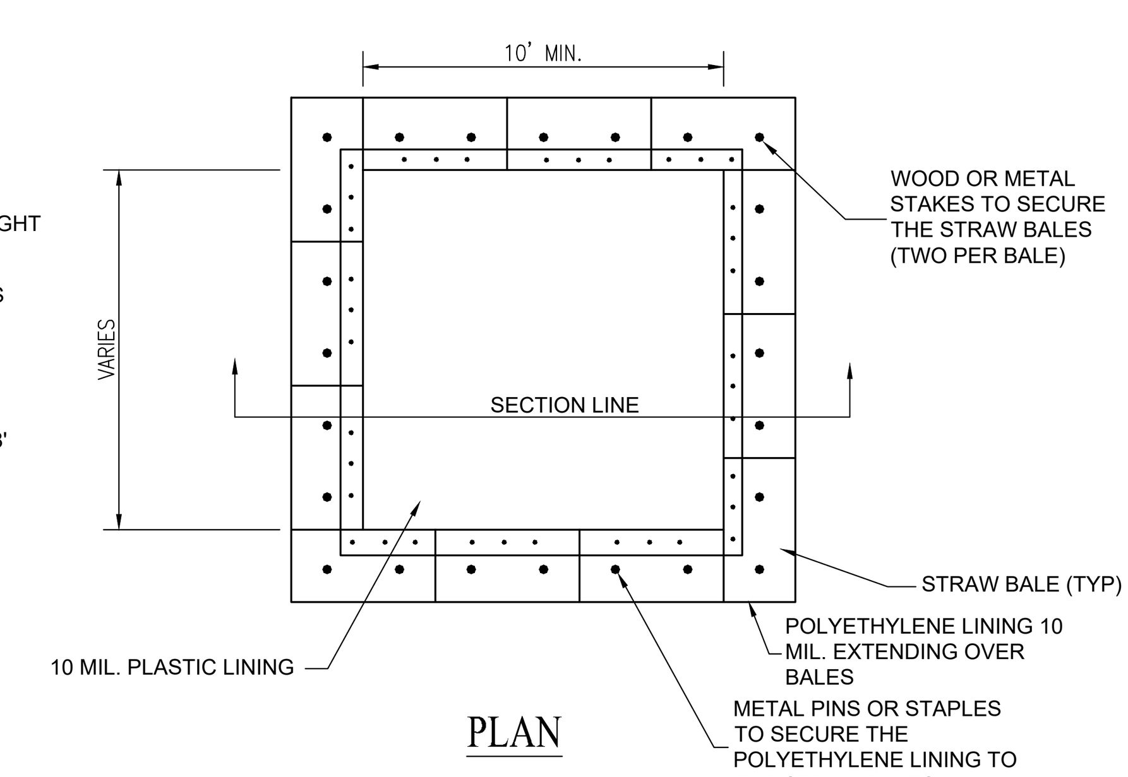
INSTALLATION
1. REMOVE ALL VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA.
2. GRADE THE FOUNDATION AND CROWN FOR POSITIVE DRAINAGE.
3. INSTALL A CULVERT PIPE UNDER THE PAD IF NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.
4. IF WET CONDITIONS ARE ANTICIPATED, PLACE GEOTEXTILE FABRIC ON THE GRADED FOUNDATION TO IMPROVE STABILITY.
5. PLACE AGGREGATE (INDOT CA NO. 2) TO THE DIMENSIONS AND GRADE SHOWN IN THE CONSTRUCTION PLANS, LEAVING THE SURFACE SMOOTH AND SLOPED FOR DRAINAGE.
6. TOP-DRESS THE DRIVE WITH WASHED AGGREGATE (INDOT CA NO.53).
7. WHERE POSSIBLE, DIVERT ALL STORM WATER RUNOFF AND DRAINAGE FROM THE TEMPORARY CONSTRUCTION INGRESS/EGRESS PAD TO A SEDIMENT TRAP OR BASIN.

MAINTENANCE
_ INSPECT DAILY.
_ RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
_ TOP-DRESS WITH CLEAN AGGREGATE AS NEEDED.
_ IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS.
_ FLUSHING SHOULD ONLY BE USED IF THE WATER FROM THE CONSTRUCTION DRIVE CAN BE CONVEYED INTO A SEDIMENT TRAP OR BASIN.

REFERENCED IN CHAPTER 7 PAGE 22 AND 23 IN INDIANA STORM WATER QUALITY MANUAL.

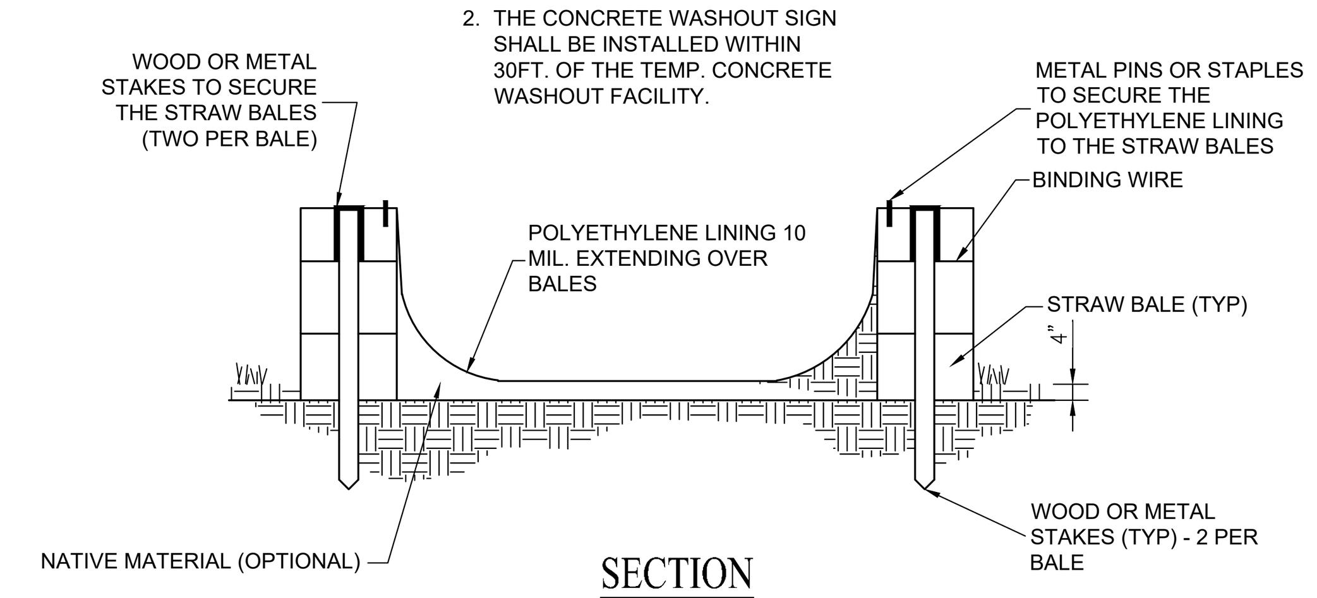
TEMPORARY CONSTRUCTION INGRESS/EGRESS PAD
(NO SCALE)





PLAN

NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30FT. OF THE TEMP. CONCRETE WASHOUT FACILITY.



SECTION

MAINTENANCE
1. INSPECT DAILY AND AFTER EACH STORM EVENT FOR LEAKS, SPILLS, TRACKING OF SOIL BY EQUIPMENT, AND THE POLYETHYLENE LINING FOR FAILURE.
2. ONCE CONCRETE WASTES HARDEN, REMOVE AND DISPOSE OF THE MATERIAL. EXCESS CONCRETE SHOULD BE REMOVED WHEN THE WASHOUT SYSTEM REACHES 50 PERCENT OF THE DESIGN CAPACITY AND SHOULD NOT BE USED UNTIL PROPERLY CLEANED OUT.
3. PLASTIC LINER SHOULD BE REPLACED AFTER EVERY CLEANING, THE REMOVAL OF MATERIAL USUALLY DAMAGES IT.
4. REPAIR OR ENLARGE AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE.
5. IF LIQUIDS DO NOT EVAPORATE IT MAY BE NECESSARY TO VACUUM OR REMOVE THE LIQUIDS AND DISPOSE OF THEM IN AN ACCEPTABLE METHOD.
6. WHEN CONCRETE WASHOUT SYSTEMS ARE NO LONGER REQUIRED THEY SHALL BE CLOSED AND HOLES, DEPRESSIONS AND OTHER DISTURBANCES ASSOCIATED WITH THE SYSTEM SHOULD BE BACKFILLED, GRADED, AND STABILIZED.

ALTERNATE
CONTRACTOR MAY USE A LINED (10 MIL. POLYETHYLENE) DUMPSTER FOR CONCRETE WASHOUT.
NOTE: DUMPSTER IS TO BE USED FOR CONCRETE WASHOUT ONLY. NO CONSTRUCTION WASTE OR DEBRIS SHALL BE ALLOWED TO PREVENT TEARING OF THE LINER.

INSTALLATION
1. UTILIZE AND FOLLOW THE DESIGN IN THE STORM WATER POLLUTION PREVENTION PLAN TO INSTALL THE SYSTEM.
2. DEPENDENT UPON THE TYPE OF SYSTEM, EITHER EXCAVATE THE PIT OR INSTALL THE CONTAINMENT SYSTEM.
3. A BASE SHALL BE CONSTRUCTED AND PREPARED THAT IS FREE OF ROCKS AND OTHER DEBRIS THAT MAY CAUSE TEARS OR PUNCTURES IN THE POLYETHYLENE LINING.
4. INSTALL THE POLYETHYLENE LINING. FOR EXCAVATED SYSTEMS, THE LINING SHOULD EXTEND OVER THE ENTIRE EXCAVATION. THE LINING FOR BERMED SYSTEMS SHOULD BE INSTALLED OVER THE POOLING AREA WITH ENOUGH MATERIAL TO EXTEND THE LINING OVER THE BERM OR CONTAINMENT SYSTEM. THE LINING SHOULD BE SECURED WITH PINS, STAPLES, OR OTHER FASTENERS.
5. PLACE FLAGS, SAFETY FENCING, OR EQUIVALENT TO PROVIDE A BARRIER TO CONSTRUCTION EQUIPMENT AND OTHER TRAFFIC.
6. PLACE A NON-COLLAPSING, NON-WATER HOLDING COVER OVER THE WASHOUT FACILITY PRIOR TO A PREDICTED RAINFALL EVENT TO PREVENT ACCUMULATION OF WATER AND POSSIBLE OVERFLOW OF THE SYSTEM (OPTIONAL).
7. INSTALL SIGNAGE THAT IDENTIFIES CONCRETE WASHOUT AREAS.
8. POST SIGNS DIRECTING CONTRACTORS AND SUPPLIERS TO DESIGNATED LOCATIONS.
9. WHERE NECESSARY, PROVIDE STABLE INGRESS AND EGRESS APPROACH PAD FOR CONCRETE WASHOUT SYSTEMS.
10. USE A 10 MIL. POLYETHYLENE LINED DUMPSTER AS AN ALTERNATE.

CONCRETE WASHOUT
TYPE "ABOVE GRADE W/ STRAW BALES"
(NO SCALE)

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*
ALLAN H. WEIHE, P.E., L.S. - FOUNDER
WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.℠

PROJECT NO.:	W22.0478
DWG NAME:	C104 - SWPPP DETAILS
DESIGNED BY:	SMB/AQ
DRAWN BY:	SMB/AQ
CHECKED BY:	EAC
DATE:	03/10/2023

DATE	BY	REVISIONS AND ISSUES

xx/xx/20xx

APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

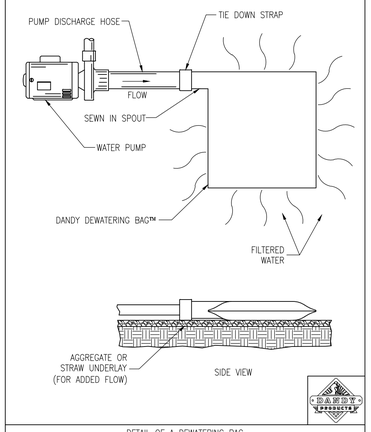
STORMWATER POLLUTION PREVENTION PLAN DETAILS
Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO.
C104

PROJECT NO.
W22.0478

LOCATION: H:\2022\W220478\Engineering\design\conset\Block B\C104 - SWPPP DETAILS.dwg
LAYOUT: C104
DATE/TIME: April 10, 2023 - 4:57pm
PLOTTED BY: steuberm

DANDY DEWATERING BAG™



DETAIL OF A DEWATERING BAG

PROJECT:		DR. BY:
CITY/STATE:	DATE:	DR. NO:

DANDY DEWATERING BAG™
SPECIFICATIONS

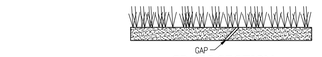
NOTE:
THE DANDY DEWATERING BAG™ WILL BE **MANUFACTURED IN THE U.S.A.** FROM A NONWOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

DANDY DEWATERING BAG™

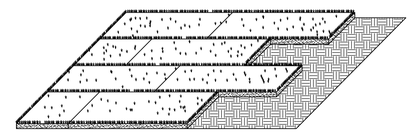
Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	0.9 (205) x 0.9 (205)
Grab Tensile Elongation	ASTM D 4632	%	50 x 50
Puncture Strength	ASTM D 4833	kN (lbs)	0.58 (130)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	2618 (380)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.36 (80) X 0.36 (80)
UV Resistence	ASTM D 4355	%	70
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.180 (80)
Flow Rate	ASTM D 4491	l/min/m² (gal/min/ft²)	3866 (95)
Permittivity	ASTM D 4491	Sec⁻¹	1.2

INSTALLATION:
- LIFTING STRAPS (NOT INCLUDED) SHOULD BE PLACED UNDER THE UNIT TO FACILITATE REMOVAL AFTER USE.
- UNFOLD DANDY DEWATERING BAG™ ON A STABILIZED AREA OVER DENSE VEGETATION, STRAW, OR GRAVEL (IF AN INCREASED DRAINAGE SURFACE IS NEEDED) OR AS DETAILED IN PLANS.
- INSERT DISCHARGE HOSE FROM PUMP INTO DANDY DEWATERING BAG™ A MINIMUM OF SIX (6) INCHES AND TIGHTLY SECURE WITH ATTACHED STRAP TO PREVENT WATER FROM FLOWING OUT OF THE UNIT WITHOUT BEING FILTERED.

MAINTENANCE:
- REPLACE THE UNIT WHEN ½ FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW RATE OF THE PUMP DISCHARGE TO AN IMPRACTICAL RATE.
- REMOVE AND DISPOSE OF THE SEDIMENT IN A MANNER SATISFACTORY TO THE ENGINEER/INSPECTOR OR IN ONE OF THE FOLLOWING WAYS:
- REMOVE THE UNIT AND SEDIMENT FROM ENVIRONMENTALLY SENSITIVE AREAS AND WATERWAYS. AT THE APPROVED DISPOSAL SITE, SLIT THE UNIT; REMOVE THE SEDIMENT AND GRADE SMOOTHLY INTO THE EXISTING TOPOGRAPHY. DISPOSE OF UNIT NO LONGER IN USE AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.
- BURY UNIT ON SITE; REMOVE ANY VISIBLE FABRIC AND SEED.



CROSS SECTION



PERSPECTIVE VIEW

SPECIFICATIONS

SITE PREPARATION

_ GRADE THE SITE TO ACHIEVE POSITIVE DRAINAGE.
_ PREPARE A SMOOTH, FIRM SOIL SURFACE AND APPLY SOIL AMENDMENTS. IRRIGATION IRRIGATE AS NEEDED TO ENSURE ROOTING OF SOD.

MATERIALS

_ SOIL AMENDMENTS - SELECT MATERIALS AND RATES AS DETERMINED BY A SOIL TEST (CONTACT YOUR COUNTY SOIL AND WATER CONSERVATION DISTRICT OR COOPERATIVE EXTENSION OFFICE FOR ASSISTANCE AND SOIL INFORMATION, INCLUDING AVAILABLE SOIL TESTING SERVICES.) OR 400 TO 600 POUNDS OF 12-12-12 ANALYSIS FERTILIZER, OR EQUIVALENT.
_ SOD - SELECT A HIGH QUALITY, HEALTHY, VIGOROUS VARIETY WELL ADAPTED TO THE REGION AND COMPATIBLE WITH THE INTENDED USE.

INSTALLATION

SOD SHOULD NOT BE INSTALLED DURING HOT WEATHER, ON DRY SOIL, FROZEN SOIL, COMPACTED CLAY, LOOSE SAND OR GRAVELLY SUBSTRATE SOILS, AGGREGATE, OR PESTICIDE TREATED SOIL. THE IDEAL TIME TO LAY SOD IS MAY 1 TO JUNE 1 OR SEPTEMBER 1 TO SEPTEMBER 30, ALTHOUGH IT CAN BE INSTALLED AS EARLY AS MARCH 15 IF AVAILABLE OR JUNE 1 TO SEPTEMBER 1 IF IRRIGATED.

SITE PREPARATION

1. APPLY TOPSOIL IF EXISTING SOIL CONDITIONS ARE UNSUITABLE FOR ESTABLISHING VEGETATION.
2. GRADE THE SITE TO ACHIEVE POSITIVE DRAINAGE AND CREATE A SMOOTH, FIRM SOIL SURFACE.
3. WHERE APPLICABLE, USE A CHISEL PLOW, DISK, HARROW, OR RAKE TO BREAK UP COMPACTED SOILS AND CREATE A FAVORABLE ROOTING DEPTH OF SIX TO EIGHT INCHES.

SOD BED PREPARATION

1. TEST SOIL TO DETERMINE PH AND NUTRIENT LEVELS.
2. IF SOIL PH IS TOO ACIDIC FOR THE GRASS SOD TO BE INSTALLED, APPLY LIME ACCORDING TO SOIL TEST RESULTS OR AT THE RATE RECOMMENDED BY THE SOD SUPPLIER.
3. APPLY FERTILIZER AS RECOMMENDED BY THE SOIL TEST. IF TESTING WAS NOT DONE, APPLY 400 TO 600 POUNDS PER ACRE OF 12-12-12 ANALYSIS FERTILIZER, OR EQUIVALENT.
4. WORK THE SOIL AMENDMENTS INTO THE UPPER TWO TO FOUR INCHES OF SOIL WITH A DISK OR RAKE OPERATED ACROSS THE SLOPE.
5. RAKE OR HARROW THE AREA TO ACHIEVE A SMOOTH FINAL GRADE AND THEN ROLL OR CULTIPACK THE SOIL SURFACE TO CREATE A FIRM SURFACE ON WHICH TO LAY THE SOD.

LAYING THE SOD

1. INSTALL SOD WITHIN THIRTY-SIX HOURS OF ITS CUTTING.
2. STORE THE SOD IN A SHADED LOCATION DURING INSTALLATION.
3. IMMEDIATELY BEFORE LAYING THE SOD, RAKE THE SOIL SURFACE TO BREAK ANY CRUST. (IF THE WEATHER IS HOT, LIGHTLY IRRIGATE THE SOIL SURFACE PRIOR TO LAYING THE SOD.)
4. LAY SOD STRIPS IN A BRICK-LIKE PATTERN.
5. BUTT ALL JOINTS TIGHTLY AGAINST EACH OTHER (DO NOT STRETCH OR OVERLAP THEM), USING A KNIFE OR MASON'S TROWEL TO TRIM AND FIT SOD INTO IRREGULARLY SHAPED AREAS.
6. ROLL THE SOD LIGHTLY AFTER INSTALLATION TO ENSURE FIRM CONTACT BETWEEN THE SOD AND SOIL.
7. IRRIGATE NEWLY SODDED AREAS UNTIL THE UNDERLYING SOIL IS WET TO A DEPTH OF FOUR INCHES, AND THEN KEEP MOIST UNTIL THE GRASS TAKES ROOT.

SLOPE APPLICATION

1. INSTALL THE SOD STRIPS WITH THE LONGEST DIMENSION PERPENDICULAR TO THE SLOPE.
2. WHERE SLOPES EXCEED A RATIO OF 3:1, STAPLE OR STAKE EACH STRIP AT THE CORNERS AND IN THE MIDDLE.

CHANNEL APPLICATION

(SODDING PROVIDES QUICKER PROTECTION THAN SEEDING AND MAY REDUCE THE RISK OF EARLY WASHOUT.)

1. EXCAVATE THE CHANNEL, ALLOWING FOR THE FULL THICKNESS OF THE SOD.
2. LAY THE SOD STRIPS WITH THE LONGEST DIMENSION PERPENDICULAR TO CHANNEL FLOW.
3. STAPLE OR STAKE EACH STRIP OF SOD AT THE CORNERS AND IN THE MIDDLE.
4. STAPLE JUTE OR BIODEGRADABLE POLYPROPYLENE NETTING OVER THE SODDED AREA TO MINIMIZE THE POTENTIAL FOR WASHOUT DURING ESTABLISHMENT.

MAINTENANCE

_ INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS UNTIL SOD IS WELL ROOTED.
_ KEEP SOD MOIST UNTIL FULLY ROOTED.
_ AFTER SOD IS WELL-ROOTED (TWO TO THREE WEEKS), MAINTAIN A PLANT HEIGHT OF TWO TO THREE INCHES.
_ TIME MOWING TO AVOID RUTS IN TURF.
_ FERTILIZE TURF AREAS ANNUALLY. APPLY FERTILIZER IN A SPLIT APPLICATION. FOR COOL SEASON GRASSES, APPLY ONE-HALF OF THE FERTILIZER IN LATE SPRING AND ONE-HALF IN EARLY FALL. FOR WARM-SEASON GRASSES, APPLY ONE-THIRD IN EARLY SPRING, ONE-THIRD IN LATE SPRING AND ONE-THIRD IN MID-SUMMER.

REFERENCE IN CHAPTER 7 PAGES 47-50 IN THE INDIANA STORM WATER QUALITY MANUAL

SOD APPLICATION DETAIL

(NO SCALE)

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net

317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*

ALLAN H. WEIHE, P.E., L.S. - FOUNDER

WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.™

BY	DATE	REVISIONS AND ISSUES
		xx/xx/20xx

PROJECT NO.: W22.0478
DWG NAME: C104 - SWPPP DETAILS
DESIGNED BY: SMB/AQ
DRAWN BY: SMB/AQ
CHECKED BY: EAC
DATE: 03/10/2023

APPROVAL PENDING
NOT FOR CONSTRUCTION

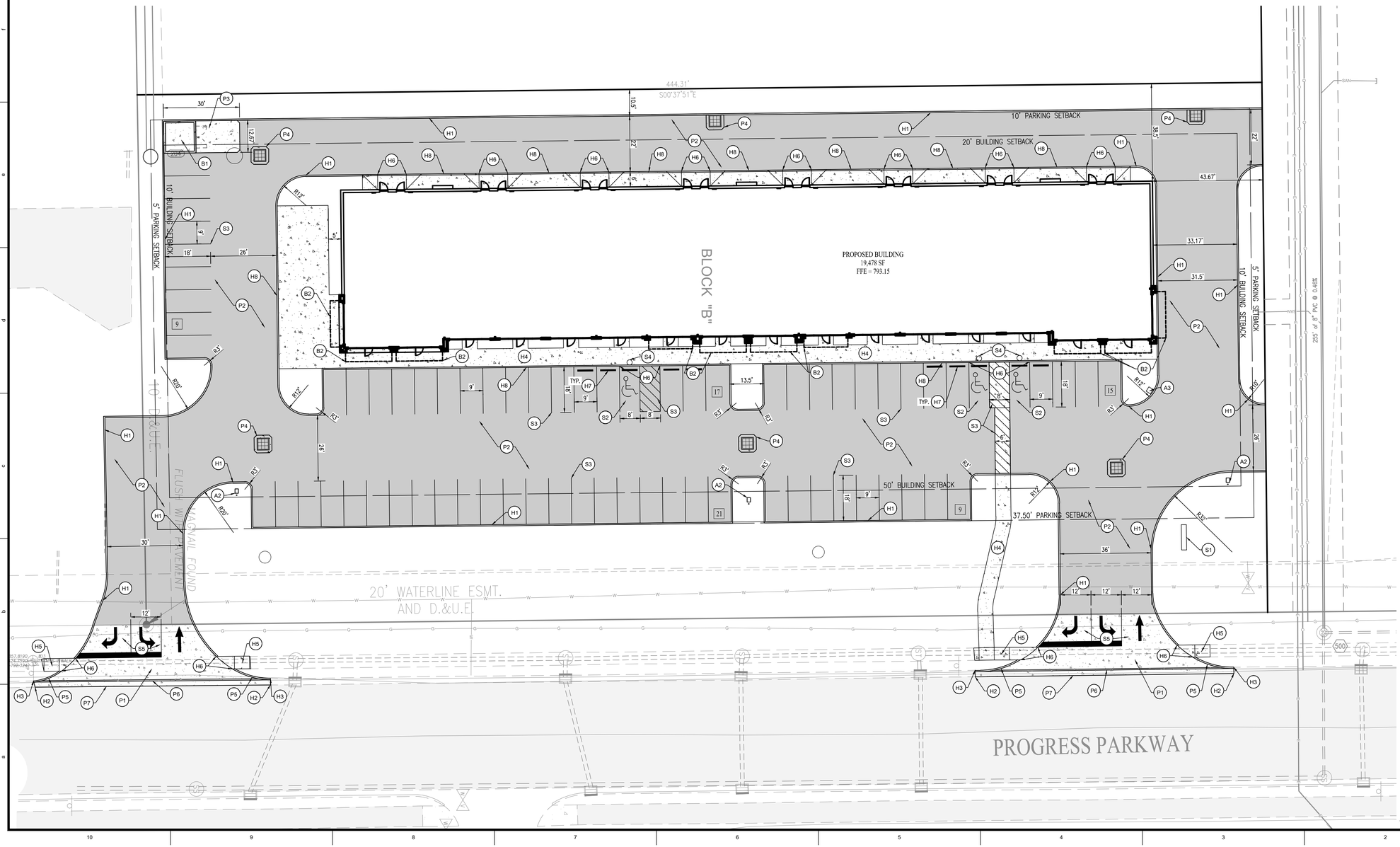
PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

STORMWATER POLLUTION PREVENTION PLAN DETAILS
Block B in Shelbyville Marketplace, Part of the NE¼ of Section 04, Township 12 North, Range 7 East, Addision Township, Shelby County, Indiana

SHEET NO.
C105

PROJECT NO.
W22.0478

LOCATION: I:\2022\W22.0478\Engineering\Landscape\Layout\Block B\C104 - SWPPP DETAILS.dwg
LAYOUT: C105
DATE/TIME: April 10, 2023 - 4:57pm
PLOTTED BY: Allen Weihe



SITE PLAN LEGEND

UTILITIES

- REBAR FOUND
- PK OR MAG NAIL FOUND
- TEMPORARY BENCH MARK
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- FIRE DEPT HOOKUP
- WATER MANHOLE
- GAS METER
- GAS VALVE
- GAS PIPELINE MARKER
- UTILITY POLE
- GUY ANCHOR
- TRANSFORMER
- SANITARY SEWER MANHOLE
- FIBER OPTIC MARKER
- MAIL BOX
- BOLLARD
- SIGN
- COMMUNICATIONS PEDESTAL
- COMMUNICATIONS RISER
- CABLE TELEVISION PEDESTAL
- CURB INLET
- BEEHIVE INLET
- SQUARE INLET
- STORM MANHOLE
- MONITORING WELL

OTHER

- CURB & GUTTER ELEVATION
- PAVEMENT SPOT ELEVATION
- GROUND SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EMERGENCY FLOOD ROUTE
- FLOW DIRECTION AND SLOPE
- ACCESSIBLE SPACE
- PARKING COUNT
- PARKING WHEEL STOP

SITE PLAN NOTES

PAVEMENT

- P1 RIGHT-OF-WAY CONCRETE PAVING (REFER TO DETAIL ON SHELBYVILLE CONSTRUCTION STANDARDS SHEET 5)
- P2 STANDARD DUTY ASPHALT PAVING
- P3 STANDARD DUTY CONCRETE WITH 1' CHAMFERED CORNERS
- P4 STORM INLET WITH CONCRETE APRON SHOWN ON SHEET C602
- P5 TYPE II 2' COMBINED CONCRETE CURB & GUTTER (REFER TO DETAIL ON SHELBYVILLE CONSTRUCTION STANDARDS SHEET 5)
- P6 TYPE IV 2' TRUNCATED REINFORCED CONCRETE GUTTER (REFER TO DETAIL ON SHELBYVILLE CONSTRUCTION STANDARDS SHEET 5)
- P7 MATCH EXISTING PAVEMENT

HARDSCAPE

- H1 6" STRAIGHT CURB
- H2 6" CURB AND GUTTER
- H3 MATCH EXISTING CURB
- H4 CONCRETE SIDEWALK
- H5 ACCESSIBLE RAMP
- H6 PAVEMENT FLUSH WITH SIDEWALK
- H7 CONCRETE PARKING BARRIER
- H8 INTEGRAL WALK AND CURB
- H9 TRANSFORMER PAD LOCATION PENDING COORDINATION WITH UTILITY

BUILDING ACCESSORIES

- B1 DUMPSTER ENCLOSURE
- B2 AWNING

ACCESSORIES

- A1 BOLLARD
- A2 LIGHT POLE AND BASE
- A3 MENU KIOSK. COORDINATE WITH OWNER FOR SIZE AND LOCATION

SIGNAGE & MARKINGS

- S1 POLE/GROUND SIGN LOCATION
- S2 ACCESSIBLE PARKING SPACE
- S3 4" PAINTED WHITE SOLID LINES (TYP)
- S4 POLE MOUNTED ACCESSIBLE SIGN
- S5 PAINTED WHITE DIRECTIONAL TRAFFIC ARROWS

SITE DATA

SITE AREA = 2.13 AC
BUILDING AREA = 19,478 SF
PERCENT IMPERVIOUS = 75%
ZONING = BH - BUSINESS HIGHWAY
- FRONT YARD BSL REQUIRED = 50 FT
- REAR YARD BSL REQUIRED = 20 FT
- SIDE YARD BSL REQUIRED = 10 FT

PARKING REQUIRED:
- PARKING REQUIREMENT: 1 SPACE/300 SF
- PARKING REQUIRED = 65 SPACES
- PARKING DIMENSIONS = 9' x 18'

PARKING PROVIDED:
- 68 - STANDARD SPACES
- 3 - ADA SPACES
- 71 - TOTAL SPACES

PAVEMENT

- STANDARD DUTY ASPHALT
- HEAVY DUTY ASPHALT
- CONCRETE PAVEMENT

LINE TYPES

- RIGHT OF WAY LINE
- FENCE
- GUARD RAIL
- BUILDING SETBACK LINE
- BOUNDARY LINE
- SECTION LINE

ABBREVIATIONS

ROW	RIGHT OF WAY
BSL	BUILDING SETBACK LINE
ESMT	EASEMENT
D.&U.E.	DRAINAGE and UTILITY EASEMENT
FFE	FINISH FLOOR ELEVATION

SCALE: 1" = 20'
0 10 20 40

Know what's below. Call before you dig.
Within Indiana Call 811 or 800-382-5544
24 Hours a Day, 7 Days a Week.
PER INDIANA STATE LAW IC 8-1-26, IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE, TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net

317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*

ALLAN H. WEIHE, P.E., L.S. - FOUNDER

WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.™

PROJECT NO:	W22.0478
DWG NAME:	C200 - SITE PLAN
DESIGNED BY:	SMB/AQ
DRAWN BY:	SMB/AQ
CHECKED BY:	EAC
DATE:	03/10/2023

REVISIONS AND ISSUES	DATE
xx/xx/20xx	

APPROVAL PENDING
NOT FOR CONSTRUCTION

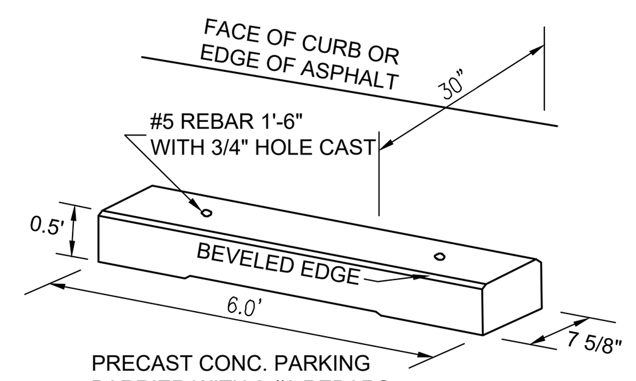
PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

SITE PLAN
Block B in Shelbyville Marketplace, Part of the NE¼ of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO.
C200

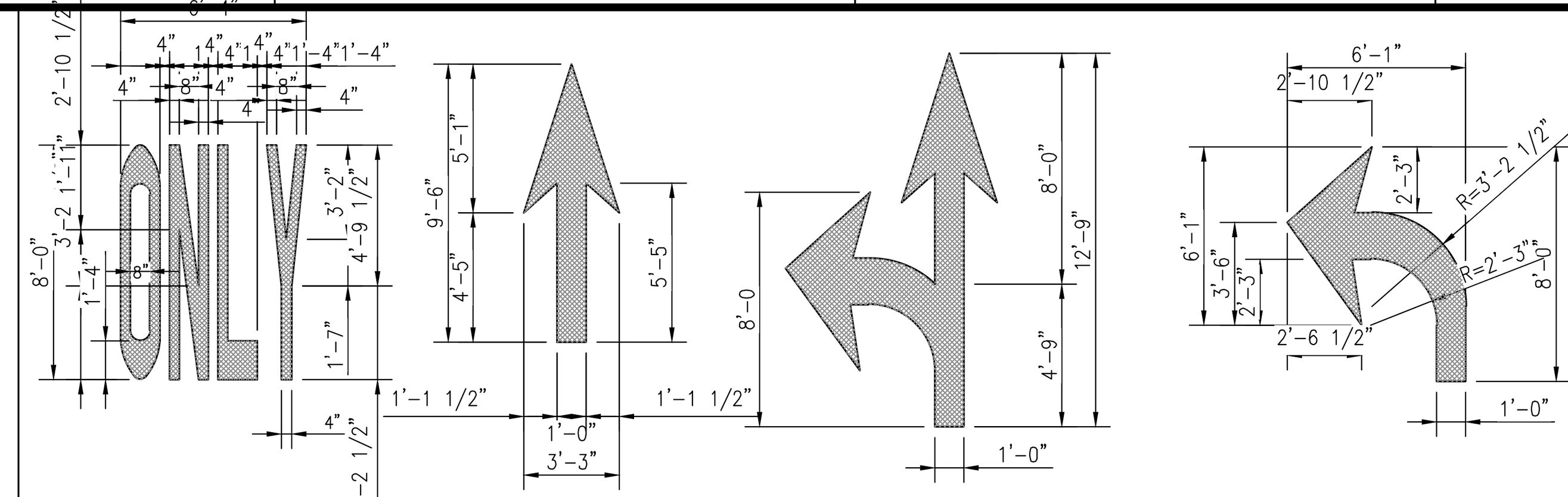
PROJECT NO.
W22.0478

LOCATION: N:\2022\W22.0478\Engineering\Design\Current\Block B\C200 - SITE PLAN.dwg
USER: SMB
DATE/TIME: April 10, 2023 - 4:57pm
PLOTTED BY: Addison



PRECAST CONC. PARKING BARRIER WITH 2-#3 REBARS USE 4000 PSI CONC.

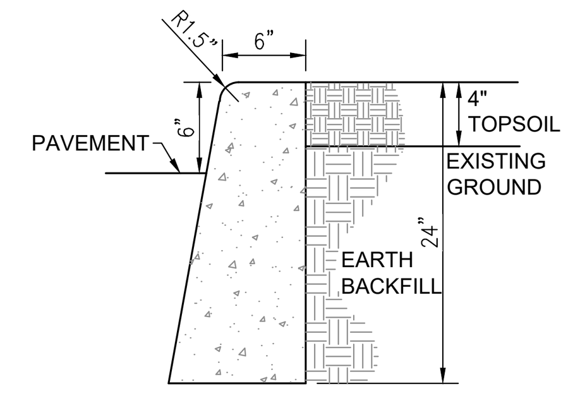
PARKING BARRIER
(NO SCALE)



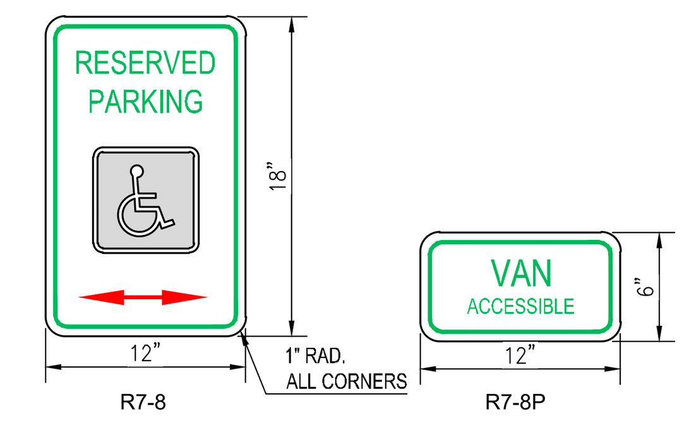
NOTE:
LANE CONTROL ARROWS SHALL BE WHITE AND SHALL BE PLACED IN ACCORDANCE WITH IMUTCD. THE ARROW SHOULD BE 20 FEET IN ADVANCE OF THE STOPLINE. THE WORD "ONLY" SHOULD BE LOCATED IN ADVANCE OF THE PAVEMENT ARROW.

TRAFFIC MARKING DETAILS
(NO SCALE)

NOTE:
TYPICAL SIZES FOR NORMAL INSTALLATION; SIZES MAY BE REDUCED APPROXIMATELY ONE-THIRD FOR LOW-SPEED URBAN CONDITIONS.



CURB DETAIL
(NO SCALE)

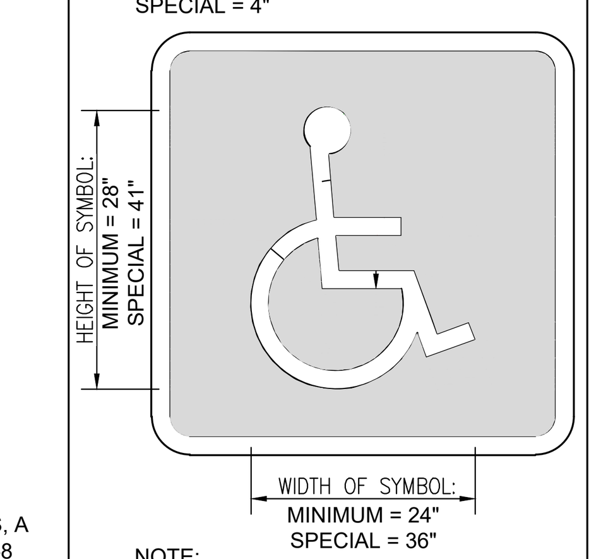


NOTE:
12"X18" 18 GAUGE HOT DIP GALVANIZED NON-REFLECTIVE SIGN .

NOTE:
WHERE PARKING SPACES THAT ARE RESERVED FOR PERSONS WITH DISABILITIES ARE DESIGNATED TO ACCOMMODATE WHEELCHAIR VANS, A VAN ACCESSIBLE (R7-8P) PLAQUE SHALL BE MOUNTED BELOW THE R7-8 SIGN. THE R7-8SIGN SHALL HAVE A GREEN LEGEND AND BORDER AND A WHITE WHEELCHAIR SYMBOL ON A BLUE SQUARE ALL ON A WHITE BACKGROUND. THE R7-8P PLAQUE SHALL HAVE A GREEN LEGEND AND BORDER ON A WHITE BACKGROUND.

ACCESSIBLE SIGNS
(NO SCALE)

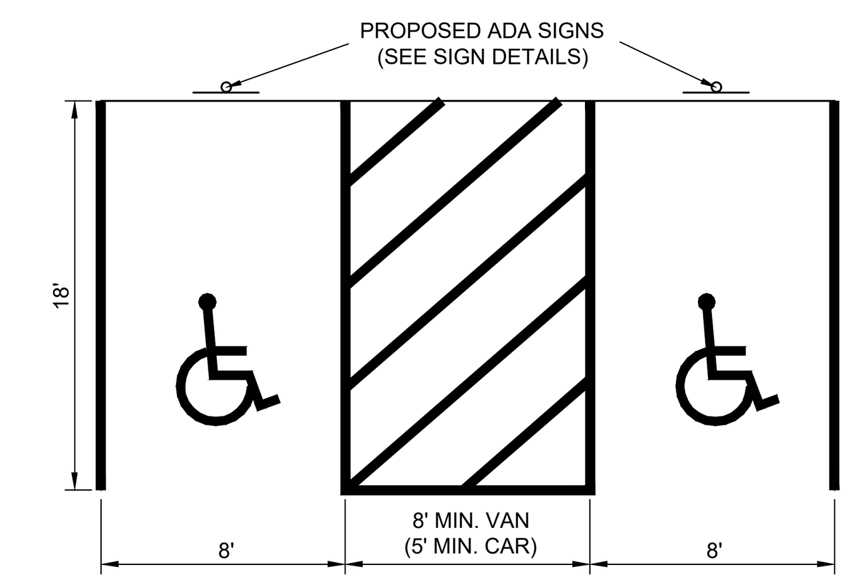
NOTE:
ALL STRIPES TO BE PAINTED WHITE.
MINIMUM = 3"
SPECIAL = 4"



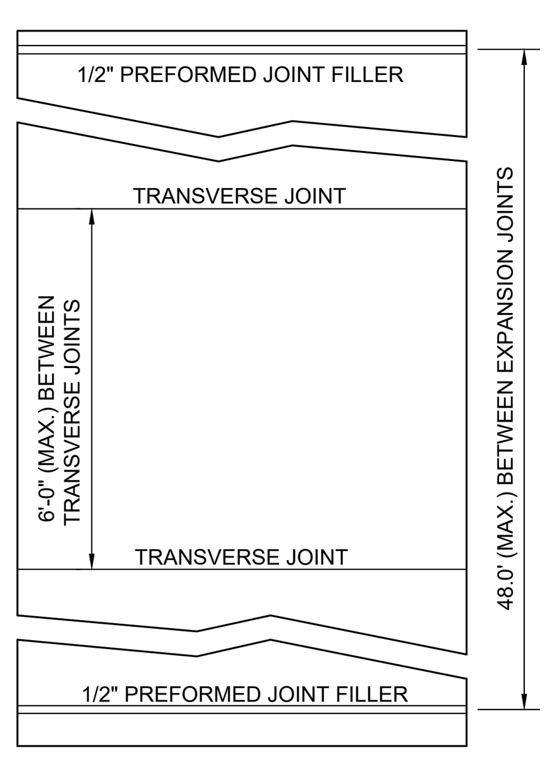
NOTE:
BLUE BACKGROUND AND WHITE BORDER ARE OPTIONAL

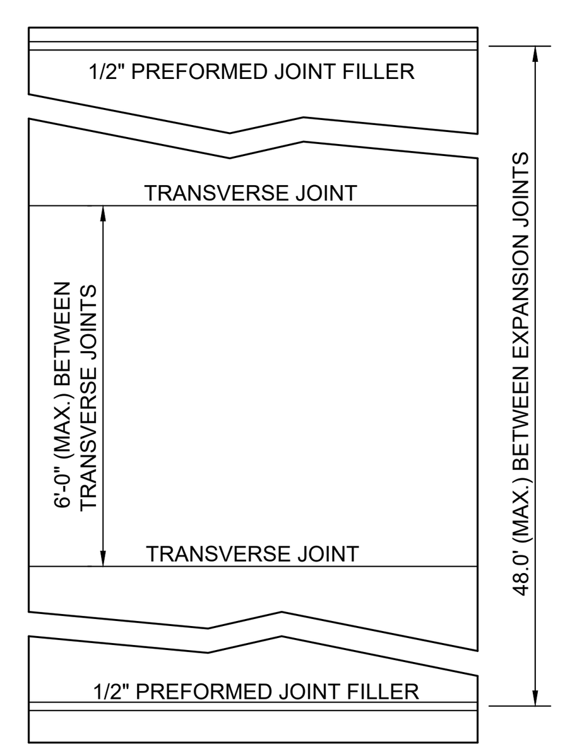
ACCESSIBLE PARKING SYMBOL DETAIL
(NO SCALE)

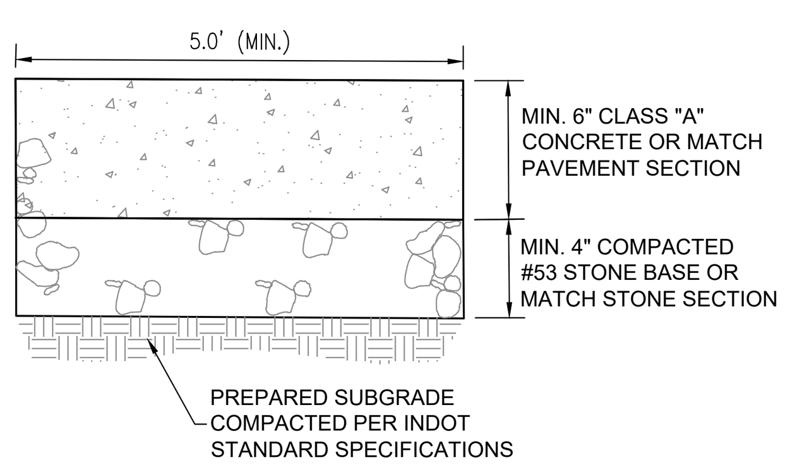
NOTE:
ALL PAINT TO BE BLUE NON-SKID SURFACE APPLICATION OF CILICA SAND OR GLASS BEAD BY METHOD OF MIXTURE AND OR BROADCASTING.



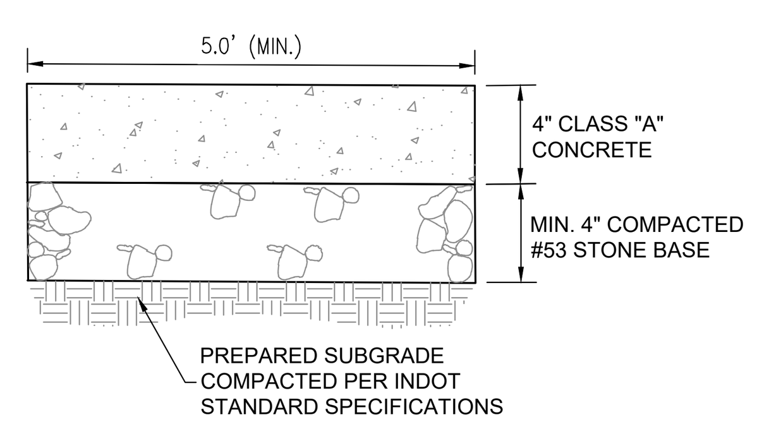
ACCESSIBLE PARKING SPACES
(NO SCALE)



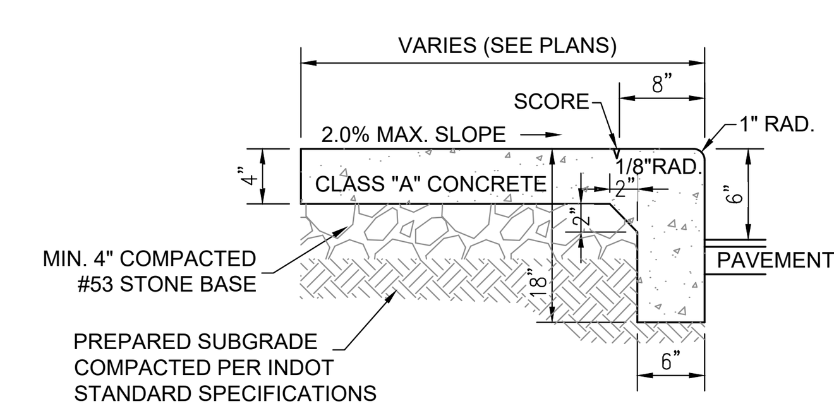




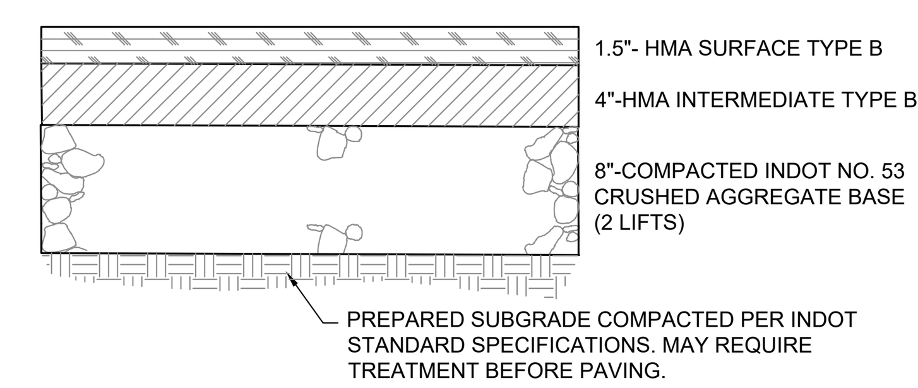
SIDEWALK SECTION - DRIVEWAY CROSSING
(NO SCALE)



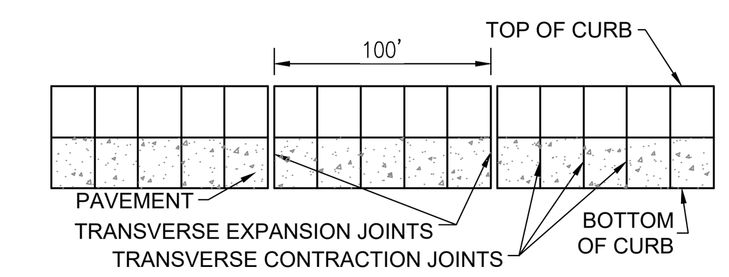
TYPICAL SIDEWALK SECTION
(NO SCALE)



INTEGRAL WALK AND CURB DETAIL
(NO SCALE)

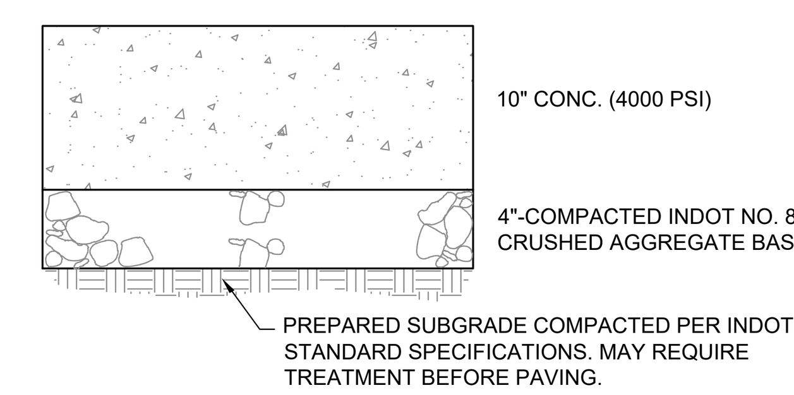


STANDARD DUTY ASPHALT PAVING SECTION
(NO SCALE)



CURB JOINT DETAIL
(NO SCALE)

NOTE: MAXIMUM TRANSVERSE CONTRACTION JOINT DISTANCE 10 FEET FOR TANGENT SECTIONS AND 5 FEET FOR RADIUS SECTIONS.

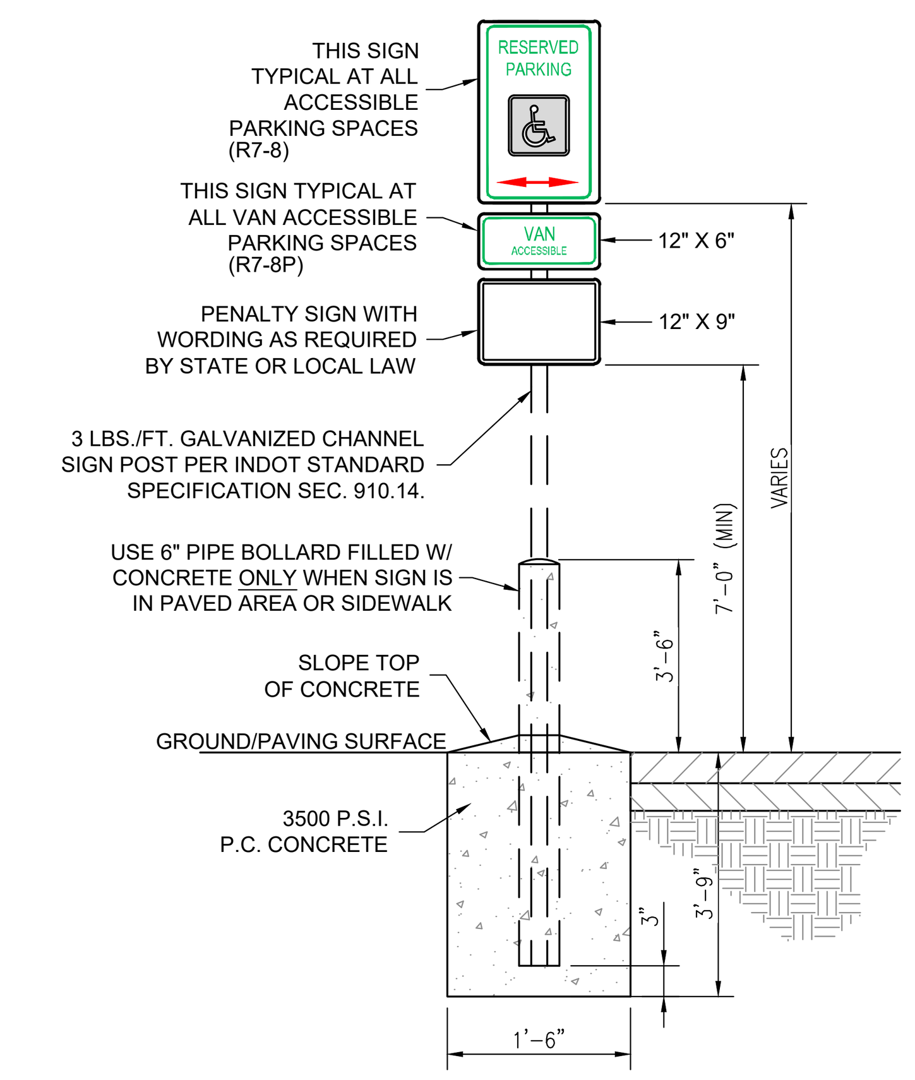


STANDARD DUTY CONCRETE PAVING SECTION
(NO SCALE)

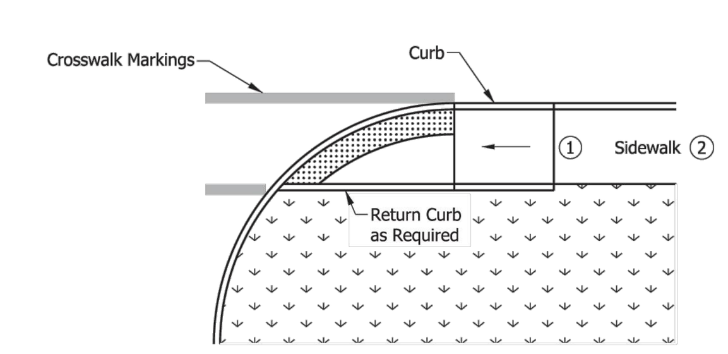
NOTE: PAVING SECTIONS PROVIDED WITHOUT BENEFIT OF A GEOTECHNICAL REPORT. IT IS RECOMMENDED THAT A GEOTECHNICAL REPORT BE FURNISHED WITH PAVEMENT SECTION RECOMMENDATIONS.
PAVEMENT SECTIONS PROVIDED MEET SHELBYVILLE MINIMUM STANDARDS FOR MEDIUM DUTY PARKING LOTS. ADJUST ABOVE SECTIONS AS REQUIRED TO MATCH GEOTECHNICAL RECOMMENDATIONS.

ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

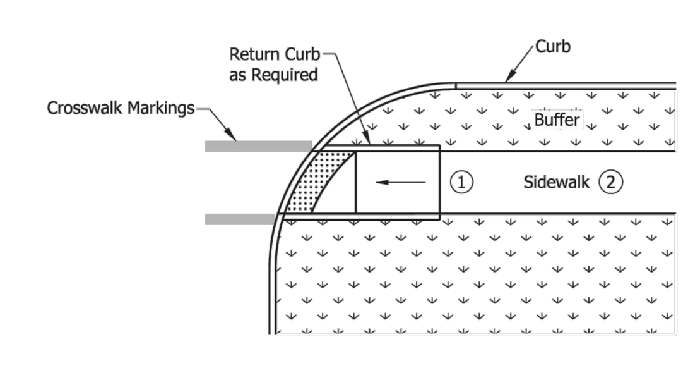
WHERE PARKING SPACES THAT ARE RESERVED FOR PERSONS WITH DISABILITIES ARE DESIGNATED TO ACCOMMODATE WHEELCHAIR VANS, A VAN ACCESSIBLE (R7-8P) PLAQUE SHALL BE MOUNTED BELOW THE R7-8 SIGN. THE R7-8SIGN SHALL HAVE A GREEN LEGEND AND BORDER AND A WHITE WHEELCHAIR SYMBOL ON A BLUE SQUARE ALL ON A WHITE BACKGROUND. THE R7-8P PLAQUE SHALL HAVE A GREEN LEGEND AND BORDER ON A WHITE BACKGROUND.



ACCESSIBLE SIGN BOLLARD MOUNT DETAIL
(NO SCALE)



ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP ADJACENT CURB



ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP WITH BUFFER

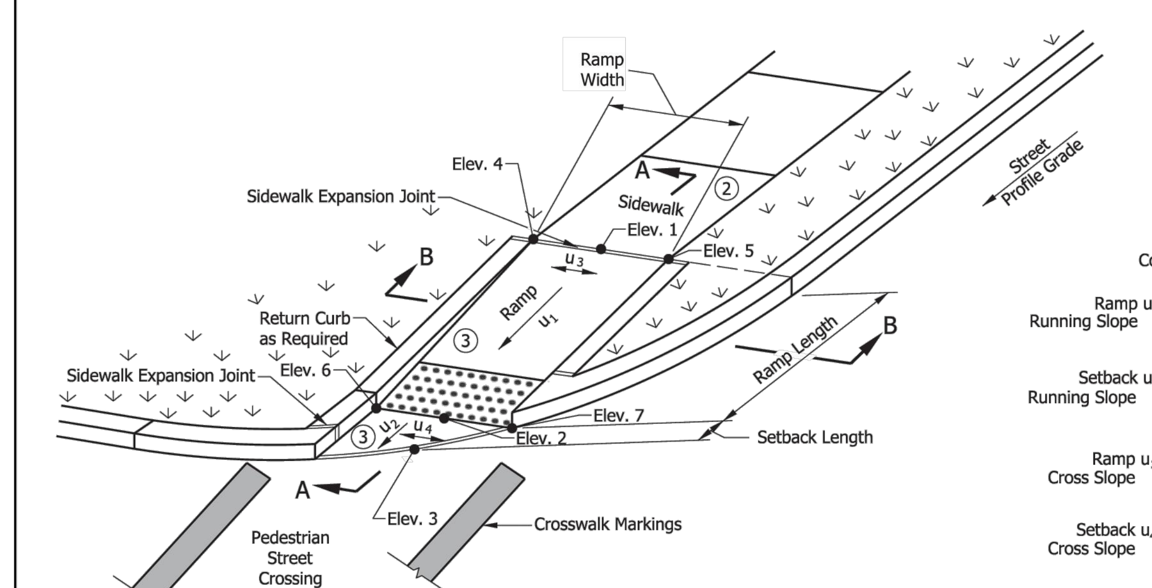
NOTES:

(1) A turning space is not required at the top of the ramp for a one-way directional perpendicular curb ramp.

(2) Where there is no buffer between the sidewalk and curb the preferred minimum sidewalk width is 6 ft. Where a buffer is placed between the sidewalk and curb, the preferred minimum sidewalk width is 5 ft. See Standard Drawing Series E 604-SDWK for sidewalk details.

LEGEND:
- Buffer or Other Non-Walkable Surface
- Ramp
- Detectable Warning Surface

INDIANA DEPARTMENT OF TRANSPORTATION	
ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP TYPICAL PLACEMENT SEPTEMBER 2016	
STANDARD DRAWING NO.	E 604-SWCR-05
ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER	/s/ Elizabeth W. Phillips 03/15/16 DESIGN STANDARDS ENGINEER DATE /s/ Mark A. Miller 03/18/16 CHIEF ENGINEER DATE



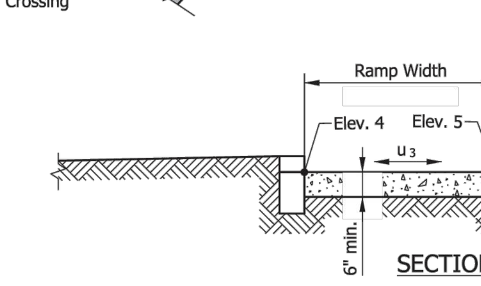
Component Slope Equations:

Ramp u_1 = $\frac{|\text{Elev. 1 - Elev. 2}|}{\text{Ramp Length}}$ ≤ 8.33% (Running Slope)

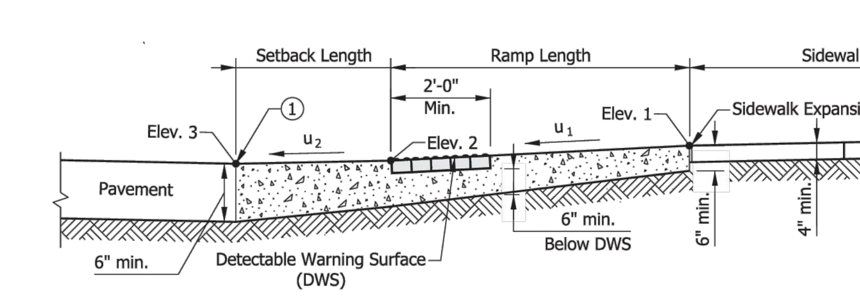
Setback u_2 = $\frac{|\text{Elev. 2 - Elev. 3}|}{\text{Setback Length}}$ ≤ Profile Grade of Adjacent Street (Running Slope)

Ramp u_3 = $\frac{|\text{Elev. 4 - Elev. 5}|}{\text{Ramp Width}}$ ≤ 2.00% (4) (Cross Slope)

Setback u_4 = $\frac{|\text{Elev. 6 - Elev. 7}|}{\text{Ramp Width}}$ ≤ 2.00% (4) (Cross Slope)



SECTION B-B



SECTION A-A

NOTES:

(1) The bottom edge of the ramp or setback and top of curb shall be flush with the edge of adjacent pavement and gutter line.

(2) A turning space is not required at the top of the ramp for a one-way directional perpendicular curb ramp.

(3) Curb ramp surface shall be coarse broomed transverse to the running slope.

(4) See Standard Drawing E 604-SWCR-01 for cross slope exceptions.

5. See Standard Drawing E 604-SWCR-12, -13, and -14 for Detectable Warning Surface placement, configuration, and details.

6. See Standard Drawing E 604-CCSJ-01 for sidewalk expansion joint details.

LEGEND:
- Buffer or Other Non-Walkable Surface
- Ramp
- Detectable Warning Surface

INDIANA DEPARTMENT OF TRANSPORTATION	
ONE-WAY DIRECTIONAL PERPENDICULAR CURB RAMP COMPONENT DETAILS SEPTEMBER 2018	
STANDARD DRAWING NO.	E 604-SWCR-06
ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER	/s/ Elizabeth W. Phillips 03/29/18 DESIGN STANDARDS ENGINEER DATE /s/ John Leckie 04/25/18 CHIEF ENGINEER DATE

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 fax
ALLAN H. WEIHE, P.E., L.S. - FOUNDER
WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.

PROJECT NO.: W22.0478	DWG NAME: C201 - SITE DETAILS	DESIGNED BY: SMB/AQ	DRAWN BY: SMB/AQ	CHECKED BY: EAC	DATE: 03/10/2023

REVISIONS AND ISSUES | DATE | BY

xx/xx/20xx

APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:

SHELBYVILLE MARKETPLACE - RETAIL

2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

SITE DETAILS

Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO.
C201

PROJECT NO.
W22.0478

LOCATION: H:\2022\W220478\Engineering\design\conset\Block B\C201 - SITE DETAILS.dwg
LAYOUT: C201
DATE/TIME: April 10, 2023 - 4:58pm
PLOTTED BY: steuberm

STORM SEWER STRUCTURE DATA TABLE				
STRUCTURE NUMBER	TOP OF CASTING	STRUCTURE TYPE	CASTING TYPE	INVERT
100	791.03	PROPOSED MANHOLE	R-1772	INV IN (N)= 785.11 (24" HDPE)
101	791.11	PAVED INLET, ROUND STRUCTURE, RECTANGULAR CASTING	R-3405	INV IN (E)= 785.43 (18" HDPE) INV IN (N)= 786.13 (15" HDPE) INV OUT (S)= 785.33 (24" HDPE)
101A	791.24	WATER QUALITY STRUCTURE, ROUND	PER MANUFACTURER	INV IN (N)= 785.28 (24" HDPE) INV OUT (S)= 785.28 (24" HDPE)
102	790.91	PAVED INLET, ROUND STRUCTURE, RECTANGULAR CASTING	R-3405	INV IN (N)= 786.10 (15" HDPE) INV IN (E)= 787.57 (12" RCP) INV OUT (W)= 786.00 (18" HDPE)
103	791.39	PAVED INLET, ROUND STRUCTURE, RECTANGULAR CASTING	R-3405	INV IN (N)= 787.16 (12" HDPE) INV IN (NE)= 787.68 (12" RCP) INV OUT (S)= 787.06 (15" HDPE)
104	791.14	PAVED INLET, ROUND STRUCTURE, RECTANGULAR CASTING	R-3405	INV OUT (S)= 787.89 (12" HDPE)
105	791.19	BEEHIVE INLET, ROUND STRUCTURE	R-4342	INV OUT (W)= 788.02 (12" RCP)
106	791.35	BEEHIVE INLET, ROUND STRUCTURE	R-4342	INV OUT (SW)= 788.19 (12" RCP)

STORM SEWER PIPE DATA TABLE					
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	SIZE	MATERIAL	LENGTH	SLOPE
101	101A	24"	HDPE	10'	0.50%
101A	100	24"	HDPE	33'	0.51%
102	101	18"	HDPE	114'	0.50%
103	102	15"	HDPE	191'	0.50%
104	103	12"	HDPE	146'	0.50%
105	102	12"	RCP	45'	1.00%
106	103	12"	RCP	51'	1.00%

VED INLET, ROUND STRUCTURE, RECTANGULAR CASTING R-3

VED INLET, ROUND STRUCTURE, RECTANGULAR CASTING R-3

NULL STRUCTURE ?

OTHER

- CURB & GUTTER ELEVATION
- PAVEMENT SPOT ELEVATION
- GROUND SPOT ELEVATION
- EXISTING SPOT ELEVATION
- EMERGENCY FLOOD ROUTE
- FLOW DIRECTION AND SLOPE
- ACCESSIBLE SPACE
- PARKING COUNT
- PARKING WHEEL STOP

ABBREVIATIONS

ROW	RIGHT OF WAY
ESMT	EASEMENT
D.&U.E.	DRAINAGE AND UTILITY EASEMENT
FFE	FINISH FLOOR ELEVATION
TC	TOP OF CURB
GUT	GUTTER
CMP	CORRUGATED METAL PIPE
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE PIPE
VCP	VITRIFIED CLAY PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
DIP	DUCTILE IRON PIPE
SSD	SUB SURFACE DRAIN PIPE
STM	STORM
SAN	SANITARY
STR	STRUCTURE
CO	CLEANOUT

GRADING PLAN LEGEND

UTILITIES

- REBAR FOUND
- PK OR MAG NAIL FOUND
- TEMPORARY BENCH MARK
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- FIRE DEPT HOOKUP
- WATER MANHOLE
- GAS METER
- GAS VALVE
- GAS PIPELINE MARKER
- UTILITY POLE
- GUY ANCHOR
- TRANSFORMER
- SANITARY SEWER MANHOLE
- FIBER OPTIC MARKER
- MAIL BOX
- BOLLARD
- SIGN
- COMMUNICATIONS PEDESTAL
- COMMUNICATIONS RISER
- CABLE TELEVISION PEDESTAL
- CURB INLET
- BEEHIVE INLET
- SQUARE INLET
- STORM MANHOLE
- MONITORING WELL

GENERAL NOTES

1. THE SITE DOES NOT LIE IN A SPECIAL FLOOD HAZARD AREA AS ESTABLISHED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY - NATIONAL FLOOD INSURANCE PROGRAM, WHEN PLOTTED BY SCALE ON FLOOD INSURANCE RATE MAP #18145C0138C, DATED NOVEMBER 5, 2014.

EXISTING AREAS

PERVIOUS = 2.125 AC.
IMPERVIOUS = 0.005 AC.

PROPOSED AREAS

PERVIOUS = 0.54 AC.
IMPERVIOUS = 1.59 AC.

BENCHMARK DATA

SITE TBMS

TBM 1112 IS A CUT "X" ON THE NORTHEAST BONNET BOLT OF A FIRE HYDRANT ON THE SOUTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 54' SOUTHWEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND SGT. HENDERSON DRIVE.
ELEV. 791.99 (NAVD 88)

TBM 1180 IS A CUT "X" ON THE EAST BONNET BOLT OF A FIRE HYDRANT ON THE NORTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 240' SOUTHWEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND DEPUTY ALYEA DRIVE.
ELEV. 792.93 (NAVD 88)

TBM 1440 IS A CUT "X" ON THE EAST BONNET BOLT OF A FIRE HYDRANT ON THE SOUTHERN RIGHT-OF-WAY OF MARKET PLACE BLVD., APPROXIMATELY 306' WEST OF THE INTERSECTION OF MARKET PLACE BLVD. AND PROGRESS PARKWAY.
ELEV. 793.06 (NAVD 88)

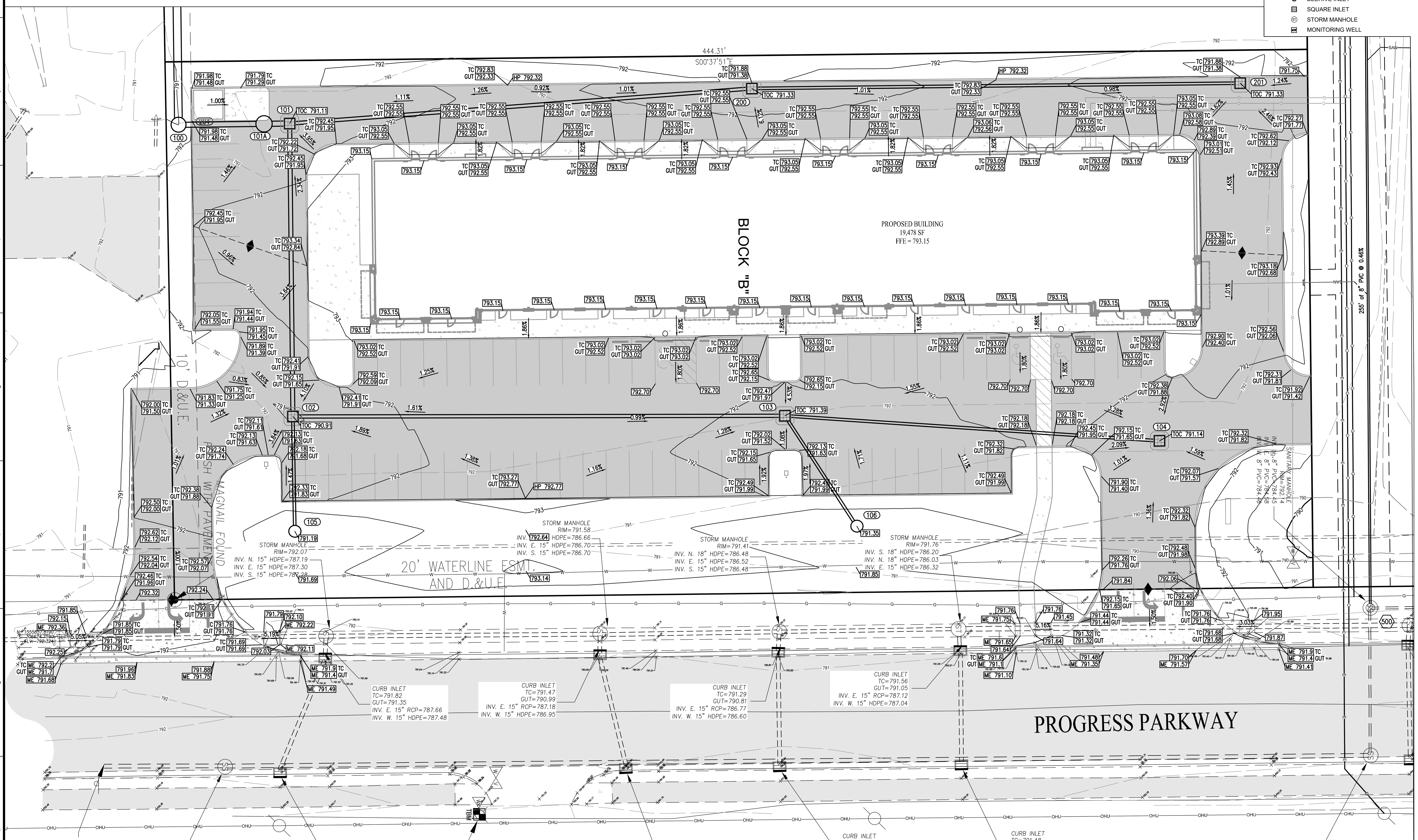
TBM 1819 IS A CUT "X" ON THE SOUTHWEST BONNET BOLT OF A FIRE HYDRANT ON THE EASTERN RIGHT-OF-WAY OF PROGRESS PARKWAY, APPROXIMATELY 607' SOUTH OF THE INTERSECTION OF PROGRESS PARKWAY AND MARKET PLACE BLVD.
ELEV. 793.12 (NAVD 88)

PAVEMENT

- STANDARD DUTY ASPHALT
- HEAVY DUTY ASPHALT
- CONCRETE PAVEMENT

LINE TYPES

- RIGHT OF WAY LINE
- FENCE
- GUARD RAIL
- BOUNDARY LINE
- FLOW LINE
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- UNDERGROUND GAS
- UNDERGROUND WATER
- AERIAL ELECTRIC
- UNDERGROUND ELECTRIC
- UNDERGROUND COMMUNICATIONS
- AERIAL COMMUNICATIONS
- UNDERGROUND FIBER OPTIC
- AERIAL FIBER OPTIC CABLE
- OVERHEAD UTILITY
- FORCE MAIN
- SANITARY SEWER LATERAL
- SANITARY SEWER MAIN
- ROOF DRAIN
- SUB SURFACE DRAIN
- STORM SEWER MAIN
- GRADE BREAK LINE



W S N E

SCALE: 1" = 20'

0 10 20 40

811 Know what's below. Call before you dig.
Within Indiana Call 811 or 800-382-5544
24 Hours a Day, 7 Days a Week.
PER INDIANA STATE LAW IC 8-1-26. IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 fax
ALLAN H. WEIHE, P.E., L.S. - FOUNDER
WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.

PROJECT NO.: W22.0478
DWG NAME: C300 - GRADING PLAN
DESIGNED BY: SMB/AQ
DRAWN BY: SMB/AQ
CHECKED BY: EAC
DATE: 03/10/2023

DATE	BY	REVISIONS AND ISSUES

xx/xx/20xx

APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

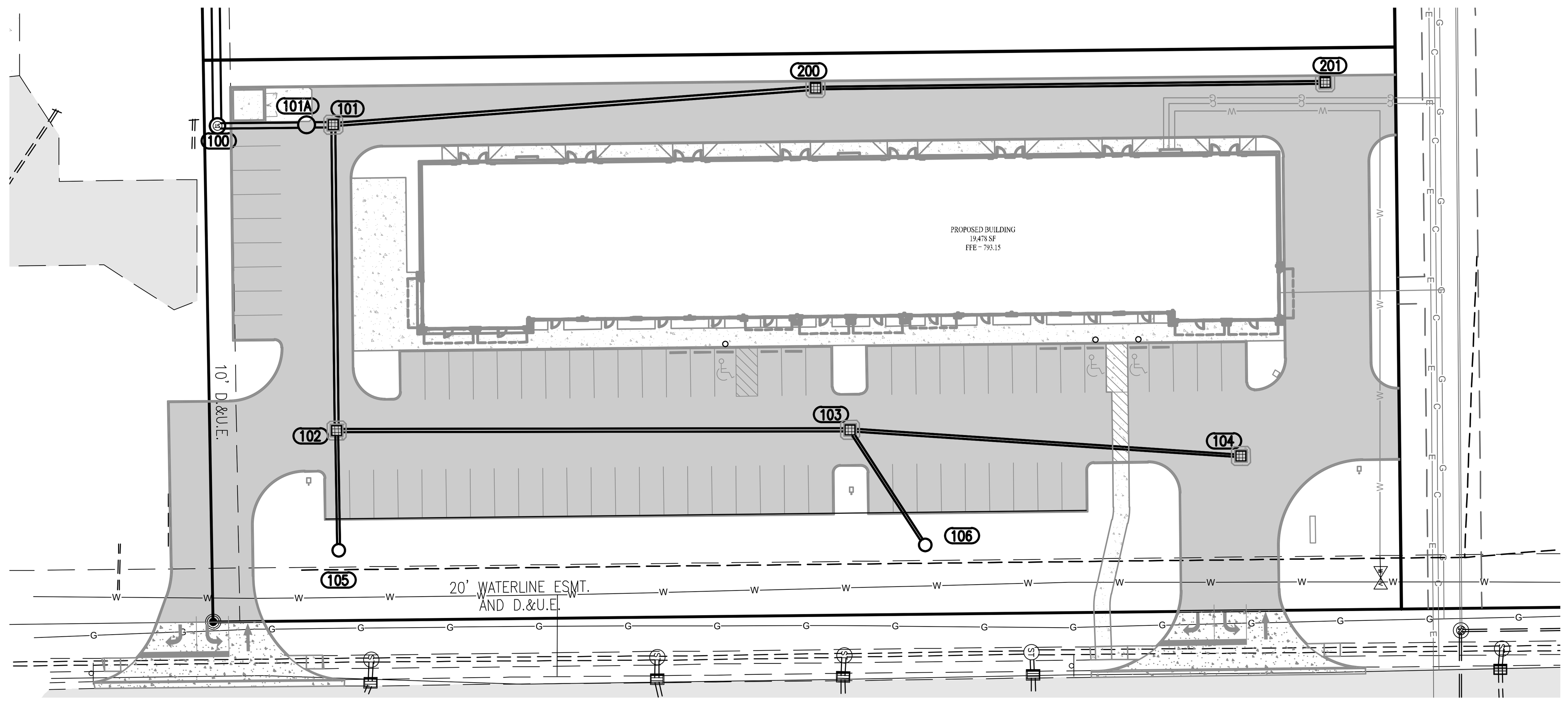
GRADING PLAN

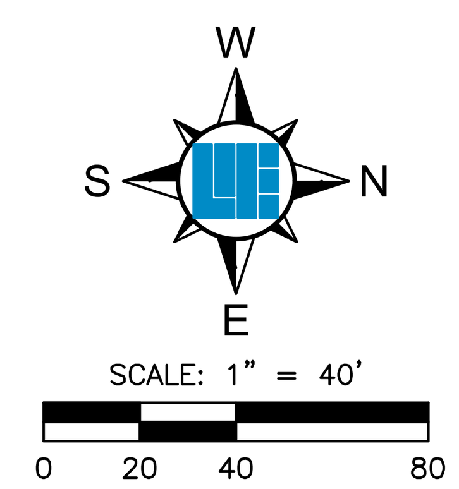
Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO. C300

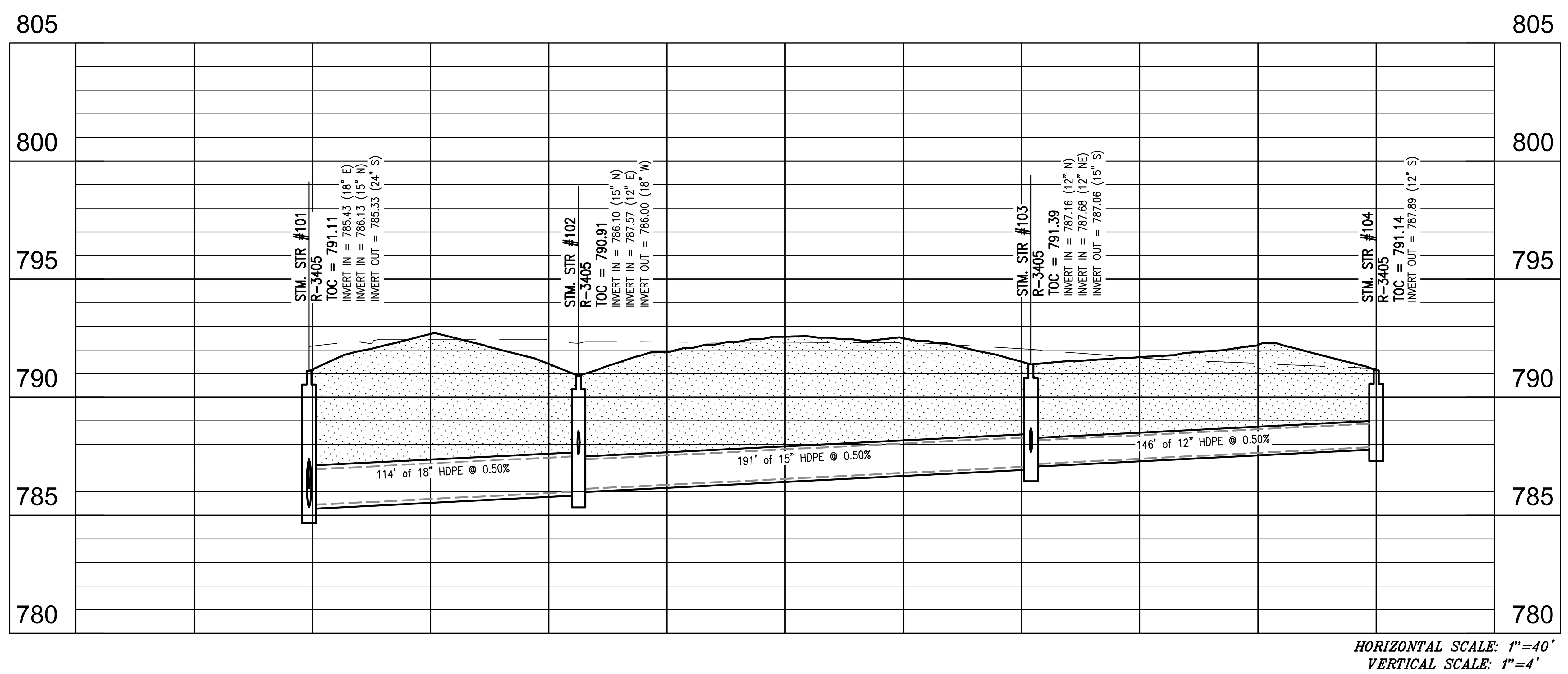
PROJECT NO. W22.0478

LOCATION: H:\2022\W220478\Engineering\design\conset\Block B\C300 - GRADING PLAN.dwg
LAYOUT: C300
DATE/TIME: April 10, 2023 - 4:58pm
PLOTTED BY: steuberm



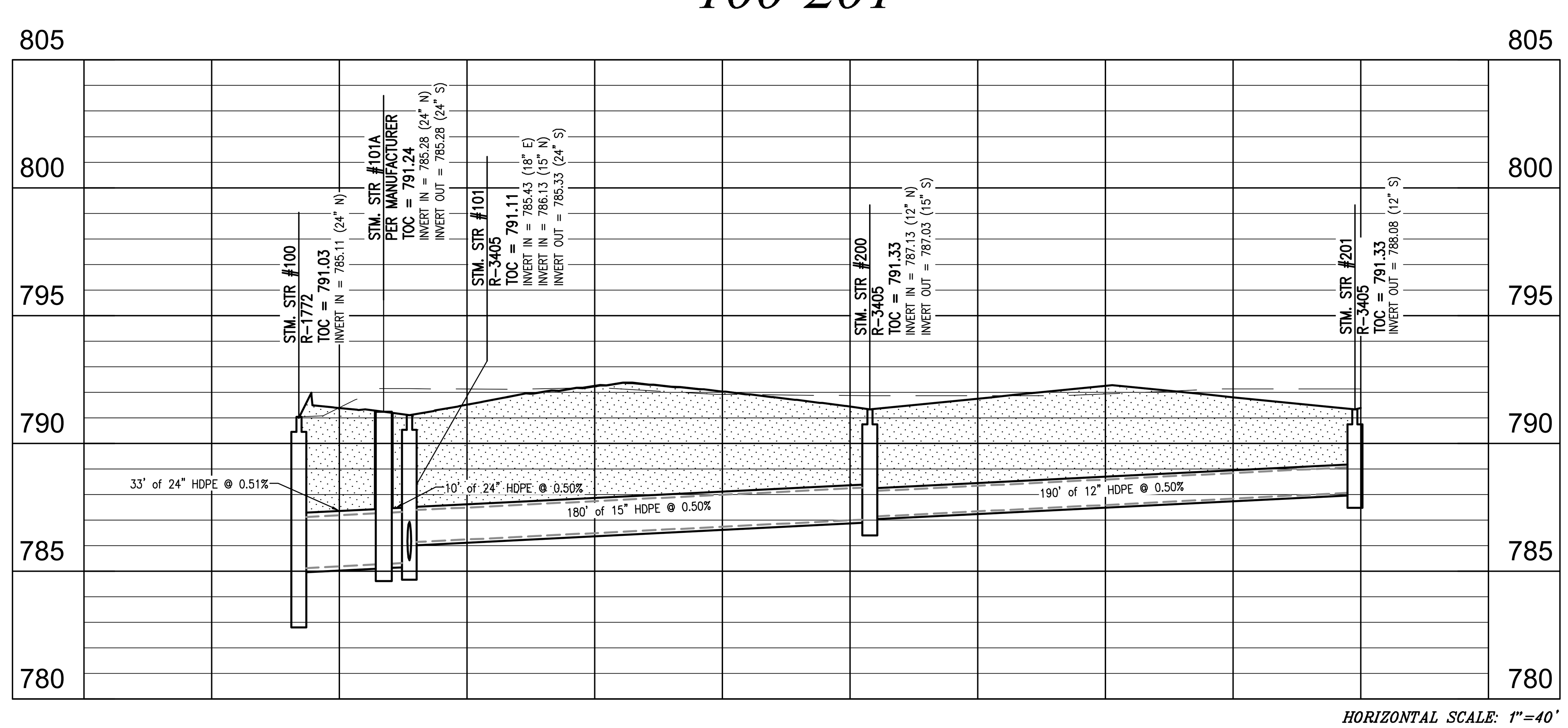


101-104



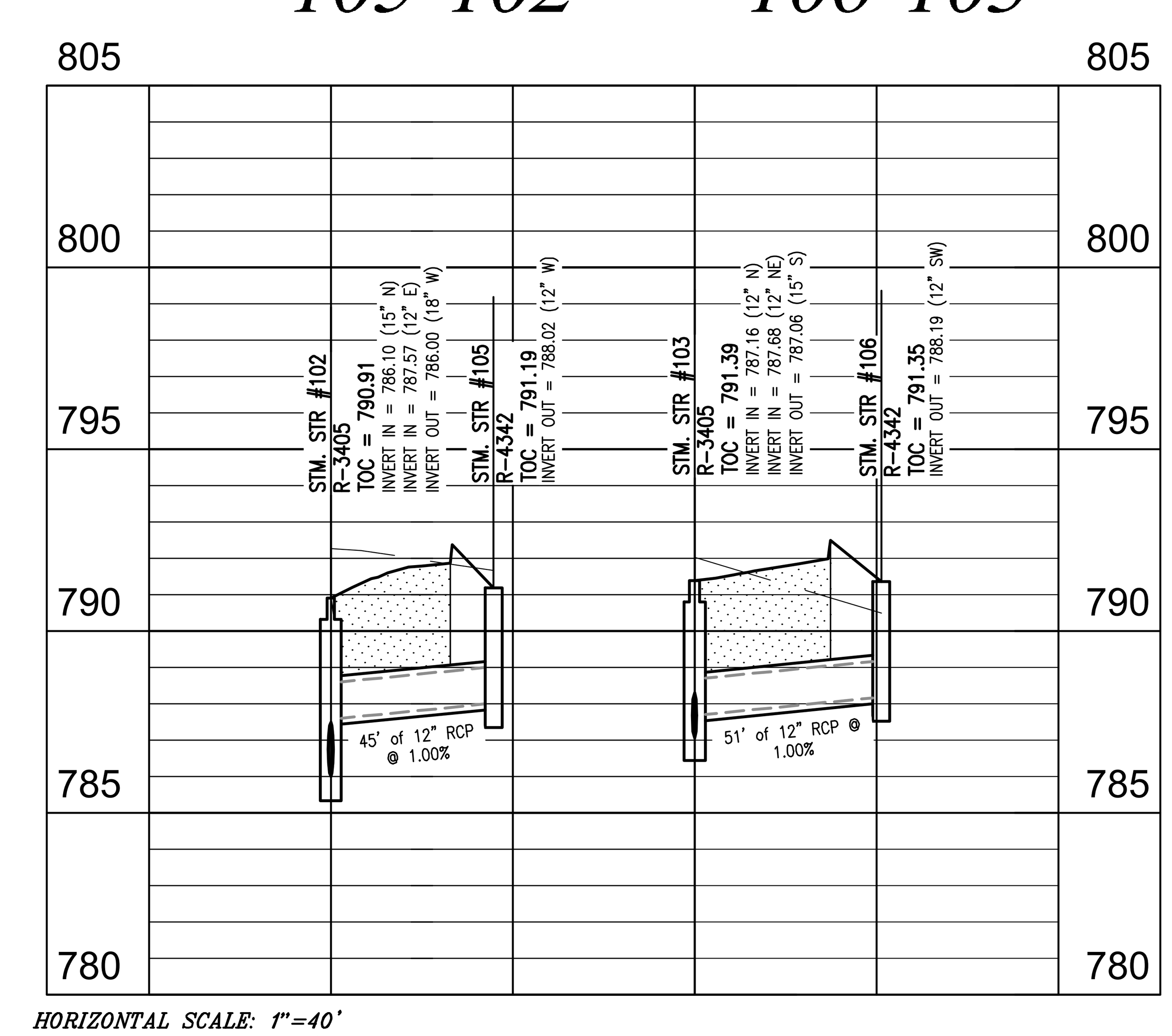
HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

100-201



HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

105-102 106-103



HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

STORM SEWER PLAN AND PROFILE LEGEND

UTILITIES

- REBAR FOUND
- PK OR MAG NAIL FOUND
- TEMPORARY BENCH MARK
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- FIRE DEPT HOOKUP
- WATER MANHOLE
- GAS METER
- GAS VALVE
- GAS PIPELINE MARKER
- UTILITY POLE
- GUY ANCHOR
- TRANSFORMER
- SANITARY SEWER MANHOLE
- FIBER OPTIC MARKER
- MAIL BOX
- BOLLARD
- SIGN
- COMMUNICATIONS PEDESTAL
- COMMUNICATIONS RISER
- CABLE TELEVISION PEDESTAL
- CURB INLET
- BEEHIVE INLET
- SQUARE INLET
- STORM MANHOLE
- MONITORING WELL

OTHER

- TC 818.74 GUT 818.24 CURB & GUTTER ELEVATION
- 818.64 PAVEMENT SPOT ELEVATION
- 819.1 GROUND SPOT ELEVATION
- +500.0 EXISTING SPOT ELEVATION
- EMERGENCY FLOOD ROUTE
- 2.0% FLOW DIRECTION AND SLOPE
- ACCESSIBLE SPACE
- 12 PARKING COUNT
- PARKING WHEEL STOP

ABBREVIATIONS

ROW	RIGHT OF WAY
ESMT	EASEMENT
D.&U.E.	DRAINAGE AND UTILITY EASEMENT
FFE	FINISH FLOOR ELEVATION
CMP	CORRUGATED METAL PIPE
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE PIPE
VCP	VITRIFIED CLAY PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
DIP	DUCTILE IRON PIPE
SSD	SUB SURFACE DRAIN PIPE
STM	STORM
SAN	SANITARY
STR	STRUCTURE
CO	CLEANOUT

LEGEND

- EXISTING GRADE
- FINISHED GRADE
- GRANULAR BACKFILL

STORM SEWER NOTES

1. THE CONTRACTOR SHALL ADHERE TO ALL TERMS AND CONDITIONS AS OUTLINED IN THE EPA OR APPLICABLE STATE GENERAL N.P.D.E.S. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND STORMWATER POLLUTION PREVENTION PLAN.
2. REFER TO THE INDIANA DEPARTMENT OF TRANSPORTATION (INDOT) STANDARD SPECIFICATIONS, LATEST EDITION, FOR BASIC MATERIALS AND CONSTRUCTION METHODS. THE SECTIONS BELOW FOR VARIOUS ITEMS ARE TO CLARIFY THE INTENT OF THE REQUIREMENTS FOR THIS PROJECT. PLEASE NOTE THAT OTHER SECTIONS OF THE INDOT STANDARD SPECIFICATIONS MAY ALSO BE APPLICABLE.
3. THE CONTRACTOR SHALL CONTACT APPLICABLE STATE UNDERGROUND LOCATION SERVICE AT LEAST 72 HOURS PRIOR TO ANY WORK AND SHALL CONTACT THE OWNER AND/OR ENGINEER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
4. THE PLANS SHOW THE LOCATION OF ALL KNOWN UTILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION 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.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES TO LOCATE MAINS, CONDUITS, SERVICE LINES, ETC. WITHIN THE CONSTRUCTION LIMITS. THE LOCATION AND PROTECTION OF UTILITY STRUCTURES, THEIR SUPPORT AND MAINTENANCE DURING CONSTRUCTION (IN COOPERATION WITH APPLICABLE UTILITY COMPANY) IS THE EXPRESSED RESPONSIBILITY OF THE CONTRACTOR.
6. THE CONTRACTOR SHALL CONTACT ALL APPLICABLE UTILITIES AND VERIFY ANY AND ALL FEES ASSOCIATED WITH THE INSTALLATION OF ALL UTILITIES.
7. ALL CONSTRUCTION ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH O.S.H.A. STANDARDS FOR WORKER SAFETY.
8. ANY PART OF STORM SEWER TRENCHES RUNNING UNDER OR WITHIN 5' OF PAVEMENT TO BE BACKFILLED WITH GRANULAR MATERIAL.
9. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY LOCATION, SIZE, AND ELEVATION OF EXISTING UTILITIES, STRUCTURES, PIPES, PAVEMENTS, ETC. AS RELATED TO THEIR WORK. NOTIFY ENGINEER OF ANY CONFLICT AND/OR DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS.
10. MAINTAIN 10' HORIZONTAL AND 18" VERTICAL CLEARANCE BETWEEN STORM / SANITARY SEWER SYSTEMS AND DOMESTIC/FIRE LINE SERVICE. SANITARY SEWER LINE IN PROXIMITY OF WATER LINE SHALL BE C900 WATER MAIN GRADE PVC.
11. CONTRACTOR TO INSTALL CONCRETE CRADLES WHEN THE VERTICAL SEPARATION (AS MEASURED FROM THE EXTERIOR OF THE PIPES) BETWEEN SANITARY SEWERS, WATER MAINS AND STORM SEWERS IS 18" OR LESS.
12. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
13. WHEN PERFORMING EXCAVATIONS DURING PERIODS OF WET WEATHER, PROVIDE ADEQUATE DEWATERING, DRAINAGE AND GROUND WATER MANAGEMENT TO CONTROL MOISTURE OF SOILS.
14. COMPACTED "B" BORROW BACK FILL REQUIRED OVER ALL UTILITIES IN PAVED AREAS.
15. ALL UTILITY STRUCTURES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING AND COVERS.
16. COORDINATE LOCATIONS AND CONNECTIONS OF BUILDING STORM LINES WITH PLUMBING DRAWINGS.
17. FOLLOW ALL LOCAL AND STATE CODES IN REFERENCE TO STORM SEWER INSTALLATION.
18. ALL EXISTING MANHOLE AND CATCH BASIN GRATES SHALL BE ADJUSTED TO NEW FINISH GRADE ELEVATIONS.
19. EXISTING PIPES WITHIN CONSTRUCTION LIMITS ARE TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
20. ALL STORM PIPE CONNECTIONS AT STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
21. ALL STORM SEWER STRUCTURES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING AND COVERS.
22. ALL STORM SEWER STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR CHANNEL FROM INVERT IN TO INVERT OUT.
23. NEW PIPES AND STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS PRIOR TO FINAL TURNOVER TO THE OWNER.
24. ALL HDPE PIPE SHALL BE DUAL WALLED, HANCOR HQ, ADS N-12 PIPE OR APPROVED EQUAL.
25. ALL FITTINGS AND ACCESSORIES INCLUDING BUT NOT LIMITED TO END CAPS, CLEANOUTS, REDUCERS, ETC., SHALL BE OF HDPE MATERIAL COMPARABLE WITH STORAGE PIPES.
26. PROVIDE BACKFILL WITH A MINIMUM OF 4" BEDDING MATERIAL OF #8 AGGREGATE COMPACTED IN 8" LIFTS TO 95% MAXIMUM DRY DENSITY.
27. VERIFY EXISTING STORM INVERT ELEVATIONS PRIOR TO STARTING NEW STORM SEWER CONNECTION.

LINE TYPES

- RIGHT OF WAY LINE
- FENCE
- GUARD RAIL
- BOUNDARY LINE
- FLOW LINE
- 500 INDEX CONTOUR
- 501 INTERMEDIATE CONTOUR
- G UNDERGROUND GAS
- W UNDERGROUND WATER
- E(A) AERIAL ELECTRIC
- E UNDERGROUND ELECTRIC
- C UNDERGROUND COMMUNICATIONS
- C(A) AERIAL COMMUNICATIONS
- FO UNDERGROUND FIBER OPTIC
- FO(A) AERIAL FIBER OPTIC CABLE
- OHU OVERHEAD UTILITY
- FM FORCE MAIN
- SAN SANITARY SEWER LATERAL
- SANITARY SEWER MAIN
- STM ROOF DRAIN
- SUB SURFACE DRAIN
- STORM SEWER MAIN

PAVEMENT

- STANDARD DUTY ASPHALT
- HEAVY DUTY ASPHALT
- CONCRETE PAVEMENT

811
Know what's **below.**
Call before you dig.
Within Indiana Call
811 or 800-382-5544
24 Hours a Day, 7 Days a Week.
PER INDIANA STATE LAW IC 8-1-26. IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*
ALLAN H. WEIHE, P.E., L.S. - FOUNDER
WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.℠

PROJECT NO.:	W22.0478
DWG NAME:	C600 - STORM PnP
DESIGNED BY:	SMB/AQ
DRAWN BY:	SMB/AQ
CHECKED BY:	EAC
DATE:	03/10/2023

REVISIONS AND ISSUES | DATE | BY

xx/xx/20xx

APPROVAL PENDING
NOT FOR CONSTRUCTION

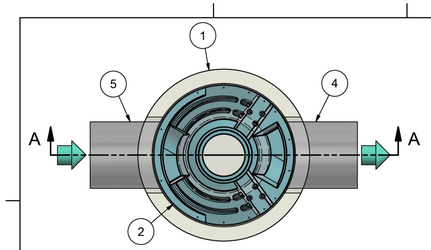
PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

STORM PLAN & PROFILE
Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO.
C601

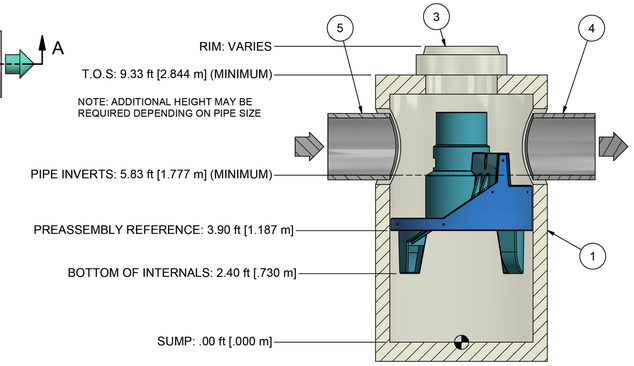
PROJECT NO.
W22.0478

LOCATION: H:\2022\W220478\Engineering\design\conset\Block B\C600 - STORM PnP.dwg
LAYOUT: C601
DATE/TIME: April 10, 2023 - 4:58pm
PLOTTED BY: steuberm



PLAN VIEW

HYDRO FRAME AND COVER (INCLUDED)
GRADE RINGS BY OTHERS AS REQUIRED



SECTION A-A

1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.

2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.

3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

PROJECTION

IF IN DOUBT ASK

DATE:	SCALE:
11/2/2021	1:30
DRAWN BY: ER	CHECKED BY: MRJ
APPROVED BY:	

Title:
5-ft DIAMETER
FIRST DEFENSE

GENERAL ARRANGEMENT

Hydro International
hydro-int.com
HYDRO INTERNATIONAL

WEIGHT:	MATERIAL:
STOCK NUMBER:	
DRAWING NO.: FD GA-5	
SHEET SIZE: B	SHEET: 1 OF 1
	Rev. -

PRODUCT SPECIFICATION:

1. Peak Hydraulic Flow: 20.0 cfs (566 l/s)
2. Min Sediment Storage Capacity: 1.1 cu. yd. (0.8 cu. m.)
3. Maximum Inlet/Outlet Pipe Diameters: 24 in. (600 mm)
4. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
5. For more product information including regulatory acceptances, please visit https://hydro-int.com/en/products/first-defense

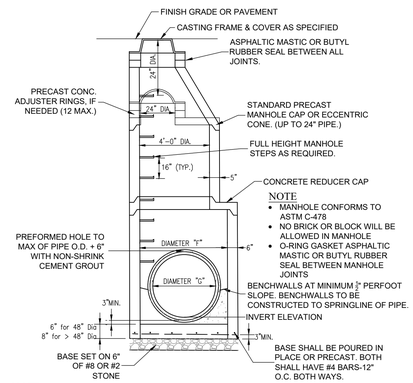
GENERAL NOTES:
1. General Arrangement drawings only. Contact Hydro International for site specific drawings.
2. The diameter of the inlet and outlet pipes may be no more than 24".
3. Multiple inlet pipes possible (refer to project plan).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plans).
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

PARTS LIST

ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	60	1500	I.D. PRECAST MANHOLE
2	1			INTERNAL COMPONENTS (PRE-INSTALLED)
3	1	30	750	FRAME AND COVER (ROUND)
4	1	24 (MAX)	600 (MAX)	OUTLET PIPE (BY OTHERS)
5	1	24 (MAX)	600 (MAX)	INLET PIPE (BY OTHERS)

PIPE SIZE (DIA. "G")	MANHOLE (DIA. "F") PIPES ENTERING/ LEAVING AT 0-45 DEGREES	MANHOLE (DIA. "F") PIPES ENTERING/ LEAVING AT 45-90 DEGREES	UP TO 60 DEGREES
12"-21"	48"	48"	N/A
24"	48"	60"	N/A
27"-30"	60"	60"	N/A
33"-36"	60"	72"	N/A
42"	72"	84"	N/A
48"	84"	96"	N/A
54"	N/A	N/A	96"
60"	N/A	N/A	96"
66"	N/A	N/A	96"

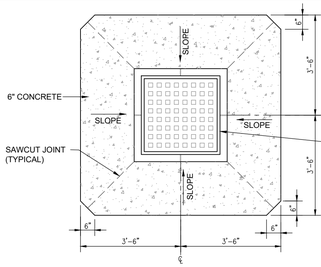
"DUMP NO WASTE-DRAINS TO WATERWAY"



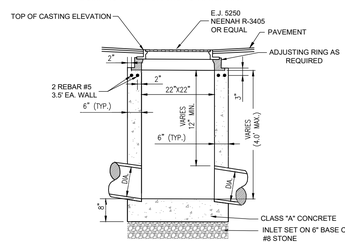
NOTE
MANHOLE STEPS SHALL BE POLYPROPYLENE, POLYPROPYLENE COATED STEEL REINFORCING OR AN APPROVED NON-CORROSIVE FIBERGLASS MATERIAL. THE COPOLYMER POLYPROPYLENE SHALL MEET THE REQUIREMENTS OF ASTM D-4101 REINFORCED WITH DEFORMED ¾" MIN. DIAMETER REINFORCED STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A-615, GRADE 60. NON-COATED CAST IRON STEPS ARE NOT ACCEPTABLE.

STANDARD STORM MANHOLE
(NO SCALE)

NOTE
- MANHOLE CONFORMS TO ASTM C-478
- NO BRICK OR BLOCK WILL BE ALLOWED IN MANHOLE
- O-RING GASKET ASPHALTIC MASTIC OR BUTYL RUBBER SEAL BETWEEN MANHOLE JOINTS



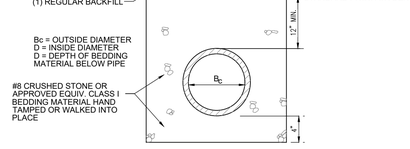
"DUMP NO WASTE-DRAINS TO WATERWAY"



SECTION

NOTES:
1. 6" CONCRETE PRECAST OR POURED IN PLACE
2. REFER TO BEDDING DETAIL AS REQUIRED
3. VAR. PIPE SIZE
   12" MAX STRAIGHT CONNECTIONS ONLY
4. PIPE CONNECTION TO BE SEALED WITH NON-SHRINK GROUT
5. REFER TO PRECAST CONCRETE ADJUSTING RING DETAIL AS REQUIRED

PAVED AREA INLET TYPE "A"
(NO SCALE)



NOTES:
1. ALL BEDDING & INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS
2. A MIN. 3" CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE

TYPICAL BEDDING SECTION - PVC & HDPE
(NO SCALE)

REQUIREMENTS FOR ALL STORM SEWER BENCHWALLS

BENCH WALLS SHALL BE SHAPED AND FORMED FOR A CLEAN TRANSITION WITH PROPER HYDRAULICS TO ALLOW THE SMOOTH CONVEYANCE OF FLOWS THROUGH THE MANHOLE OR BOX INLET. THE BENCH WALL SHALL FORM A DEFINED CHANNEL, TO A MINIMUM HEIGHT OF 80-PERCENT OF THE INSIDE DIAMETER OF THE INLET AND OUTLET PIPES TO FORM A "U" SHAPED CHANNEL, CONSTRUCTED AT A MINIMUM ½-INCH PER FOOT SLOPE TO THE MANHOLE WALL.

WHERE A FLOW CHANNEL IS CONSTRUCTED AS AN INTEGRAL PART OF THE PRE-CAST BASE, IT SHALL BE SHAPED AND FORMED AS DESCRIBED ABOVE, WITH THE EXCEPTION THAT THE BOTTOM OF THE FLOW CHANNEL MAY BE FORMED FROM THE BOTTOM OF INLET AND OUTLET PIPES IF THE PIPE WALL THICKNESS IS NOT GREATER THAN ONE (1) INCH.

FOR CAST-IN-PLACE FLOW CHANNELS, THE BOTTOM INVERT OF ALL PIPES ENTERING A MANHOLE SHALL BE AT LEAST THREE (3) INCHES ABOVE THE TOP OF THE BASE SLAB TO THE OUTLET INVERT SO THE FINISHED SEWER CHANNEL MAY BE INSTALLED AND SHAPED.
FOR CONNECTIONS TO EXISTING STORM SEWER STRUCTURES, FLOW CHANNELS SHALL BE SHAPED, AS SPECIFIED HEREIN, AS IF IT WERE A NEW MANHOLE OR BOX INLET STRUCTURE.

SPECIFICATIONS FOR ALL STORM SEWER CASTINGS

ALL STORM WATER INLETS AND CATCH BASINS SHALL HAVE THE WORDS "NO DUMPING, DRAINS TO STREAM", OR SIMILARLY APPROVED MESSAGE, CAST IN RAISED OR RECESSED LETTERS AT A MINIMUM OF 1" IN HEIGHT. IN ADDITION, A SYMBOL OF A FISH SHALL ALSO BE CAST WITH THE LETTERS.

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net

317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*

ALLAN H. WEIHE, P.E., L.S. - FOUNDER

WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.™

PROJECT NO.:	W22.0478
DWG NAME:	C602 - STORM DETAILS
DESIGNED BY:	SMB/AQ
DRAWN BY:	SMB/AQ
CHECKED BY:	EAC
DATE:	03/10/2023

REVISIONS AND ISSUES	DATE
	xx/xx/20xx

APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

STORM DETAILS
Block B on Shelbyville Marketplace, Part of the NE¼ of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO.
C602

PROJECT NO.
W22.0478

LOCATION: R:\2021\W22.0478\Engineering\Layout\Block B\C602 - STORM DETAILS.dwg
LAYOUT: C602
DATE/TIME: April 10, 2023 - 4:58pm
PLOTTED BY: Allan Weiheim

UTILITY PLAN LEGEND

UTILITIES

- REBAR FOUND
- PK OR MAG NAIL FOUND
- TEMPORARY BENCH MARK
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- FIRE DEPT HOOKUP
- WATER MANHOLE
- GAS METER
- GAS VALVE
- GAS PIPELINE MARKER
- UTILITY POLE
- GUY ANCHOR
- TRANSFORMER
- SANITARY SEWER MANHOLE
- FIBER OPTIC MARKER
- MAIL BOX
- BOLLARD
- SIGN
- COMMUNICATIONS PEDESTAL
- COMMUNICATIONS RISER
- CABLE TELEVISION PEDESTAL
- CURB INLET
- BEEHIVE INLET
- SQUARE INLET
- STORM MANHOLE
- MONITORING WELL

OTHER

- TC 818.74 / GUT 818.24 CURB & GUTTER ELEVATION
- 818.64 PAVEMENT SPOT ELEVATION
- 819.1 GROUND SPOT ELEVATION
- +500.0 EXISTING SPOT ELEVATION
- EMERGENCY FLOOD ROUTE
- 2.0% FLOW DIRECTION AND SLOPE
- ACCESSIBLE SPACE
- 12 PARKING COUNT
- PARKING WHEEL STOP

ABBREVIATIONS

ROW	RIGHT OF WAY
ESMT	EASEMENT
D.&U.E.	DRAINAGE AND UTILITY EASEMENT
FFE	FINISH FLOOR ELEVATION
CMP	CORRUGATED METAL PIPE
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE PIPE
VCP	VITRIFIED CLAY PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
DIP	DUCTILE IRON PIPE
SSD	SUB SURFACE DRAIN PIPE
STM	STORM
SAN	SANITARY
STR	STRUCTURE
CO	CLEANOUT

NOTE: UNTIL GAS AND ELECTRIC LOADS ARE AVAILABLE, LOCATION OF GAS AND ELECTRIC ARE APPROXIMATE AND WILL BE ADJUSTED BASED ON UTILITY DESIGN IN THE FUTURE.

NOTE: AT THE TIME OF SUBMITTAL, NO MEP PLANS WERE AVAILABLE.

UTILITY PLAN NOTES

SANITARY SEWER NOTES

- SS1 CONNECT PROPOSED 6" SANITARY SEWER LATERAL TO EXISTING SANITARY SEWER MAIN. COORDINATE CONNECTION WITH MEP. PROVIDE CLEANOUTS AS REQUIRED/SHOWN. VERIFY INVERTS ON EXISTING LINE AND COORDINATE CONDITIONS WITH MEP. ADJUST AS REQUIRED.
- SS2 EXISTING 8" SANITARY SEWER.
- SS3 PROPOSED SANITARY LATERAL CLEANOUT TYPE 1 (IN LANDSCAPE AREAS WITHIN 3' OF BUILDING). REFER TO DETAIL ON SHEET C801.
- SS4 PROPOSED SANITARY LATERAL CLEANOUT TYPE 2 (IN PAVED AREAS OUTSIDE OF 3' OF BUILDING). REFER TO DETAIL ON SHEET C801.
- SS5 PROPOSED SANITARY LATERAL CLEANOUT TYPE 3 (IN NON-PAVED AREAS ONLY). REFER TO DETAIL ON SHEET C801.
- SS6 PROVIDE 18" MINIMUM VERTICAL CLEARANCE BETWEEN SANITARY/WATER/STORM SEWER PIPES AND ALL OTHER PIPES. INSTALL CONCRETE CRADLE IF CLEARANCE IS LESS THAN 18"

WATER SERVICE NOTES:

- W1 COORDINATE AND CONNECT 2" WATER SERVICE LINE TO EXISTING 12" WATER MAIN
- W2 COORDINATE CONNECTION OF DOMESTIC SERVICE LINE WITH PLUMBING DRAWINGS.
- W3 COORDINATE LOCATION AND CONNECTION OF DOMESTIC METER WITH LOCAL SERVICE PROVIDER. [1 1/2" WATER METER SET W/ BACKFLOW PREVENTION INSIDE THE BUILDING ANTICIPATED].
- W4 PROPOSED 2" PE DOMESTIC SERVICE LINE

ELECTRIC NOTES:

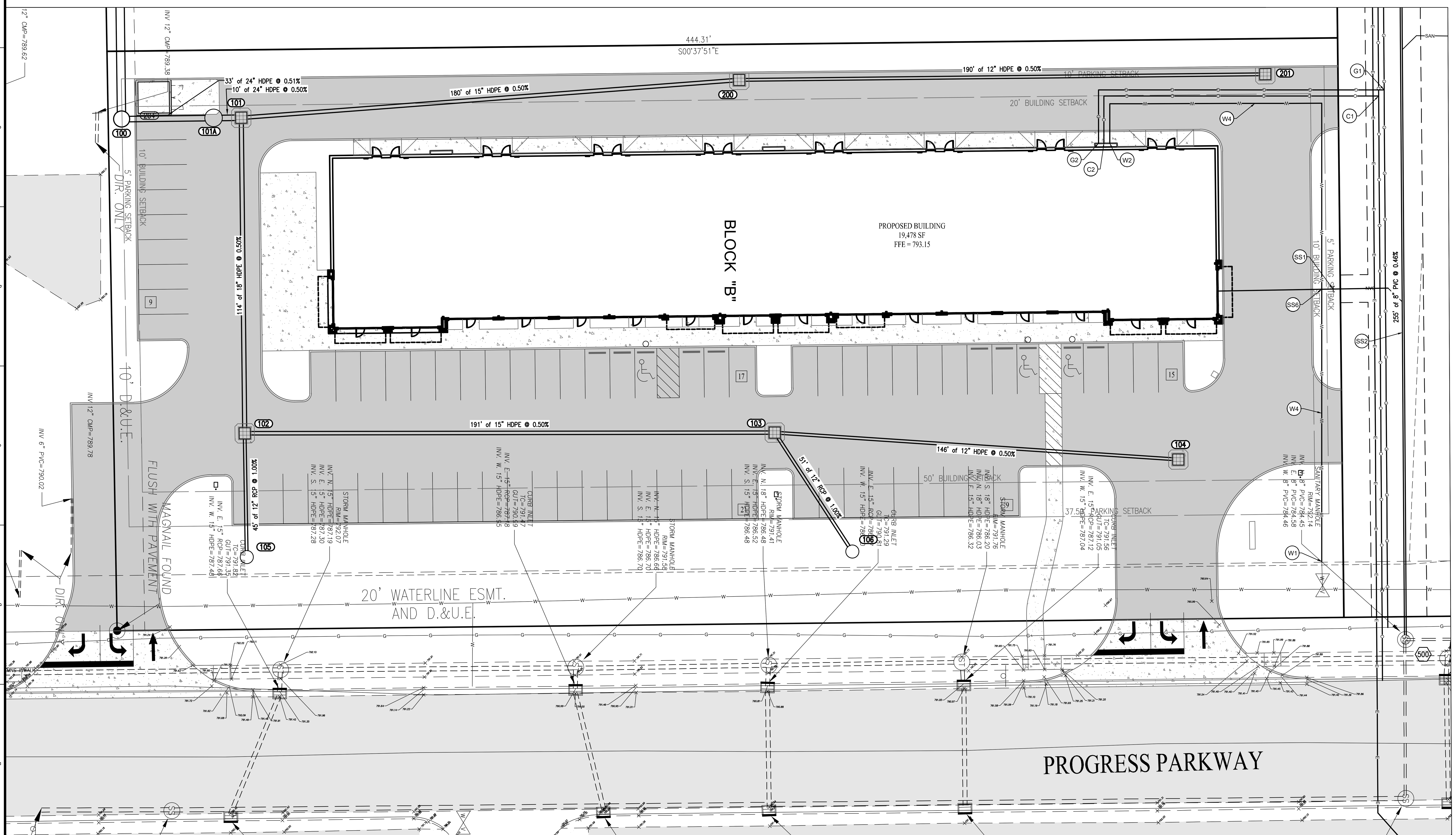
- E1 COORDINATE AND CONNECT BUILDING ELECTRICAL LINE FROM SERVICE DROP LOCATION TO TRANSFORMER. COORDINATE CONNECTION WITH POWER COMPANY AND ELECTRICAL DRAWINGS. ADJUST AS REQUIRED.
- E2 PROPOSED TRANSFORMER PAD LOCATION. COORDINATE WITH UTILITY PROVIDER IF A NEW TRANSFORMER IS REQUIRED.
- E3 BUILDING ELECTRICAL LINE POINT OF CONNECTION. COORDINATE CONNECTION WITH POWER COMPANY AND ELECTRICAL DRAWINGS. ADJUST AS REQUIRED.

COMMUNICATION NOTES:

- C1 COORDINATE AND CONNECT BUILDING COMMUNICATION SERVICE LINE(S) TO CONNECTION POINT AS SHOWN. ADJUST AS REQUIRED. 4" PVC CONDUIT TO BE INSTALLED WITH PULL STRINGS.
- C2 COORDINATE CONNECTION WITH SITE DRAWINGS AND SERVICE PROVIDER.

GAS SERVICE NOTES:

- G1 CONNECT PROPOSED GAS SERVICE TO EXISTING GAS LINE. REFER TO PLUMBING DRAWINGS AND COORDINATE WITH SERVICE PROVIDER.
- G2 PROPOSED GAS METER LOCATION. REFER TO PLUMBING DRAWINGS AND COORDINATE WITH SERVICE PROVIDER.



PAVEMENT

- STANDARD DUTY ASPHALT
- HEAVY DUTY ASPHALT
- CONCRETE PAVEMENT

LINE TYPES

- SAN — SANITARY SEWER LATERAL
- SANITARY SEWER MAIN
- FM — FORCE MAIN
- W — UNDERGROUND WATER
- E(A) — AERIAL ELECTRIC
- E — UNDERGROUND ELECTRIC
- OHU — OVERHEAD UTILITY
- C — UNDERGROUND COMMUNICATIONS
- C(A) — AERIAL COMMUNICATIONS
- FO — UNDERGROUND FIBER OPTIC
- FO(A) — AERIAL FIBER OPTIC CABLE
- G — UNDERGROUND GAS
- STORM SEWER MAIN
- STM — ROOF DRAIN
- SUB SURFACE DRAIN
- FLOW LINE
- RIGHT OF WAY LINE
- FENCE
- GUARD RAIL
- BOUNDARY LINE

SCALE: 1" = 20'

0 10 20 40

Know what's **below.** **Call** before you dig.

Within Indiana Call
811 or 800-382-5544
24 Hours a Day, 7 Days a Week.

PER INDIANA STATE LAW IC 8-1-26. IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*
ALLAN H. WEIHE, P.E., L.S. - FOUNDER
WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.

PROJECT NO.:	W22.0478
DWG NAME:	C800 - UTILITY PLAN
DESIGNED BY:	SMB/AQ
DRAWN BY:	SMB/AQ
CHECKED BY:	EAC
DATE:	03/10/2023

DATE	BY	REVISIONS AND ISSUES

xx/xx/20xx

APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:

SHELBYVILLE MARKETPLACE - RETAIL

2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

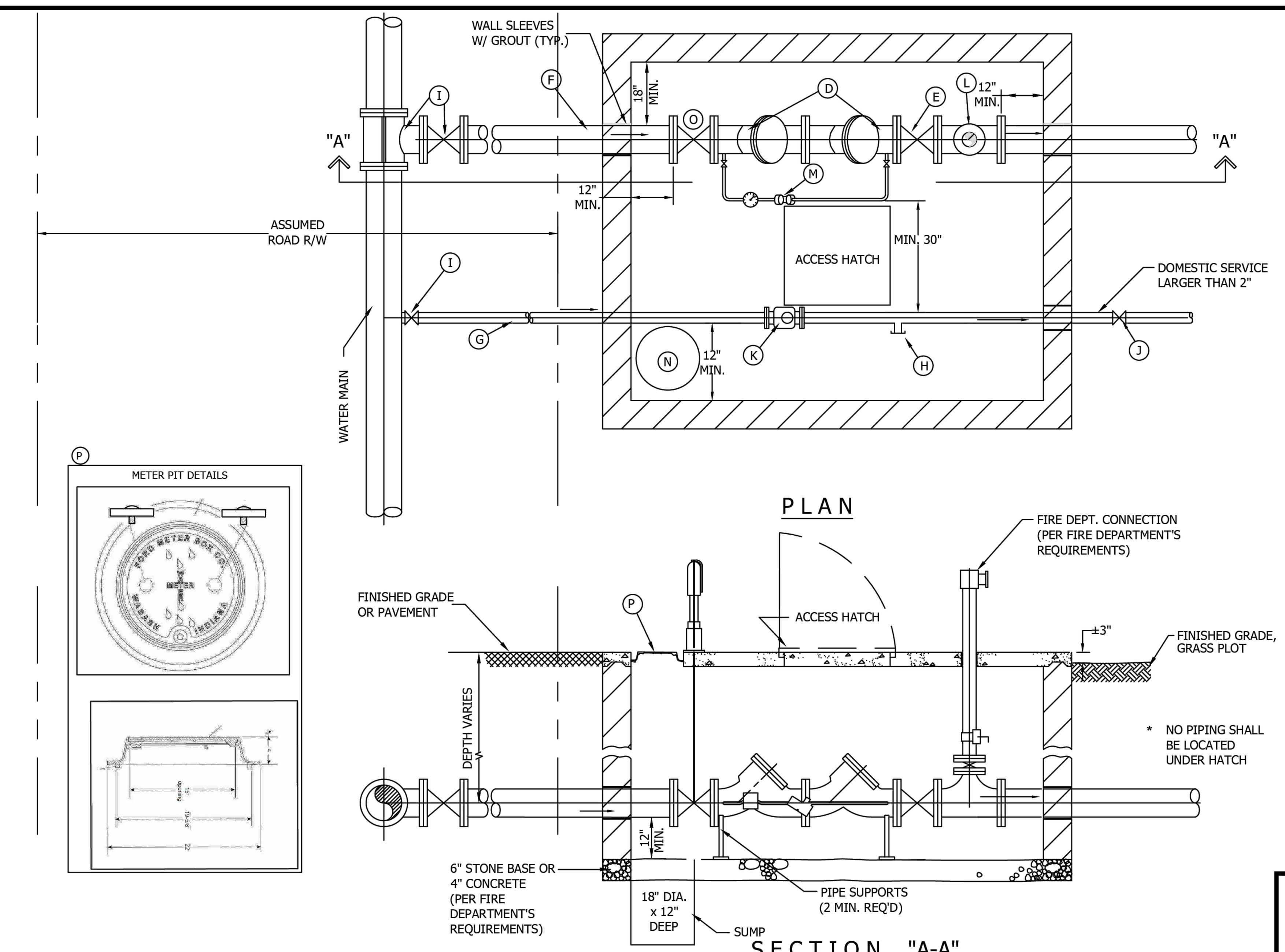
UTILITY PLAN

Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO. C800

PROJECT NO. W22.0478

LOCATION: H:\2022\W220478\Engineering\design\conset\Block B\C800 - UTILITY PLAN.dwg
LAYOUT: C800
DATE/TIME: April 10, 2023 - 4:59pm
PLOTTED BY: steuberm



NOTES:

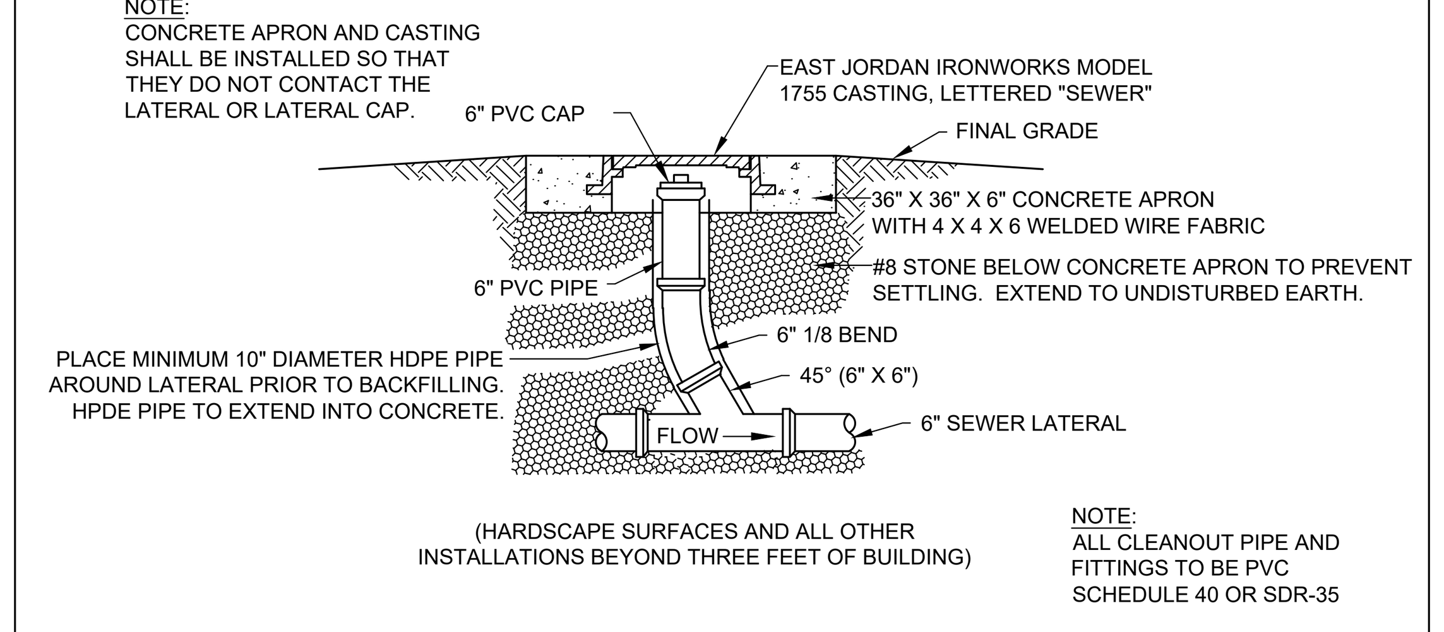
1. CUSTOMER SHALL FURNISH & INSTALL VAULT, INCLUDING ALL APPERTENCES EXCEPT AS NOTED BELOW.
2. VAULT CONSTRUCTION MATERIALS SHALL BE 8"x8"x16" CMU, OR PRECAST, OR CAST-IN-PLACE CONCRETE AT CUSTOMER'S SELECTION.
3. INSIDE DIMENSIONS PER DRAWING NOTES. VAULT TO BE SET LENGTHWISE WITH SERVICE.
4. TOP OF VAULT TO BE CONCRETE, AT LEAST 4" THICK WITH REINFORCING SUITABLE FOR ANTICIPATED LOADING. WHEN VAULT IS CONSTRUCTED IN PAVED AREAS, PAVEMENT IS TO BE LEVEL WITH TOP OF VAULT, AND THE TOP REINFORCED AS REQUIRED TO SUPPORT TRAFFIC LOADS (i.e. H-20 WHEEL LOADS). WHEN VAULT IS CONSTRUCTED IN GRASS PLOT, TOP OF VAULT SHALL BE 3" ABOVE FINISHED GRADE.
5. BOTTOM OF VAULT TO BE EITHER A MINIMUM OF 6" OF CRUSHED STONE OR 4" CONCRETE PER FIRE DEPARTMENT'S REQUIREMENT. MINIMUM CLEARANCE OF 12" BELOW BOTTOM OF FIRE SERVICE AND DOMESTIC SERVICE LINES IS REQUIRED.
6. DOUBLE CHECK DETECTOR ASSEMBLY SHALL BE A MODEL APPROVED BY THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, WITH FLANGED OS&Y GATE VALVE ON INLET & OUTLET SIDES. DETECTOR METER IS FURNISHED BY UTILITY AND INSTALLED BY CUSTOMER. STAINLESS STEEL BOLTS ARE REQUIRED.
7. ACCESS HATCH IN TOP OF VAULT SHALL BE 30"x30" ALUMINUM BILCO J-2AL, BILCO PCM-2, HALLIDAY W1S3030 OR EQUAL. ACCESS HATCH SHALL HAVE SAME OR GREATER LOADING CAPACITY AS VAULT LID. PIPE HATCH FRAME DRAIN TO VAULT FLOOR OR SUMP, AS APPLICABLE. IF THE LOCAL FIRE DEPARTMENT REQUIRES A SUMP PUMP IN THE VAULT, ELECTRICAL DISCONNECT IS REQUIRED ON TOP OF VAULT, INSTALLED ABOVE GRADE, PER LOCAL ELECTRICAL CODE.
8. A COMBINATION VAULT CAN BE USED ONLY IF METER IS LARGER THAN 2".
   a. METERS TO BE LOCATED A MAXIMUM 18" FROM HINGE SIDE OF HATCH.
   b. A 2" TEST PLUG SHALL BE INSTALLED AT LEAST 2 PIPE DIAMETERS DOWNSTREAM OF 3" OR LARGER METERS.
9. AS DIRECTED BY LOCAL OPERATIONS, ADDITIONAL PIPE SUPPORTS MAY BE REQUIRED.
10. THE LID AND RING THAT WILL BE REQUIRED IS FORD A53-TT OR FORD A53-T. THE A53-TT WILL BE USED FOR ALL VAULTS WITH THE DOMESTIC METER INSIDE. THE A53-T WITH BE USED FOR ALL VAULTS WITH THE DCDA ONLY LOCATED INSIDE THE VAULT.

LEGEND

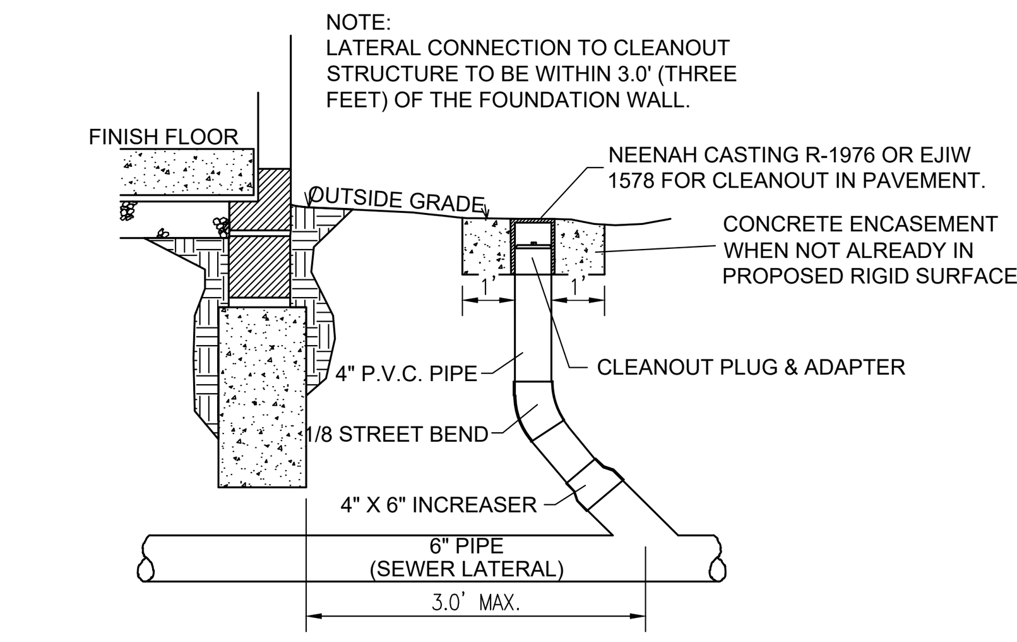
(A)	NOT USED
(B)	NOT USED
(C)	NOT USED
(D)	DOUBLE CHECK DETECTOR ASSEMBLY
(E)	FLANGED OS & Y VALVE
(F)	FIRE LINE
(G)	DOMESTIC SERVICE (SEE NOTE 8)
(H)	2" TEST PLUG (SEE NOTE 8)
(I)	TAPPING SLEEVE W/ TAPPING VALVE & BOX (COORDINATE W/ LOCAL UTILITY SUPERINTENDENT/MANAGER)
(J)	RJDI GATE VALVE
(K)	DOMESTIC SERVICE METER (SEE NOTE 8)
(L)	FLANGED TEE
(M)	DETECTOR METER (SEE NOTE 8)
(N)	SUMP PIT
(O)	FLANGED OS&Y VALVE WITH PIT TYPE POST INDICATOR
(P)	SUMP PUMP LID

INDIANA AMERICAN WATER

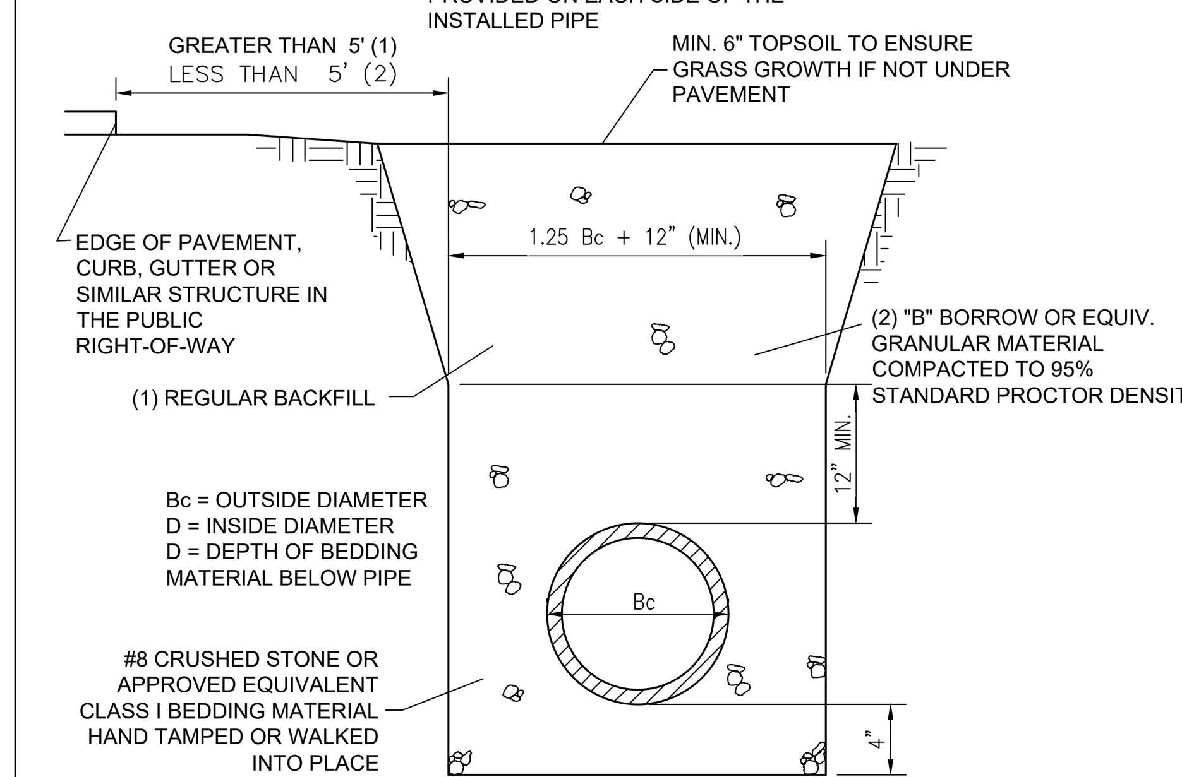
SCALE: NO SCALE	SHORT SIDE VAULT DETAIL
REVISIONS	STANDARD FOR COMBINED FIRE SERVICE & METER VAULT FOR 3" AND LARGER SINGLE METER CONFIGURATION
DRAWN BY: R.K.B. / DATE: 2/2017 / CHECKED: A.C. / APPROVED:	1 of 1
AUTOCAD FILE: FS-M-V-single larger than 2-short long side.DWG	



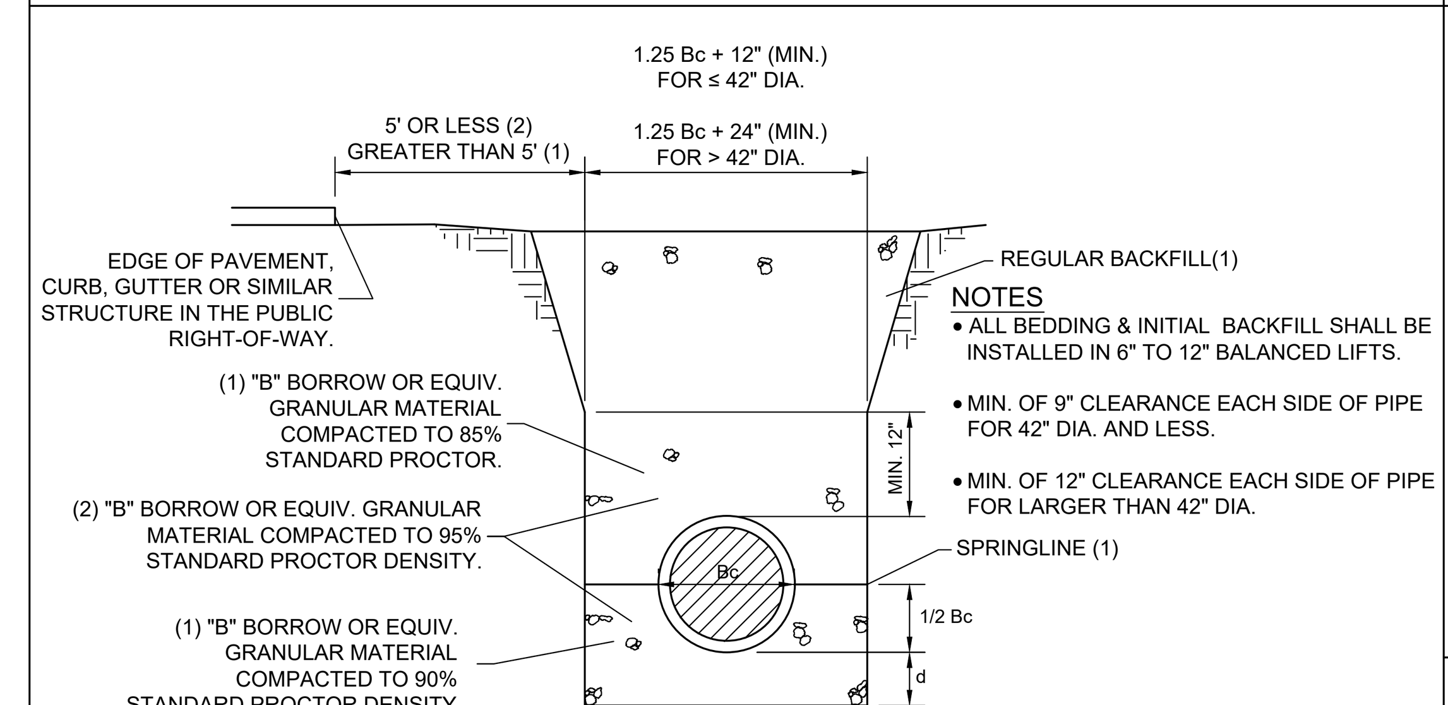
TYPICAL CLEANOUT SECTION
TYPE 2 (NO SCALE)



TYPICAL CLEANOUT SECTION
TYPE I (NO SCALE)



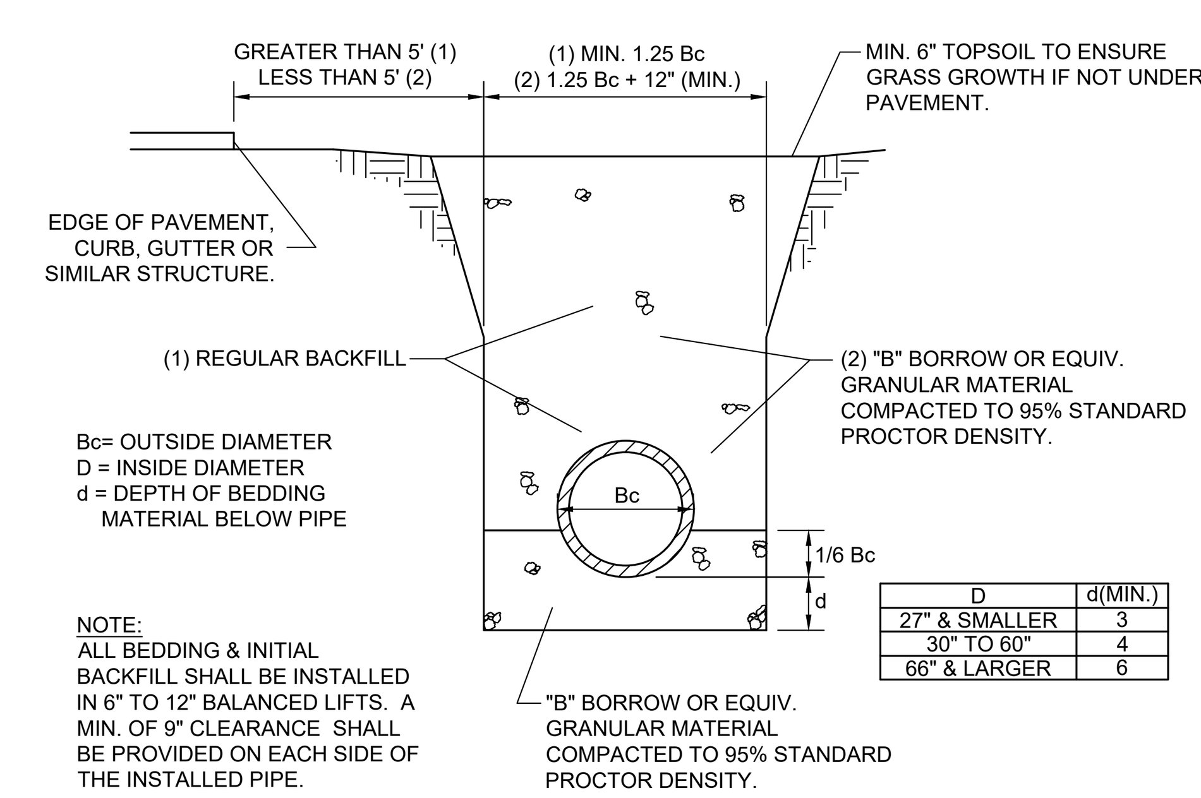
TYPICAL BEDDING SECTION - PVC & HDPE
(NO SCALE)



D	d(MIN.)
27" & SMALLER	3
30" TO 60"	4
66" & LARGER	6

Bc= OUTSIDE DIAMETER
D = INSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE

TYP. BEDDING SECTION - CMP
(NO SCALE)

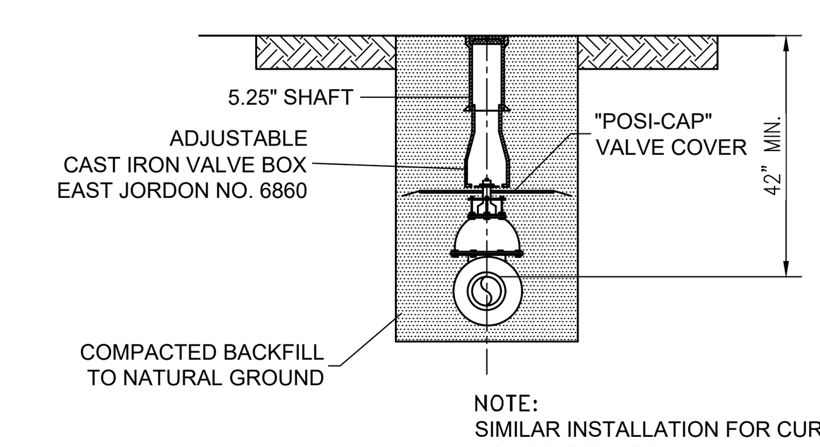


Bc= OUTSIDE DIAMETER
D = INSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE

D	d(MIN.)
27" & SMALLER	3
30" TO 60"	4
66" & LARGER	6

NOTE:
ALL BEDDING & INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS. A MIN. OF 9" CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE.

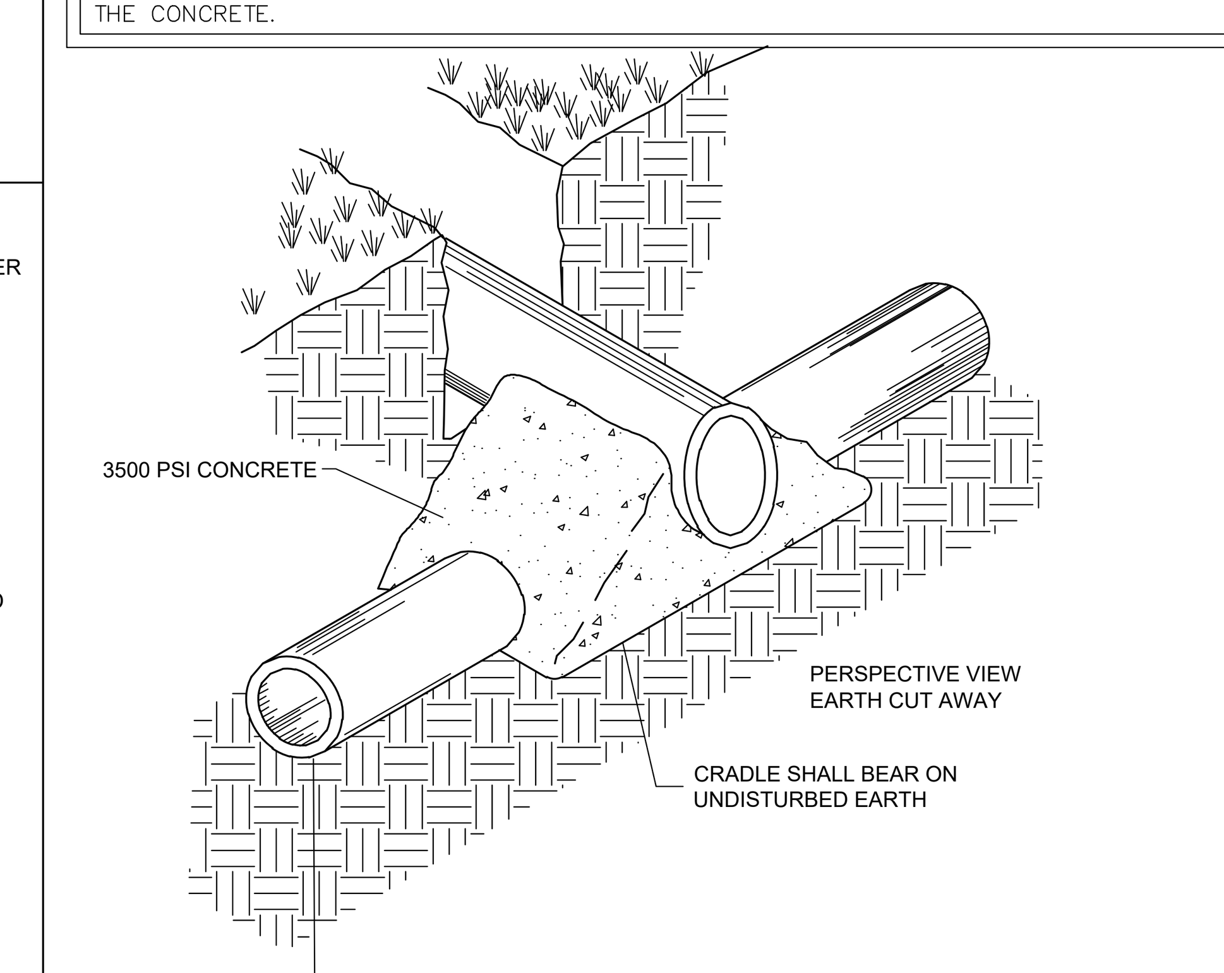
TYPICAL BEDDING SECTION - RCP PIPE
(NO SCALE)



NOTE:
SIMILAR INSTALLATION FOR CURB BOX OR SERVICE LINE

TYPICAL VALVE BOX INSTALLATION
(NO SCALE)

NOTE: TO BE USED WHEN CLEAR DISTANCE (FROM EXTERIOR PIPE DIAMETER TO EXTERIOR PIPE DIAMETER) BETWEEN SANITARY SEWER PIPING (MAINS, LATERALS, FORCE MAINS, ETC.) AND ALL OTHER PIPES IS 18" OR LESS, PER INSPECTOR'S DIRECTION, OR WHERE NOTED ON THE DRAWINGS. A MINIMUM CLEAR DISTANCE OF 3" MUST BE PROVIDED TO MAINTAIN STRUCTURAL INTEGRITY OF THE CONCRETE.



CONCRETE CRADLE DETAIL
(NO SCALE)

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*
ALLAN H. WEIHE, P.E., L.S. - FOUNDER
WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.

PROJECT NO.: W22.0478
DWG NAME: C801 - UTILITY DETAILS
DESIGNED BY: SMB/AQ
DRAWN BY: SMB/AQ
CHECKED BY: EAC
DATE: 03/10/2023

DATE	BY	REVISIONS AND ISSUES

xx/xx/20xx

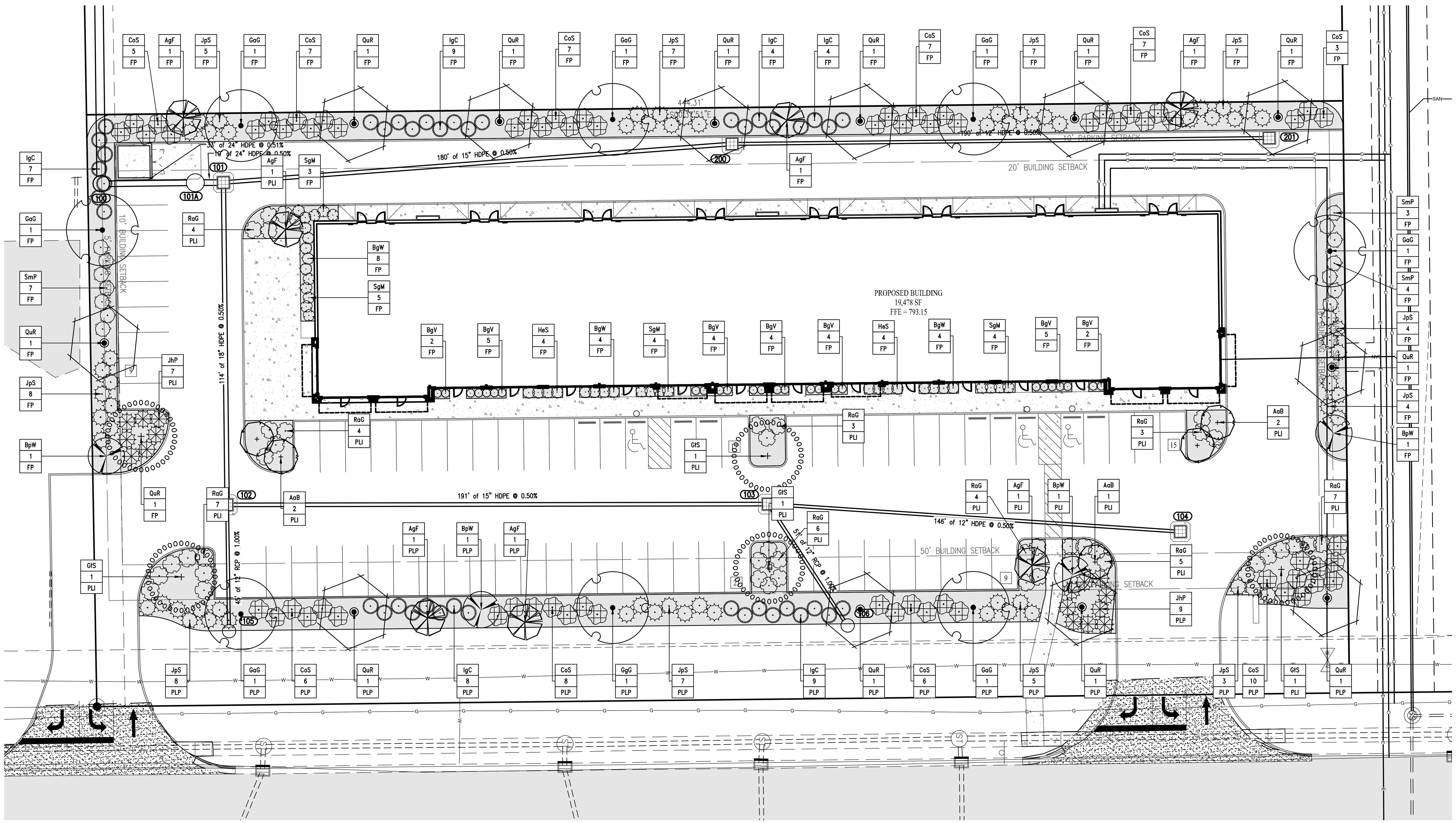
APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

UTILITY DETAILS
Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO.
C801

PROJECT NO.
W22.0478



LANDSCAPE PLAN NOTES

GtS — PLANT NAME
1 — QUANTITY
P1 — PLANTING AREA

LANDSCAPE LEGEND

MULCHED LANDSCAPE BEDS

PLANT SCHEDULE

PLAN KEY	BOTANICAL NAME	COMMON NAME	SIZE	QTY.	B&B	CONT.	MATURE SIZE	SPECIAL INSTRUCTIONS
	CANOPY DECIDUOUS TREES							
GaG	GINKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD GINKGO	2" cal.	7	X		45'T x 30'W	
GtS	GLEDITSIA TRIACANTHOS INERMIS 'SKYLINE'	SKYLINE HONEYLOCUST	2" cal.	5	X		45'T x 35'W	
QuR	QUERCUS RUBRUM	RED OAK	2" cal.	12	X		60'T x 60'W	
	ORNAMENTAL TREES							
AgF	ACER GINNALA 'FLAME'	AMUR MAPLE	6' hgt.	8	X		15'T x 15'W	MULTI-STEM
AaB	AMELANCHIER GRANDIFLORA 'AUTUM BRILLIANCE'	AUTUMN BRILLIANCE APPLE SERVICE BERRY	6' hgt.	5	X		20'T x 20'W	MULTI-STEM
BpW	BETULA POPULIFOLIA 'WHITESPIRE'	WHITESPIRE GRAY BIRCH	6' hgt.	4	X		40'T x 20'W	MULTI-STEM
	DECIDUOUS SHRUBS							
CoS	CORNUS SERICEA	REDOSIER DOGWOOD	#5	65		X	7'T x 10'W	24" Hgt. Min.
HeS	HYDRANGEA MACROPHYLLA 'ENDLESS SUMMER'	ENDLESS SUMMER HYDRANGEA	#5	8		X	4'T x 4'W	24" Hgt. Min.
RaG	RHUS AROMATICA 'GROW-LOW'	GRO-LOW FRAGRANT SUMAC	#5	43		X	2'T x 8'W	24" Hgt. Min.
SgM	SPIRAEA X 'GOLD MOUND'	GOLD MOUND SPIREA	#5	16		X	3'T x 4'W	24" Hgt. Min.
SmP	SYRINGA MEYERI 'PALABIN'	DWARF KOREAN LILAC	#5	14		X	5'T x 7'W	24" Hgt. Min.

LANDSCAPE ORDINANCE REQUIREMENTS

	REQUIREMENT:	REQUIRED:	PROVIDED:
FP	ARTICLE 5/LANDSCAPE STANDARDS/5.32/LA-02:NON-RESIDENTIAL LANDSCAPING STANDARDS/A/1/FOUNDATION PLANTINGS: - FACADE IS MORE THAN 80' IN OVERALL LENGTH - FRONT FACADE (320 LF): (1 SHRUBS OR ORNAMENTAL TREES PER EVERY 5' OF OVERALL LENGTH) - SIDE & REAR FACADES (440 LF): (1 SHRUBS OR ORNAMENTAL TREES PER EVERY 10' OF OVERALL LENGTH) -MINIMUM 30% SHRUBS & 50% ORNAMENTAL TREES	- FRONT FACADE = 64 ORNAMENTAL TREES OR SHRUBS (MIN. 32 ORNAMENTAL TREES & 19.2 SHRUBS) - SIDE & REAR FACADE = 44 ORNAMENTAL TREES OR SHRUBS (MIN. 22 ORNAMENTAL TREES & 13.2 SHRUBS)	- 5 ORNAMENTAL TREES - 13 DECIDUOUS TREES - 182 SHRUBS - DECIDUOUS TREES, ORNAMENTAL TREES, & 116 SHRUBS LOCATED ALONG PERIMETER OF DRIVE ISLE AND PARKING LOT
	ARTICLE 5/LANDSCAPE STANDARDS/5.32/LA-02:NON-RESIDENTIAL LANDSCAPING STANDARDS/A/2/YARD PLANTINGS: - LOTS MORE THAN 1 ACRE IN AREA (3 CANOPY TREES PER ACRE)	2.13 ACRES - 6.39 CANOPY TREES	- 30 DECIDUOUS TREES
PLP	ARTICLE 5/LANDSCAPE STANDARDS/5.35/LA-05:PARKING LOT LANDSCAPE STANDARDS/B/1/PARKING LOT PERIMETER REQUIREMENTS: - LANDSCAPE AREA MINIMUM OF 10' IN WIDTH - OPTION 1 - (TREE & SHRUBS): 1 TREE SHALL BE PROVIDED FOR EVERY 400 SF OF LANDSCAPED AREA, 1 SHRUB FOR EVERY 50 SF OF LANDSCAPE AREA - 30% ORNAMENTAL TREES, 30% DECIDUOUS TREES,	- 390 LF X 10 SF = 3,900 SF - 10 TREES - MIN. 3 ORNAMENTAL TREES - MIN. 3 DECIDUOUS TREES - 78 SHRUBS	- 3 ORNAMENTAL TREES - 7 DECIDUOUS TREES - 78 SHRUBS
PLI	ARTICLE 5/LANDSCAPE STANDARDS/5.35/LA-05:PARKING LOT LANDSCAPE STANDARDS/C/1/PARKING LOT INETERIOR REQUIREMENTS: - LANDSCAPED ISLANDS WITH A COMBINED SURFACE AREA EQUAL TO 7.5% OF THE AREA OF PARKING LOT WITH MORE THAN 50 PARKING SPACES - ALL LANDSCAPE ISLANDS SHALL BE A MINIMUM OF 180 SF - 1 TREE SHALL BE PROVIDED FOR EVERY 200 SF OF LANDSCAPED AREA - 30% ORNAMENTAL TREES, 30% DECIDUOUS TREES, 1 SHRUB FOR EVERY 50 SF OF LANDSCAPE AREA	- 33,200 SF ASPHALT - 71 PARKING SPACES - 2,490 SF LANDSCAPED AREA - 13 TREES - MIN. 3.9 ORNAMENTAL TREES - MIN. 3.9 DECIDUOUS TREES - 50 SHRUBS	- 2,850 SF LANDSCAPED AREA - 8 ORNAMENTAL TREES - 5 DECIDUOUS TREES - 50 SHRUBS

PLANT SCHEDULE

PLAN KEY	BOTANICAL NAME	COMMON NAME	SIZE	QTY.	B&B	CONT.	MATURE SIZE	SPECIAL INSTRUCTIONS
	EVERGREEN SHRUBS							
BgV	BUXUS X KOREANA 'GREEN VELVET'	GREEN VELVET BOXWOOD	#5	26		X	3'T x3'W	24" Hgt. Min.
BmW	BUXUS MICROPHYLLA VAR. KOREANA 'WINTERGREEN'	WINTERGREEN KOREAN BOXWOOD	#5	16		X	3'T x 4'W	24" Hgt. Min.
IgC	ILLEX GLABRA 'COMPACTA'	COMPACT INKBERRY HOLLY	#5	41		X	7'T x 7'W	24" Hgt. Min.
JhP	JUNIPEROUS HORIZONTALIS 'PLUMOSA'	CREEPING JUNIPER	#5	16		X	1.5'T x 8'W	24" Hgt. Min.
JpS	JUNIPEROUS X PFITZERIANA 'SEA GREEN'	SEA GREEN JUNIPER	#5	65		X	5'T x 7'W	24" Hgt. Min.

W / S / N / E

SCALE: 1" = 20'

0 10 20 40

Know what's **below.** **Call** before you dig.

Within Indiana Call
811 or 800-382-5544
24 Hours a Day, 7 Days a Week.

PER INDIANA STATE LAW IC 8-1-26. IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*
ALLAN H. WEIHE, P.E., L.S. - FOUNDER

WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.

PROJECT NO.: W22.0478
DWG NAME: L100 - Landscape Plan
DESIGNED BY: SMB/AQ
DRAWN BY: SMB/AQ
CHECKED BY: EAC
DATE: 03/10/2023

REVISIONS AND ISSUES	DATE	BY
xx/xx/20xx		

APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

LANDSCAPE PLAN
Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO. L100

PROJECT NO. W22.0478

GENERAL NOTES

1. IN CASE OF DISCREPANCIES BETWEEN THE PLAN AND THE PLANT LIST, THE PLAN SHALL DICTATE. IF IN QUESTION, CONTACT THE LANDSCAPE ARCHITECT.
2. PROVIDE QUALITY, SIZE, GENUS, SPECIES, AND VARIETY FOR ALL PLANTS INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK", LATEST EDITION.
3. SUBMIT A LIST OF NURSERY SOURCES FOR ALL SPECIFIED PLANT MATERIAL INDICATING THE SIZE, GENUS, SPECIES AND VARIETY. INCLUDE THE QUANTITY OF PLANT MATERIAL TO BE PROCURED FROM EACH NURSERY.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING UTILITIES PERTAINING TO THEIR PHASE OF WORK. UTILITIES ARE SHOWN TO BE APPROXIMATE. CALL UTILITY LOCATE PRIOR TO ANY PLACEMENT OF PLANT MATERIAL OR OTHER LANDSCAPE MATERIAL.
5. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND FEES THAT MAY BE REQUIRED FOR HIS PORTION OF WORK.
6. ANY EXISTING TREE(S) AND/OR PLANTINGS THAT MAY REQUIRE REMOVAL BUT ARE NOT SHOWN ON THE PLAN AS BEING REMOVED SHALL BE PROTECTED AND BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT TO DETERMINE IF TREE(S) AND/OR PLANTINGS SHOULD BE 1)REMOVED, 2)SAVED AND INTEGRATED INTO THE LANDSCAPE DESIGN, OR 3) RELOCATED.
7. CONTRACTOR TO REVIEW THE SWPPP SERIES PLANS FOR STABILIZATION (SEEDING/SOD/MULCH) REQUIREMENTS.
8. PLANTING BEDS AND PLANT MATERIAL SHALL BE LOCATED AS INDICATED ON LANDSCAPE PLAN. IN THE EVENT FIELD CHANGES OR CONDITIONS REQUIRE MODIFICATION TO THE LANDSCAPE DESIGN, THE CONTRACTOR SHALL CONSULT LANDSCAPE ARCHITECT AS TO PROPOSED MODIFICATIONS PRIOR TO PLANTING. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO ADJUST PLANT LOCATIONS ON SITE IF NECESSARY.
9. ALL PLANTS ARE TO MEET OR EXCEED AMERICAN STANDARDS FOR NURSERY STOCK, LATEST EDITION, AS SET FORTH BY AMERICAN ASSOCIATION OF NURSERYMEN.
10. PLANTS SHALL BEAR A TAG SHOWING GENUS, SPECIES AND VARIETY. REMOVE AT TIME OF FINAL ACCEPTANCE.
11. PLANTS SHALL BE CERTIFIED BY THE STATE OF INDIANA DEPARTMENT OF NATURAL RESOURCES AND FREE FROM DISEASE OR HAZARDOUS INSECTS.
12. LANDSCAPE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IN WRITING PRIOR TO BID DATE OF ANY PLANTS THAT HE FEELS MAY NOT SURVIVE IN LOCATIONS NOTED.
13. NO SUBSTITUTIONS OF PLANT MATERIAL WILL BE ALLOWED WITHOUT APPROVAL OF THE JURISDICTION HAVING AUTHORITY AND THE LANDSCAPE ARCHITECT. IF PLANTS ARE SHOWN TO BE UNAVAILABLE, THE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT PRIOR TO BID DATE IN WRITING. THE CONTRACTOR SHALL COMPENSATE THE LANDSCAPE ARCHITECT FOR THE TIME REQUIRED FOR REVIEW AND INSPECTION OF PROPOSED PLANT SUBSTITUTIONS BID AWARD.
14. ALL PLANT MATERIAL SHALL BE SPECIMEN QUALITY. SUBMIT COLOR PHOTOGRAPHS OF PROPOSED PLANT MATERIAL TAKEN IN THE NURSERY WHERE THEY ARE GROWING. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO INSPECT PLANT MATERIALS AT NURSERY OR CONTRACTOR YARD PRIOR TO DELIVERY TO THE SITE. THE LANDSCAPE ARCHITECT MAY ALSO INSPECT AND APPROVED OR REJECTED PLANT MATERIAL ON THE JOB SITE. IN THE EVENT PLANT MATERIAL IS NOT THE SPECIFIED SIZE OR QUALITY, PLANTS WILL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.
15. PLANTS AND OTHER LANDSCAPE MATERIALS TO BE STORED ON SITE WILL BE PLACED WHERE THEY WILL BE PROTECTED AND NOT CONFLICT WITH CONSTRUCTION OPERATIONS.
16. COMPOST SHALL BE A WELL DECOMPOSED, STABLE, WEED FREE ORGANIC MATTER SOURCE. IT SHALL BE DERIVED FROM: AGRICULTURAL, FOOD, OR INDUSTRIAL RESIDUALS; BIOSOLIDS (TREATED SEWAGE SLUDGE); YARD TRIMMINGS; SOURCE-SEPARATED OR MIXED SOLID WASTE. THE PRODUCT SHALL CONTAIN NO SUBSTANCES TOXIC TO PLANTS AND SHALL BE REASONABLY FREE (< 1% BY DRY WEIGHT) OF MAN-MADE FOREIGN MATTER. THE COMPOST WILL POSSESS NO OBJECTIONABLE ODORS AND SHALL NOT RESEMBLE THE RAW MATERIAL FROM WHICH IT WAS DERIVED.
17. SHRUB AND PERENNIAL BEDS SHALL BE PREPARED BY PLACING 3" OF APPROVED COMPOST OVER PULVERIZED TOPSOIL AND ROTOTILLING TO A DEPTH OF 6".
18. PRE-EMERGENT HERBICIDE SHALL BE APPLIED IN ALL PLANTING AND GROUND COVER BEDS PRIOR TO MULCHING AT RATES SPECIFIED BY MANUFACTURER FOR EACH VARIETY OF PLANT. PRE-EMERGENT HERBICIDE SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO APPLICATION.
19. ALL TREE AND SHRUB PLANTING AREAS TO BE COVERED WITH 3" THICK LAYER OF SHREDDED HARDWOOD BARK MULCH. ALL GROUND COVER BEDS SHALL BE COVERED WITH 1" SHREDDED HARDWOOD BARK MULCH. BARK MULCH SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT AND SHALL BE UNIFORM IN TEXTURE AND COLOR AND SHALL BE FREE OF STICKS, LEAVES, SOIL AND FOREIGN MATERIAL. NO UTILITY MULCH OR PROCESSED TREE TRIMMINGS WILL BE ALLOWED.
20. CONTRACTOR SHALL MAINTAIN ALL LAWN AREAS AND PLANT MATERIAL UNTIL ALL PUNCH LIST WORK HAS BEEN COMPLETED AND WRITTEN FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT OR OWNER. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER EACH PLANT IS INSTALLED AND SHALL INCLUDE BUT NOT LIMITED TO, WATERING, WEEDING, PRUNING, DISEASE AND INSECT CONTROL, MOWING, RESETTING OF PLANTS TO PROPER GRADES OR UPRIGHT POSITION, AND ANY OTHER PROCEDURE CONSISTENT WITH GOOD HORTICULTURAL PRACTICES.
21. ALL NEW LANDSCAPE PLANTINGS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FOLLOWING FINAL ACCEPTANCE AS DETERMINED BY LANDSCAPE ARCHITECT OR OWNER. AT THE END OF THIS PERIOD, PLANT MATERIAL DETERMINED TO BE DEAD OR UNSATISFACTORY BY LANDSCAPE ARCHITECT OR OWNER SHALL BE REPLACED AT NO ADDITIONAL CHARGE BY THE CONTRACTOR.

SUN & SHADE SEED MIXTURE	
APPLICATION RATE: 3-4 lb./1,000 sq. ft.	
TURF-TYPE PERENNIAL RYEGRASS	34%
FINE FESCUE	33%
SHAMROCK KBG	33%
Sun & Shade Park Mix forms a durable turf for general use areas. Sun & Shade Park Mix will do well under a wide range of maintenance levels and can be established in full sun to partially shaded conditions. Sun & Shade Park Mix will provide turf with a fine texture, good mowing quality, and withstand moderate traffic. Sun & Shade Park Mix will establish quickly for maximum competition against annual weeds.	

FESCUE LAWN SEED MIX		
BOTANICAL NAME	COMMON NAME	OZ./ACRE
NOTES:		
LAWN SEED SHALL BE FRESH, CLEAN, DRY NEW - CROP COMPOSED OF VARIETIES, MIXED PROPORTIONS, AND TESTED FOR MINIMUM PERCENTAGES OF PURITY AND AS SPECIFIED AS FOLLOWS:		
PERMANENT COVER:		
FESTUCA COMMUTATE	LONGFELLOW II CHEWINGS FESCUE	25.00%
FESTUCA OVINA	SHEEPS FESCUE	25.00%
FESTUCA BREVIPILA	CHARIOT HARD FESCUE	13.00%
FESTUCA RUBRA	SHORELINE SLENDER CREEPING RED FESCUE	12.00%
FESTUCA RUBRA SUBSPECIES RUBRA	SR 5250 CREEPING RED FESCUE	13.00%
FESTUCA BREVIPILA	GOTHAM HARD FESCUE	12.00%
	SEEDING RATE FOR MIX:	250 LBS/ACRE

PERMANENT SEEDING NOTES

GRADING
1. GRADE THE SITE TO ACHIEVE PROPOSED GRADES AND POSITIVE DRAINAGE.
ADD TOPSOIL TO ACHIEVE NEEDED DEPTH FOR ESTABLISHMENT OF VEGETATION.

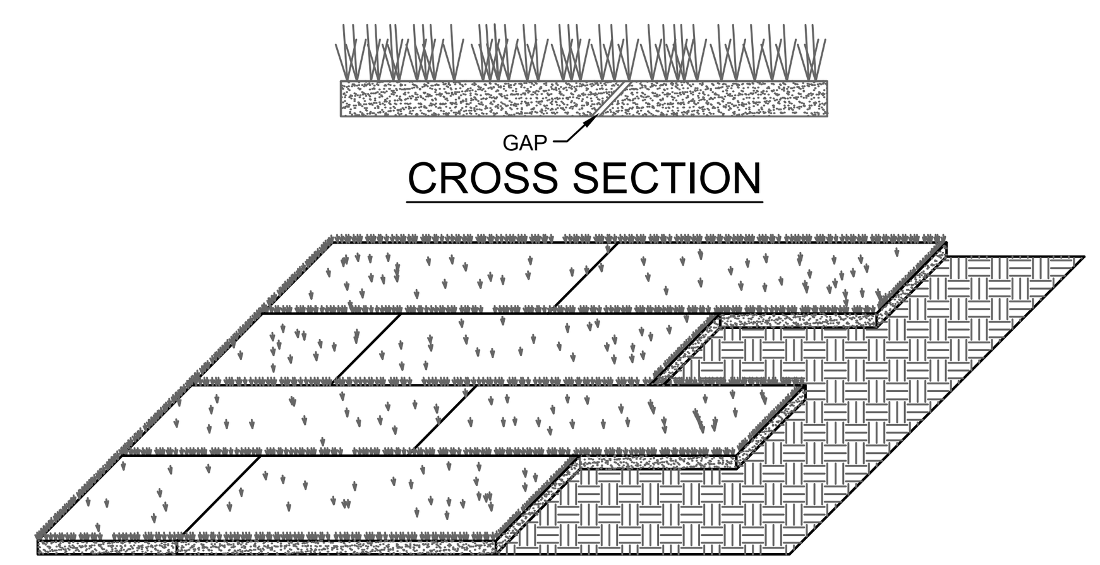
SEEDBED PREPARATION
1. TEST SOIL TO DETERMINE PH AND NUTRIENT LEVELS.
2. APPLY SOIL AMENDMENTS AS RECOMMENDED BY THE SOIL TEST AND WORK INTO THE UPPER TWO TO FOUR INCHES OF SOIL. IF TESTING IS NOT DONE, APPLY 400 TO 600 POUNDS PER ACRE OF 12-12-12 ANALYSIS FERTILIZER, OR EQUIVALENT.
3. TILL THE SOIL TO OBTAIN A UNIFORM SEEDBED. USE A DISK OR RAKE, OPERATED ACROSS THE SLOPE, TO WORK THE SOIL AMENDMENTS INTO THE UPPER TWO TO FOUR INCHES OF THE SOIL.

SEEDING
OPTIMUM SEEDING DATES: **MARCH 1 TO MAY 10 OR AUGUST 10 TO SEPTEMBER 30**

PERMANENT SEEDING DONE BETWEEN **MAY 10 TO AUGUST 10 -** SHALL BE IRRIGATED. SEEDING OUTSIDE OR BEYOND OPTIMUM SEEDING DATES IS STILL POSSIBLE WITH THE UNDERSTANDING THAT RESEEDING OR OVERSEEDING SHALL BE REQUIRED IF ADEQUATE SURFACE COVER IS NOT ACHIEVED. RESEEDING OR OVERSEEDING CAN BE EASILY ACCOMPLISHED IF THE SOIL SURFACE REMAINS WELL PROTECTED WITH MULCH.

1. APPLY SEED UNIFORMLY WITH A DRILL OR CULTIPACKER SEEDER OR BY BROADCASTING. PLANT OR COVER THE SEED TO A DEPTH OF ONE-FOURTH TO ONE-HALF INCH. IF DRILLING OR BROADCASTING THE SEED, ENSURE GOOD SEED-TO-SOIL CONTACT BY FIRMING THE SEEDBED WITH A ROLLER OR CULTIPACKER AFTER COMPLETING SEEDING OPERATIONS. (IF SEEDING IS DONE WITH A HYDROSEEDER, FERTILIZER AND MULCH CAN BE APPLIED WITH THE SEED IN A SLURRY MIXTURE.)
2. MULCH ALL SEEDED AREAS AND USE APPROPRIATE METHODS TO ANCHOR THE MULCH IN PLACE. USE EROSION CONTROL BLANKETS ON SLOPING AREAS AND CONVEYANCE CHANNELS

MAINTENANCE
1. INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS UNTIL THE VEGETATION IS SUCCESSFULLY ESTABLISHED.
2. CHARACTERISTICS OF A SUCCESSFUL STAND INCLUDE VIGOROUS DARK GREEN OR BLUISHGREEN SEEDLINGS WITH A UNIFORM VEGETATIVE COVER DENSITY OF 90 PERCENT OR MORE.
3. CHECK FOR EROSION OR MOVEMENT OF MULCH.
4. REPAIR DAMAGED, BARE, GULLIED, OR SPARSELY VEGETATED AREAS AND THEN FERTILIZE, RESEED, AND APPLY AND ANCHOR MULCH.
5. IF PLANT COVER IS SPARSE OR PATCHY, EVALUATE THE PLANT MATERIALS CHOSEN, SOIL FERTILITY, MOISTURE CONDITION, AND MULCH APPLICATION; REPAIR AFFECTED AREAS EITHER BY OVERSEEDING OR PREPARING A NEW SEEDBED AND RESEEDING. APPLY AND ANCHOR MULCH ON THE NEWLY SEEDED AREAS.
6. IF VEGETATION FAILS TO GROW, TEST SOIL TO DETERMINE SOIL PH OR NUTRIENT DEFICIENCY PROBLEMS. (CONTACT YOUR SOIL AND WATER CONSERVATION DISTRICT OR COOPERATIVE EXTENSION OFFICE FOR ASSISTANCE.)
7. IF ADDITIONAL FERTILIZATION OR SOIL AMENDMENTS ARE NEEDED TO GET A SATISFACTORY STAND, DO SO ACCORDING TO SOIL TEST RECOMMENDATIONS.
8. ADD FERTILIZER THE FOLLOWING GROWING SEASON. FERTILIZE ACCORDING TO SOIL TEST RECOMMENDATIONS.
9. FERTILIZE TURF AREAS ANNUALLY. APPLY FERTILIZER IN A SPLIT APPLICATION. FOR COOL-SEASON GRASSES, APPLY ONE-HALF OF THE FERTILIZER IN LATE SPRING AND ONE HALF IN EARLY FALL. FOR WARM-SEASON GRASSES, APPLY ONE-THIRD IN EARLY SPRING, ONE-THIRD IN LATE SPRING, AND THE REMAINING ONE-THIRD IN MIDDLE SUMMER.



1 SOD APPLICATION DETAIL

Scale: N.T.S.

SOD NOTES

INSTALLATION
SOD SHOULD NOT BE INSTALLED DURING HOT WEATHER, ON DRY SOIL, FROZEN SOIL, COMPACTED CLAY, LOOSE SAND OR GRAVELLY SUBSTRATE SOILS, AGGREGATE, OR PESTICIDE TREATED SOIL. THE IDEAL TIME TO LAY SOD IS MAY 1 TO JUNE 1 OR SEPTEMBER 1 TO SEPTEMBER 30, ALTHOUGH IT CAN BE INSTALLED AS EARLY AS MARCH 15 IF AVAILABLE OR JUNE 1 TO SEPTEMBER 1 IF IRRIGATED.

SITE PREPARATION
1. APPLY TOPSOIL IF EXISTING SOIL CONDITIONS ARE UNSUITABLE FOR ESTABLISHING VEGETATION.
2. GRADE THE SITE TO ACHIEVE POSITIVE DRAINAGE AND CREATE A SMOOTH, FIRM SOIL SURFACE.
3. WHERE APPLICABLE, USE A CHISEL PLOW, DISK, HARROW, OR RAKE TO BREAK UP COMPACTED SOILS AND CREATE A FAVORABLE ROOTING DEPTH OF SIX TO EIGHT INCHES.

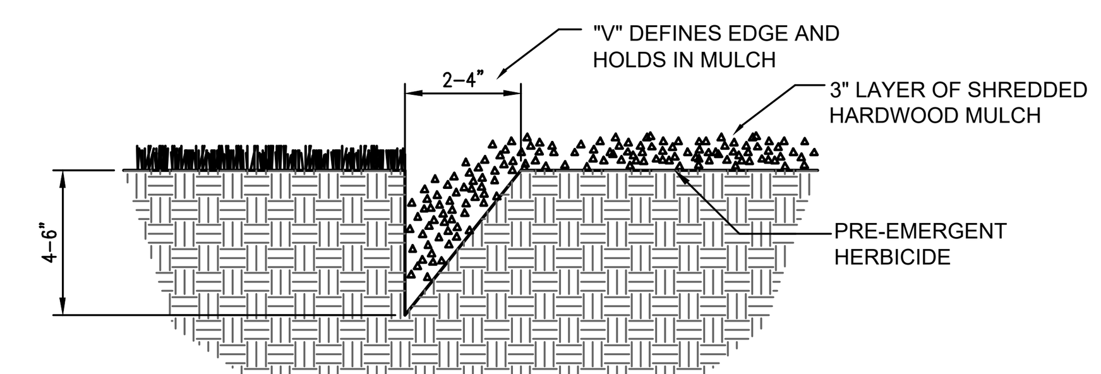
SOD BED PREPARATION
1. TEST SOIL TO DETERMINE PH AND NUTRIENT LEVELS.
2. IF SOIL PH IS TOO ACIDIC FOR THE GRASS SOD TO BE INSTALLED, APPLY LIME ACCORDING TO SOIL TEST RESULTS OR AT THE RATE RECOMMENDED BY THE SOD SUPPLIER.
3. APPLY FERTILIZER AS RECOMMENDED BY THE SOIL TEST. IF TESTING WAS NOT DONE, APPLY 400 TO 600 POUNDS PER ACRE OF 12-12-12 ANALYSIS FERTILIZER, OR EQUIVALENT.
4. WORK THE SOIL AMENDMENTS INTO THE UPPER TWO TO FOUR INCHES OF SOIL WITH A DISK OR RAKE OPERATED ACROSS THE SLOPE.
5. RAKE OR HARROW THE AREA TO ACHIEVE A SMOOTH FINAL GRADE AND THEN ROLL OR CULTIPACK THE SOIL SURFACE TO CREATE A FIRM SURFACE ON WHICH TO LAY THE SOD.

LAYING THE SOD
1. INSTALL SOD WITHIN THIRTY-SIX HOURS OF ITS CUTTING.
2. STORE THE SOD IN A SHADED LOCATION DURING INSTALLATION.
3. IMMEDIATELY BEFORE LAYING THE SOD, RAKE THE SOIL SURFACE TO BREAK ANY CRUST. (IF THE WEATHER IS HOT, LIGHTLY IRRIGATE THE SOIL SURFACE PRIOR TO LAYING THE SOD.)
4. LAY SOD STRIPS IN A BRICK-LIKE PATTERN.
5. BUTT ALL JOINTS TIGHTLY AGAINST EACH OTHER (DO NOT STRETCH OR OVERLAP THEM), USING A KNIFE OR MASON'S TROWEL TO TRIM AND FIT SOD INTO IRREGULARLY SHAPED AREAS.
6. ROLL THE SOD LIGHTLY AFTER INSTALLATION TO ENSURE FIRM CONTACT BETWEEN THE SOD AND SOIL.
7. IRRIGATE NEWLY SODDED AREAS UNTIL THE UNDERLYING SOIL IS WET TO A DEPTH OF FOUR INCHES, AND THEN KEEP MOIST UNTIL THE GRASS TAKES ROOT.

SLOPE APPLICATION
1. INSTALL THE SOD STRIPS WITH THE LONGEST DIMENSION PERPENDICULAR TO THE SLOPE.
2. WHERE SLOPES EXCEED A RATIO OF 3:1, STAPLE OR STAKE EACH STRIP AT THE CORNERS AND IN THE MIDDLE.

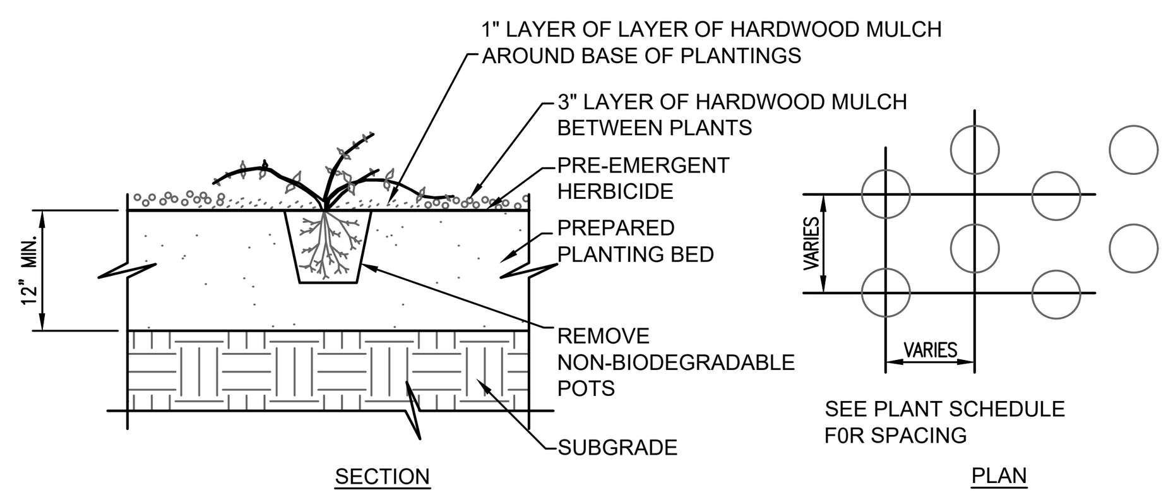
CHANNEL APPLICATION
(SODDING PROVIDES QUICKER PROTECTION THAN SEEDING AND MAY REDUCE THE RISK OF EARLY WASHOUT.)
1. EXCAVATE THE CHANNEL, ALLOWING FOR THE FULL THICKNESS OF THE SOD.
2. LAY THE SOD STRIPS WITH THE LONGEST DIMENSION PERPENDICULAR TO CHANNEL FLOW.
3. STAPLE OR STAKE EACH STRIP OF SOD AT THE CORNERS AND IN THE MIDDLE.
4. STAPLE JUTE OR BIODEGRADABLE POLYPROPYLENE NETTING OVER THE SODDED AREA TO MINIMIZE THE POTENTIAL FOR WASHOUT DURING ESTABLISHMENT.

MAINTENANCE
1. INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS UNTIL SOD IS WELL ROOTED.
2. KEEP SOD MOIST UNTIL FULLY ROOTED.
3. AFTER SOD IS WELL-ROOTED (TWO TO THREE WEEKS), MAINTAIN A PLANT HEIGHT OF TWO TO THREE INCHES.
4. TIME MOWING TO AVOID RUTS IN TURF.
5. FERTILIZE TURF AREAS ANNUALLY. APPLY FERTILIZER IN A SPLIT APPLICATION. FOR COOL SEASON GRASSES, APPLY ONE-HALF OF THE FERTILIZER IN LATE SPRING AND ONE-HALF IN EARLY FALL. FOR WARM-SEASON GRASSES, APPLY ONE-THIRD IN EARLY SPRING, ONE-THIRD IN LATE SPRING AND ONE-THIRD IN MID-SUMMER.



2 V-CUT LANDSCAPE BED EDGE DETAIL

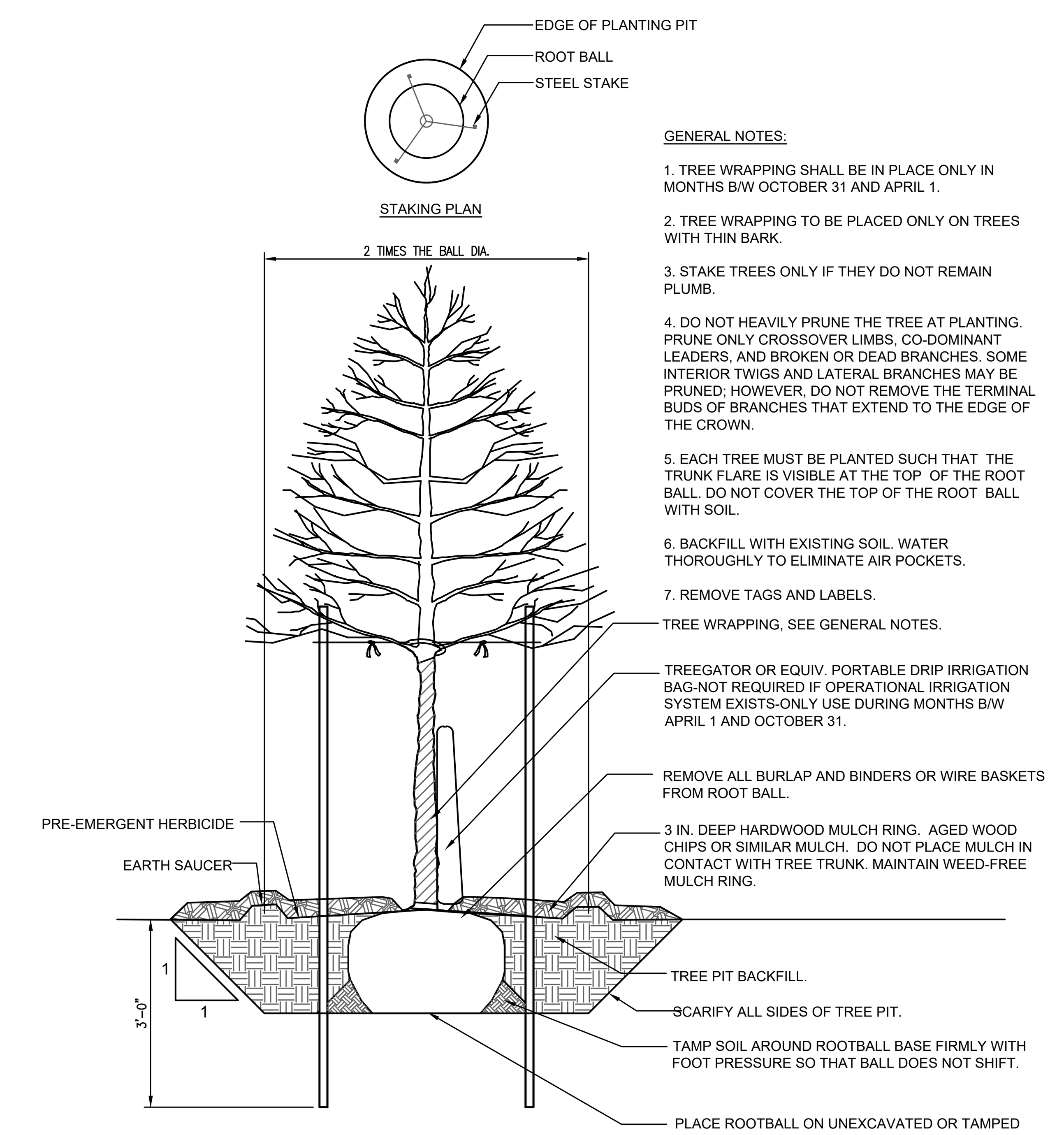
Scale: N.T.S.



SHRUB AND PERENNIAL BEDS SHALL BE PREPARED BY PLACING 3" OF APPROVED COMPOST OVER PULVERIZED TOPSOIL AND ROTOTILLING TO A DEPTH OF 6".

3 GROUNDCOVER PLANTING

Scale: N.T.S.



GENERAL NOTES:

1. TREE WRAPPING SHALL BE IN PLACE ONLY IN MONTHS B/W OCTOBER 31 AND APRIL 1.

2. TREE WRAPPING TO BE PLACED ONLY ON TREES WITH THIN BARK.

3. STAKE TREES ONLY IF THEY DO NOT REMAIN PLUMB.

4. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.

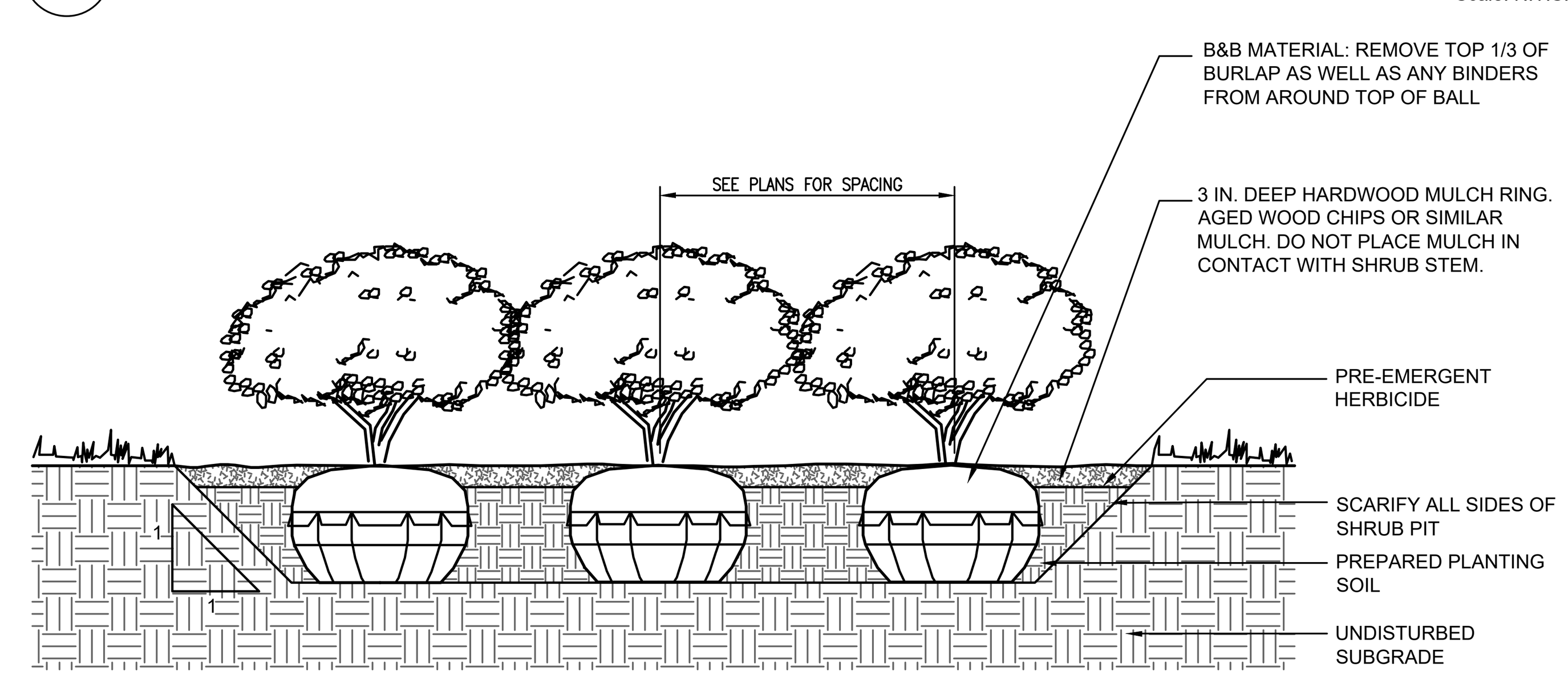
5. EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.

6. BACKFILL WITH EXISTING SOIL. WATER THOROUGHLY TO ELIMINATE AIR POCKETS.

7. REMOVE TAGS AND LABELS.

4 TREE PLANTING DETAIL

Scale: N.T.S.



5 SHRUB PLANTING DETAIL

Scale: N.T.S.

10505 N. College Avenue
Indianapolis, Indiana 46280
weihe.net
317 | 846 - 6611
800 | 452 - 6408
317 | 843 - 0546 *fax*
ALLAN H. WEIHE, P.E., L.S. - FOUNDER
WEIHE ENGINEERS
Land Surveying | Civil Engineering
Landscape Architecture
Build with confidence.

PROJECT NO.: W22.0478
DWG NAME: L100 - Landscape Plan
DESIGNED BY: SMB/AQ
DRAWN BY: SMB/AQ
CHECKED BY: EAC
DATE: 03/10/2023

REVISIONS AND ISSUES	DATE	BY
xx/xx/20xx		

APPROVAL PENDING
NOT FOR CONSTRUCTION

PREPARED FOR:
SHELBYVILLE MARKETPLACE - RETAIL
2235 MARKETPLACE BLVD, SHELBYVILLE, IN 46176

LANDSCAPE DETAILS
Block B in Shelbyville Marketplace, Part of the NE/4 of Section 04, Township 12 North, Range 7 East, Addison Township, Shelby County, Indiana

SHEET NO.
L101

PROJECT NO.
W22.0478

LOCATION: H:\2022\W220478\Engineering\design\conset\Block B\L100 - Landscape Plan.dwg
LAYOUT: L101
DATE/TIME: April 10, 2023 - 4:59pm
PLOTTED BY: steuberm

SHELBYVILLE, INDIANA

SHELBYVILLE CONSTRUCTION STANDARDS

DIRECTIONS FOR USE

1.) The Entire Set Of Signed Standards Shall Be Attached To The Site Development Plans And Construction Drawings And Shall Be Considered Part Thereto.

2.) Details Prepared By Outside Sources Shall Not Be Included In The Construction Drawings When Said Details Cover Work Which Is Covered By Shelbyville Standards.

3.) Individual Shelbyville Standards That Do Not Apply May Be Crossed-out By Design Engineer Through The Placement Of A Single Large 'X' Over Detail. Minor Reference Notations May Be Placed Adjacent To Individual Standard Drawings For Coordination. However, The Standards Themselves Shall Not Be Modified In Any Way.

4.) Details Prepared By Outside Sources Covering Work Which Is Not Covered By Shelbyville Standards Are The Sole Responsibility Of The Design Engineer And Shall Be Placed On Sheets Other Than The Shelbyville Standards Sheets.

5.) For Details, Specifications, And Design Guidelines Not Covered In These Standards, Refer To The Documents Stated Below. In The Event That These Standards Are Used, Referenced, Or Incorporated Into Any Publicly Or Privately Funded Project And A Conflicting Standard(s) And/Or Specifications(s) Exist, The Following Order Shall Govern:
   - 5.1 Shelbyville Construction Standards
   - 5.2 City Of Shelbyville Unified Development Ordinance
   - 5.3 City Of Shelbyville Stormwater Design Manual
   - 5.4 INDOT Standards And Specifications / Indiana Manual On Uniform Traffic Control Devices / INDOT Work Zone Safety Manual.
   - 5.5 "Ten State Standards" Prepared By Great Lakes-Upper Mississippi River Board Of State Public Health And Environmental Managers And Sanitary Engineers
   - 5.6 ASTM And/Or AWWA Standards And Specifications
   - 5.7 Project's Written Specifications
   - 5.8 Project's Plans

6.) Design Professional Certifying The Plans For The Project Acknowledges Their Professional Responsibility For Ensuring That All Work Is Correct, Accurate, And Complies With All Applicable Laws, Standards, Regulations, And Ordinances. If Such An Error And/Or Omission Is Found, The Design Professional Accepts Full Responsibility And Shall Determine A Solution That Complies With All Applicable Laws, Standards, Regulations, And Ordinances. If Such An Error Or Omission Is Found,The Developer Is Not Relieved To Comply With All Applicable Laws, Standards, Regulations, And Ordinances.

7.) All Requests For Interpretations And/Or Clarification With The Standards Shall Be Done In Writing To The City Engineer. All Official Responses By The City Engineer Will Be Done In Writing.

8.) Failure To Properly Execute The Above Directions For Use Will Not Effect The Applicability Nor The Enforcement Of The Individual Shelbyville Standards.

9.) The City Of Shelbyville Shall Be Contacted When Required By Calling (317) 392-5102.

Shelbyville Construction Standards Apply To Public & Private Property

SHELBYVILLE PRIDE IN PROGRESS

BOARD OF PUBLIC WORKS AND SAFETY

INDEX	
Sheet #	DESCRIPTION
1	DIRECTIONS FOR USE, GENERAL NOTES, AND REVISION LOG
2	RIGHT-OF-WAY
3	RIGHT-OF-WAY, SITE DEVELOPMENT STANDARDS
4	PAVEMENT DETAILS AND NOTES
5	CURB AND DRIVEWAY DETAILS AND NOTES
6	SIDEWALK AND ADA RAMPS DETAILS AND NOTES
7	TRENCH BACKFILL AND STREET CUT DETAILS AND NOTES
8	STORM SEWER BEDDING AND PIPE DETAILS AND NOTES
9	STORM SEWER AND DRAINAGE DETAILS AND NOTES
10	STORM SEWER STRUCTURES DETAILS AND NOTES
11	SANITARY SEWER BEDDING AND PIPE DETAILS AND NOTES
12	SANITARY SEWER DETAILS AND NOTES
13	SANITARY SEWER DETAILS AND NOTES
14	SANITARY SEWER LIFT STATION STANDARDS AND GUIDELINES
15	FIRE DEPT. & WATER STANDARD DETAILS
16	SIGNS, MARKINGS, & MONUMENTATION DETAILS
17	ARTERIAL/COLLECTOR ROUNDABOUT STANDARDS AND DETAILS
18	LOCAL ROUNDABOUT STANDARDS AND DETAILS

APPROVED — Tom DeBaun, Mayor — 02/18/2020 Date

APPROVED — David Finkel, Member — 02/18/2020 Date

APPROVED — Bob Williams, Member — 02/18/2020 Date

GENERAL NOTES

1.) Contractor Shall Verify The Exact Location Of All Existing Utilities At Least 48 Hours Prior To Any Construction Or Excavation. During Construction, All Utilities Shall Be Adequately Supported To Minimize Damage. The Contractor Shall Be Responsible For Repairing Or Replacing Damaged Utilities To The Satisfaction Of The City Of Shelbyville And The Owner Of The Affected Utility. All Utility Main Lines And All Utility Service Lines/Laterals Are Included In The Definition Of All Utilities.

2.) Contractor Shall Obtain A R/W Permit From The Engineering Dept. Prior To Starting Any Work Within City R/W. R/W Permits Require A Minimum 2 Working Days For Internal Review Prior To Approval. A $10K Maintenance & Performance Bond Shall Be Posted With R/W Permit Application. The City Reserves The Right To Require A Larger Maintenance & Performance Bond Based On Project Scope If Deemed Necessary By The City. Failure To Obtain The Proper Permits As Required May Result In Penalties As Provided In City Ordinance 10.99.

3.) Project Plans Shall Be Provided For Review By The Technical Review Committee (TRC). Any Project With Public Works Infrastructure Improvements Shall Commence With Construction No Later Than 2 Years From TRC Approval, Or Shall Be Subject To A Subsequent TRC Approval.

4.) The Contractor Shall Notify The City And All Other Applicable Governmental Agencies At Least 48 Hours Prior To Starting Or Resuming Work On A Project. If Work Involves A Lane Closure, The Contractor Must Notify The Street Department At Least 72 Hours In Advance.

5.) The Contractor Is Responsible For Maintaing A Safe Construction Site And For Keeping Surrounding And Adjacent Streets Neat And Clean. The Contractor Shall Provide All Traffic Control, In Accordance With Most Recent Version Of The INDOT Workzone Safety Manual, Required On Public Ways Near The Project.

6.) All Erosion Control / Stormwater Pollution Prevention Measures Shall Meet Or Exceed The Requirements Set Forth In The Indiana Storm Water Quality Manual. Contractor Is Responsible For Maintaining Such Measures In Compliance With All Applicable IDEM, DNR, And City Of Shelbyville MS4 Standards And Regulations.

7.) All Street Cuts Shall Be Square And Neat. Jagged Or Irregular Street Cuts Are Not Permitted And Shall Be Repaired By The Contractor At No Cost To The City.

8.) Installation Of, Or Provisions For The Installation Of All Underground Utilities (Including Service Laterals) To Be Placed Under Pavement Areas Shall Be Established Prior To The Construction Of The Pavements. The City Reserves The Right To Require Trenchless Construction For Crossing Of Existing Streets. No Open Cut Construction Of New Pavement, Curb, Or Sidewalk Will Be Allowed.

9.) All Benchmarks And Elevations Shall Be Based On The City/County G.I.S. Datum.

10.) Whenever Proprietary Equipment Is Specified, All Proposals for Substitution Shall Be Submitted In Writing To The Shelbyville Engineering Department For Review.

11.) As-Built Record Drawings Shall Be Submitted To The Shelbyville Plan Commission Office. Two Full Hard-Copy Sets, One Full-Size PDF Set, And One Electronic AutoCAD Set Shall Be Submitted To The Shelbyville Plan Commision Office. Electronic AutoCAD Drawings Shall Be Compliant With The State Plane Coordinate System With Units Provided In U.S. Survey Feet. All Benchmarks And Elevations Shall Be Based On The City/County G.I.S. Datum. As-Built Drawings Shall Be Certified By A Registered Land Surveyor Or Engineer. As-Builts Are Required For Sanitary Sewer Systems, Storm Sewers Systems, Water Systems, Conduits, Lights, Roadways, And All Other Infrastructure Within Public Right-Of-Ways And/Or Easements.

12.) All Construction Within Public Right-Of-Ways Shall Comply With The Most Recent Version Of The Requirements Of The Americans With Disabilities Act (ADA). Construction Shall Meet The Standards Set Forth In The Current ADA Accessibility Guidelines (ADAAG) And Public Right-Of-Ways Guidelines (PROWAG).

Indiana811 — Know what's below. Call before you dig.

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	ADA Compliance Notes, References To New UDO	01/14/2014
3	Updated Entire Set	02/11/2020

MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

CITY OF SHELBYVILLE — DIRECTIONS FOR USE, GENERAL NOTES, & REVISION LOG — SHEET 1 OF 18

GENERAL NOTES

1.) The Right-Of-Way Widths, Pavement Widths, And Easement Widths Indicated On This Sheet Are Minimum Distances Required By The City Of Shelbyville. Greater Widths May Be Provided Or Required. Additional Right-Of-Way Width May Be Required By The City In The Proximity of Intersections With Thoroughfare Or Arterial Roads. The City Of Shelbyville Unified Development Ordinance, Section 6.19, Provides For The Specific Details For Right-Of-Way, Pavement, and Sidewalk Widths. The Contractor Shall Review The Plat And The Plans To Confirm The Various Widths Indicated On This Sheet And Shall Report Any Discrepancy To The City Engineer Prior To Proceeding With Construction.

2.) Local Street Pavement Width (Excluding Curb & Gutter) May Be Required To Be Wider Than Specified When Directed By The Shelbyville Plan Commission And / Or City Engineer. Additional Width Requirement Will Be Considered When Dwelling Density Exceeds 4 Lots Per Acre.

3.) Dimensions Shown On The Street Cross Section Details On This Sheet Are For Two-Lane Streets With No Parking. See Note (2) In Table 1 For Street And Right-Of-Way Widths For Streets With Parking.

4.) If The Width Of A New Sidewalk Is Different Than The Width Of A Connecting Existing Sidewalk, A 5 Ft Sidewalk Taper Or Flare Section Shall Be Constructed To Transition To Existing Sidewalks Having A Different Width.

5.) All Permits And Easements Shall Be Obtained By The Owner With Any Required Insurance Or Bonds To Be Provided By The Owner Or Contractor Prior To The Start Of Work On The Project.

6.) Minimum Profile Grade On Streets Shall Be 0.60%. Minimum Length Of Vertical Curves Shall Be 25 Feet. Vertical And Horizontal Design Of Streets Shall Comply With Street Alignment Design Tables As Shown On This Sheet.

7.) "Ten State Standards" Shall Be Followed, Including 18" Minimum Vertical Separation And 10'-0" Minimum Horizontal Separation Shall Be Maintained Between Watermains, Hydrants, And All Sewers (Storm and Sanitary).

8.) Standard Pavement Markings Shall Be Placed In Streets / Roads As Shown In Accordance With The Most Recent Version Of The Indiana Manual On Uniform Traffic Control Devices (MUTCD). For Asphalt Pavements, All Pavement Markings Shall Be Thermoplastic. For Concrete Pavements, All Pavement Markings Shall Be Epoxy Or Pre-Formed Plastic.

9.) Top Of Manhole Frames Shall Be Set To Meet The Finished Yard Or Sidewalk Grade When Located In Front Yard Area Of Lot Or Right-Of-Way.

10.) Snowplowable Raised Pavement Markers (RPMs) Shall Be Placed On All Arterial Roads, In Accordance With The Most Recent Version Of The Indiana Manual On Uniform Traffic Control Devices (MUTCD). Blue RPMs Shall Be Used When Adjacent To A Fire Hydrant.

11.) Arterial Streets And All Divided Streets Shall Be Coordinated With The City Engineer And Plan Commissioner And Shall Be In Accordance With The Minimum Design Standards Outlined By The Unified Development Ordinance.

12.) Residential Streets Are Defined As Streets Serving Only Residential Properties. Non-Residential Streets Are Defined As Streets Serving Non-Residential Properties Or Any Combination of Residential And Non-Residential Properties.

13.) Street Classifications Shall Be Confirmed With The City Plan Commission Office.

14.) Refer To The Shelbyville Unified Development Ordinance Section 6.17 For Cul-De-Sac Design Standards.

15.) For Construction In Already Developed Areas, Some Of The Required Road Widths, Planting Strip Widths, And Other Items May Be Reduced With Permission From The City Engineer And/Or Plan Commissioner.

16.) Contractors And Developers Shall Refer To The City's Bicycle And Pedestrian Master Plan For New Construction. Projects May Be Required To Install A Wider Asphalt Path In Lieu of Concrete, Which May Affect R/W Widths.

17.) Street Trees Shall Be Required On All New Streets Unless Deemed Infeasible By The City Engineer. Trees Shall Be Planted Every 40' On-Center, In The 'Planting Strip' On Both Sides Of The Road, And Shall Be A Species Identified In Unified Development Ordinance 6.21. Existing Streets That Are Reconstructed Shall Have At Least Six New Trees Placed Per Block

18.) Street Lights Shall Be Required On All New And Majorly Reconstructed Streets Per The Unified Development Ordinance. The Spacing And Coverage Shall Be Designed By Lighting Professionals And Approved By The Planning Director.

TABLE 1: STREET DESIGN STANDARDS

		Local Street - Residential			Local Street - Non-Residential			Collector Street - Residential			Collector Street - Non-Residential			Arterial Street	Rural Collector Street
		No Parking	Parking On 1 Side (12)	Parking On 2 Sides (12)	No Parking	Parking On 1 Side (12)	Parking On 2 Sides (12)	No Parking	Parking On 1 Side (12)	Parking On 2 Sides (12)	No Parking	Parking On 1 Side (12)	Parking On 2 Sides (12)	No Parking	
(1)	Right-Of-Way Width	50	56	66	52	62	70	50	60	70	54	64	72	70	To Be Determined By The City Based On Traffic Volume and Design Speed
(2)	Pavement Width	22	31	40	24	34	44	24	34	44	26	36	46	36/48	
(3)	Curb Requirement (Type)	I/II	I/II	I/II	II	II	II	II	II	II	II	II	II	II	
(4)	Grade (Min. - Max.)	0.6% - 7%	0.6% - 7%	0.6% - 7%	0.6% - 5%	0.6% - 5%	0.6% - 5%	0.6% - 5%	0.6% - 5%	0.6% - 5%	0.6% - 5%	0.6% - 5%	0.6% - 5%	0.6% - 5%	0.6% - 5%
(5)	Minimum Tangent Distance	(10) 100	(10) 100	(10) 100	(10) 150	(10) 150	(10) 150	(10) 200	(10) 200	(10) 200	(10) 250	(10) 250	(10) 250	(10) 300	(10) 300
(6)	Minimum Corner Radius	(10) 25	(10) 25	(10) 25	(10) 30	(10) 30	(10) 30	(10) 35	(10) 35	(10) 35	(10) 45	(10) 45	(10) 45	(10) 50	(10) 50
(7)	See Also Note #4 (Single Family 4'-0" Width), (Multi-Family 5'-0" Width), (Commercial 6'-0" Width), (Industrial 4'-0" Width).														
(8)	Care Should Be Taken To NOT Disturb Lot Corner Pins When Constructing Sidewalks.														
(9)	2 Lane Arterial Street Standards Shown - All Other Arterial Street Designs Shall Be Consistent With The Requirements Of The City Engineer And INDOT.														
(10)	Subject To Additional Requirements And Any Alternate Standards Established By The City Engineer And/Or INDOT, Based On Design Speed.														
(11)	Pavement / Sidewalk Separation May Be Reduced To 4 Feet In Commercial Areas Where Parking Is Provided On Both Sides Of The Street.														
(12)	Street Widths Are Based On Parallel Parking Only. Other Parking Configurations Must Be Approved By The City Engineer And Plan Commission Office.														

TABLE 2: ROADWAY GEOMETRIC DESIGN TABLE

DESIGN SPEED (MPH)	MINIMUM HORIZONTAL CURVE RADIUS (ft)[1]	CREST K VALUE (Minimum)[2]	SAG K VALUE (Minimum)[3]	Max. Permitted Grade Change Without Vertical Curve[4]
20	100	12	17	2.00%
25	250	19	26	1.85%
30	400	29	37	1.30%
35	600	44	49	0.95%
40	800	61	64	0.75%
45	1000	84	79	0.55%
50	1200	114	96	0.45%

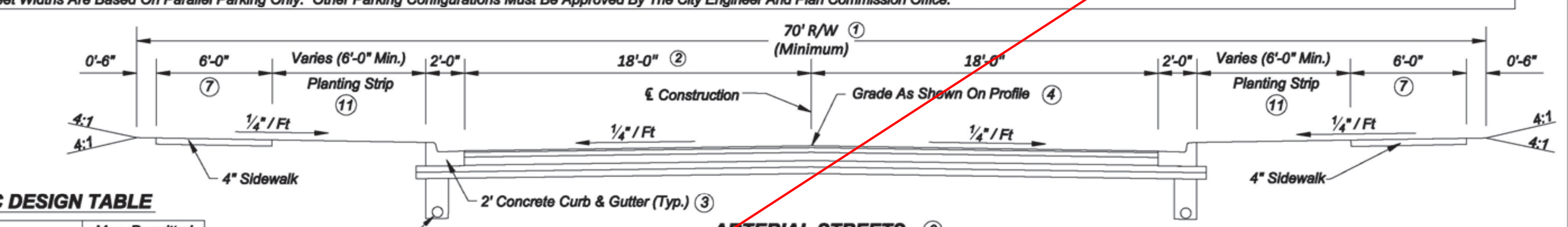
NOTES:

1.) City Engineer And/Or Plan Commissioner May Require A Longer Curve Radius

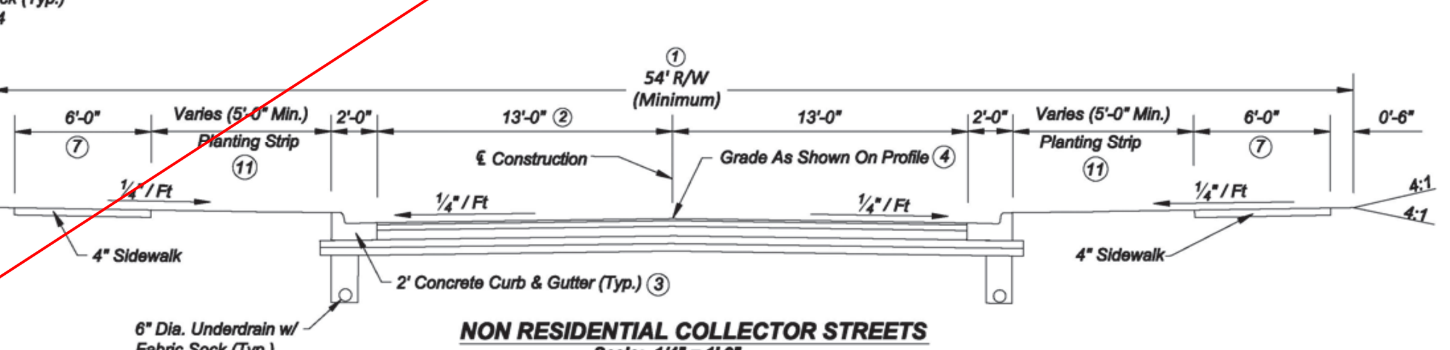
2.) If Curbs Are Present, And K>150, Proper Pavement Drainage Should Be Ensured Near The High Point Of The Curve.

3.) If Curbs Are Present, And K>150, Proper Pavement Drainage Should Be Ensured Near The Low Point Of The Curve.

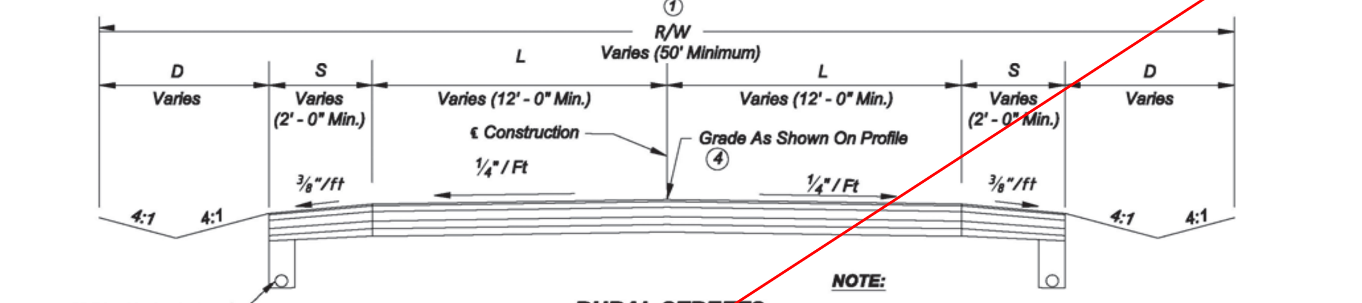
4.) Applies to Local Streets Only. Minimum Required Distance Between Consecutive Deflections Is 100 ft.



ARTERIAL STREETS (9)
Scale: 1/4" = 1'-0"



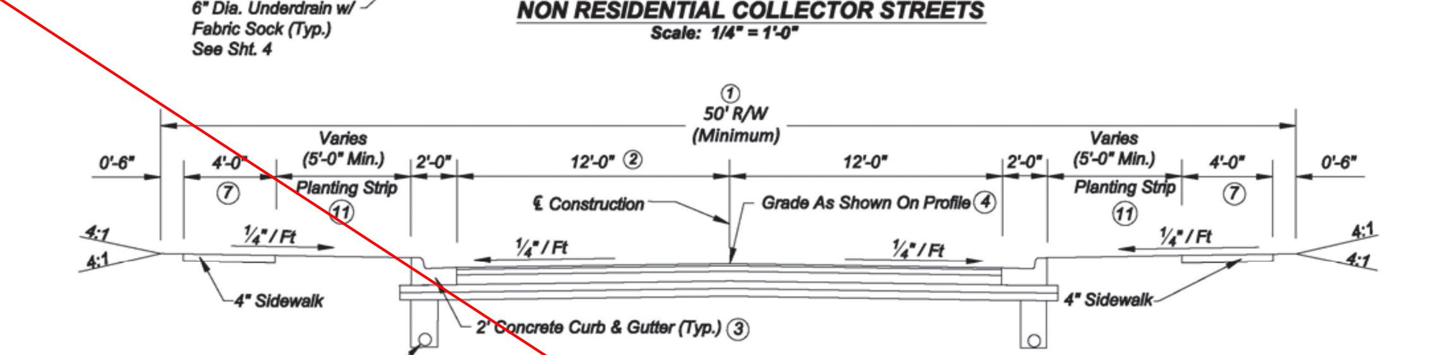
NON RESIDENTIAL COLLECTOR STREETS
Scale: 1/4" = 1'-0"



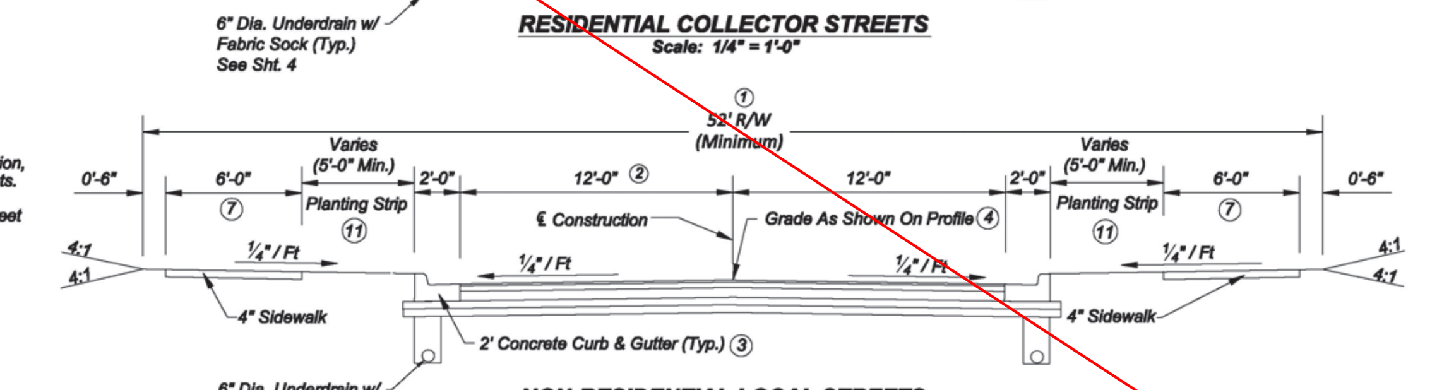
RURAL STREETS
Scale: 1/4" = 1'-0"

NOTE:

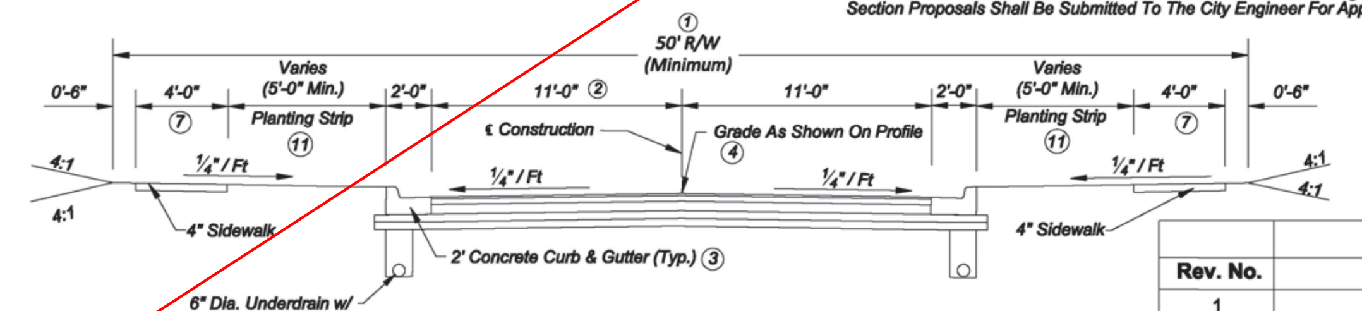
Dimensions For Rural Street Sections Shall Be Site-Specific Based Upon Street Classification, Design Speed, Utility Requirements, Drainage Requirements, And Clear Zone Requirements. At A Minimum, Rural Lane, Shoulder, And Ditch/Clear Zone Dimensions Shall Meet The Criteria Set Forth In The Most Recent Version Of The INDOT Design Manual. All Rural Street Section Proposals Shall Be Submitted To The City Engineer For Approval Prior To Design.



RESIDENTIAL COLLECTOR STREETS
Scale: 1/4" = 1'-0"



NON-RESIDENTIAL LOCAL STREETS
Scale: 1/4" = 1'-0"



RESIDENTIAL LOCAL STREETS
Scale: 1/4" = 1'-0"

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	References To New UDO, Added Rural Section, Revised Design Tables	01/10/2014
3	Updated Entire Set	02/11/2020

CITY OF SHELBYVILLE — RIGHT-OF-WAY — SHEET 2 OF 18

GENERAL DEVELOPMENT NOTES

1.) Both The Subdivision Developer And The Individual Lot Builder Are Responsible To Construct New Residential Lots In Accordance With The Details Established In The City Of Shelbyville Construction Standard Details, Latest Revision.

2.) An Erosion Control Plan Shall Be Submitted To The City Of Shelbyville. Such Plan Shall Require That A Minimum Of 4 Inches Topsoil Shall Be Placed And Graded Prior To Final Permanent Seeding.

3.) This Sheet Is NOT All Inclusive For The Unified Development Ordinance Regulations. All New Developments Shall Comply With The City of Shelbyville Unified Development Ordinance.

4.) Monuments Shall Be Placed For The Purpose Of Accurately Denoting The Center Of Each Roadway. At A Minimum, Monuments Shall Be Placed At Points Of Tangency, Points Of Curvature, And Roadway Intersections.

5.) The External Boundary Of The Development / Subdivision Shall Be Monumented As Denoted On The Final Plat. Monuments Shall Be Placed At All Corner And Deflection Points Of The External Boundary. Two Markers Shall Be Placed At The Points Of Tangency At A Rounded Boundary Corner Or Arc.

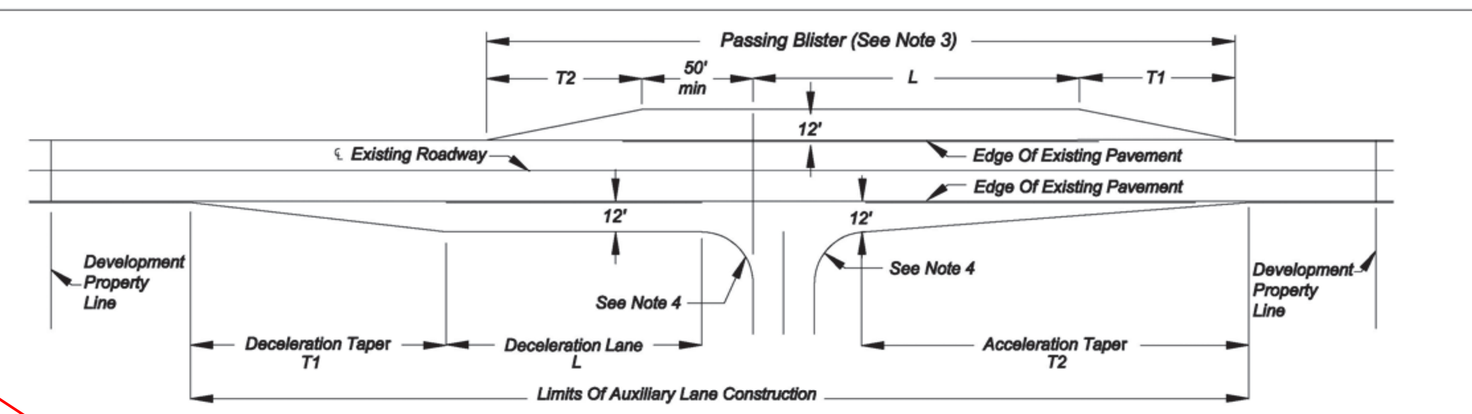
6.) Each Individual Lot Corner And Internal Angle Point Shall Be Monumented. Two Markers Shall Be Placed At The Points Of Tangency At A Rounded Lot Corner Or Arc.

7.) All External Boundary And Individual Lot Monuments Shall Be Installed Before Acceptance Of Final Plat, Unless Otherwise Approved by Planning Department. All Roadway Monuments Shall Be Installed Within Six (6) Months Of Placement Of Pavement Surface. All Monumentation Shall Be In Place Prior To The Acceptance Of The Public Improvements By The Board Of Public Works And Safety.

8.) A Land Surveyor, Registered In The State Of Indiana, Shall Attest To The Accuracy Of The Installed Monuments. Attestment Certifying All Monumentation Has Been Placed Shall Be Delivered As Soon As All Monumentation Has Been Placed. Attestment Must Be Received Prior To Release Of Surety / Bond. Certified Statements Of Attestment Shall Be Submitted To The Shelbyville Plan Commission.

9.) All Monuments Shall Be Constructed In Accordance With The Monument Details Shown On This Sheet.

10.) Monuments Which Are Damaged, Buried, Or Altered Shall Be Reset By Party Responsible For Damage/Alteration.



ENTRANCE NOTES:

1.) Acceleration / Deceleration Lanes Shall Be Constructed For All New Development Entrances Which Connect To An Arterial Or Collector Roadway. Passing Blister(s) May Also Be Required By The City. The City Reserves The Right To Require A Traffic Study To Determine Traffic Impacts And Any Additional Roadway Improvements Necessary To Mitigate Adverse Impacts.

2.) The City Reserves The Right To Require Lane Widening, Surface Milling, Resurfacing, New Roadway Markings, And/Or Any Additional Improvements Deemed Necessary By The City On Existing Roads Adjacent To New Site Or Subdivision Entrances.

3.) The City May Require A Passing Blister At The Intersection Of A Site Or Subdivision Entrance. Passing Blisters Shall Be Designed In Accordance With The Most Recent Version Of The INDOT Design Manual.

4.) Minimum Corner Radius Shall Be In Accordance With Table 1, Item (6) On Sheet 2.

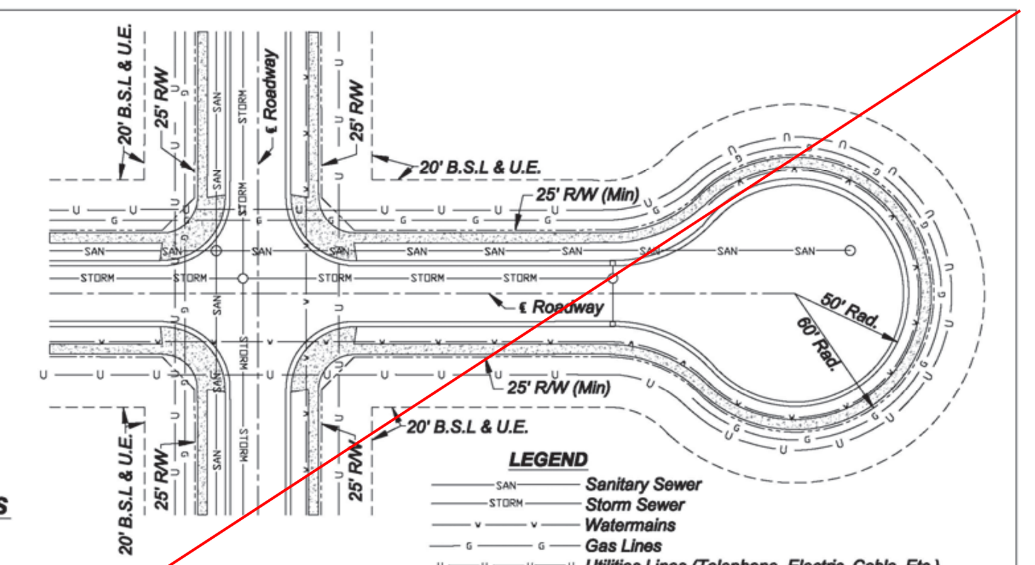
5.) All Above Surface Utilities, Structures, Plantings, Or Other Conflicts Within 12 Feet Of Roadway Improvements, Including Accel/Decel Lanes And Passing Blisters, Shall Be Removed Or Relocated Prior To Construction Of Roadway Improvements.

6.) Construction Plans Shall Include Centerline Profile And Cross Sections Of Existing Road Being Intersected By The Entrance.

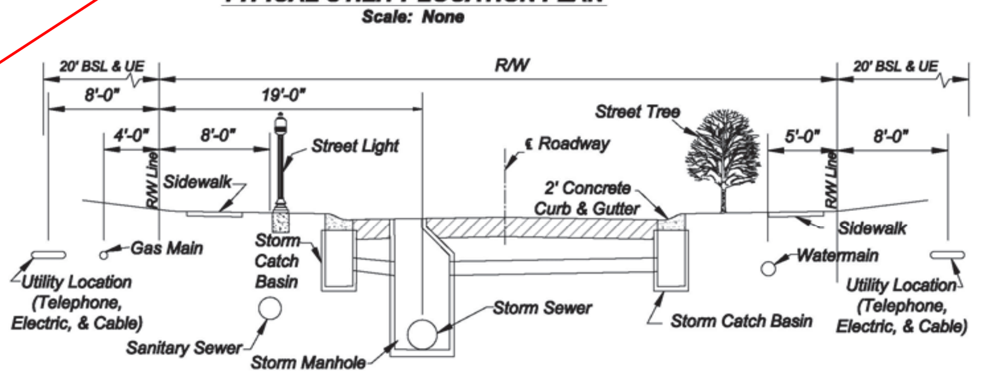
MINIMUM SITE / SUBDIVISION ENTRANCE STANDARD
Scale: None

TABLE 6: MINIMUM AUXILIARY LANE DIMENSIONS

DESIGN SPEED (mph)	T1 (ft)	L (ft)	T2 (ft)
30 or Less	100	100	100
35	150	150	100
40	150	200	150
45	200	250	200
Greater Than 45	Refer To INDOT Standards. Shall Be Based On Design Speed.		



TYPICAL UTILITY LOCATION PLAN
Scale: None



TYPICAL UTILITY LOCATION SECTION
Scale: None

UTILITY NOTES

1.) Utility Layout Within The Right-Of-Way And Utility Easements Shall Be As Shown In The Typical Details On This Sheet. The Location Of Proposed Utilities Are So Indicated To Ensure The Orderly Development Of The Land. Requests To Change The Location of The Proposed Utilities Shall Be Submitted In Writing To The City Engineer And Planning Commissioner. Utilities Not Meeting These Requirements Shall Be Removed And Replaced As Directed By The City Engineer And / Or Planning Commissioner At No Expense To The City.

2.) All Utility Street Cuts And Trenches Shall Be In Accordance With The City Standard Details Shown On Sheet 7.

3.) All Newly Installed Utilities Shall Be Placed Underground Except For Drops Or Laterals That Serve An Individual Structure Or Service.

4.) Telephone/Fiber, Electric, And Cable Shall Be Placed In Joint Trench. If Joint Trench Is Not Possible, Approval For Alternate Placement Must Be Granted By The City Engineer And Plan Commissioner In Writing.

5.) Abandoned Utility Infrastructure Shall Be Completely Removed After Activating Newly Constructed, Upgraded, Or Relocated Facilities. Underground Pipes/Conduits Shall Be Capped And Filled With Flowable Fill If Not Removed. Trenches Shall Be Properly Backfilled As Noted In The City Standards.

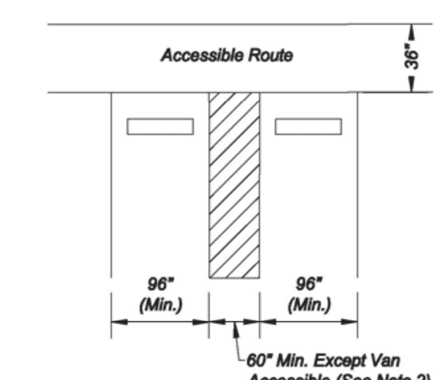
6.) Storm Sewers, Fiber, Telephone, Cable, And/Or Electric May Alternatively Be Placed In Public Easements Outside Of The Right-Of-Way To Facilitate Site Drainage And Overall Utility Layout. Utilities Other Than Storm Sewers Shall Not Be Placed In Drainage Swales.

7.) All Concrete, Asphalt, And Aggregate Materials Shall Be Produced And/Or Supplied From An INDOT Approved Source And Meet INDOT Specifications. Variance From INDOT Specifications May Only Be Done So When Directed By The City Engineer.

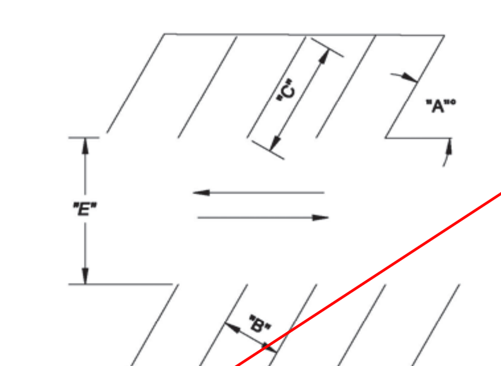
8.) Street Lights And Street Trees Shown Herein Are Conceptual Only And Based Upon The City Of Shelbyville Unified Development Ordinance. Street Lights and Street Trees Shall Be Located To Avoid Conflicts With All Utilities. Potential Damage To Utilities, Sidewalks, Curbs, Or Other Infrastructure Shall Be Considered When Selecting Street Tree Species. The City Reserves The Right To Remove Any Street Tree Or Street Light Placed Within The Right-Of-Way That Is Deemed By The City To Pose A Threat To Any Infrastructure Or Utility. The City Of Shelbyville Shall Not Be Liable For Replacement Of Or Compensation For Any Street Light Or Street Tree That Is Removed From The Right-Of-Way, Whether Or Not Such Street Light Or Street Tree Is In Compliance With The Unified Development Ordinance.

9.) City Is Not Responsible For Maintaining, Repairing, Or Replacing Non-Public Infrastructure Within Right-Of-Way. Non-Public Infrastructure Includes, But Is Not Limited To, The Following: Landscaping, Irrigation Systems, Pet Containment Systems, And/Or Fences.

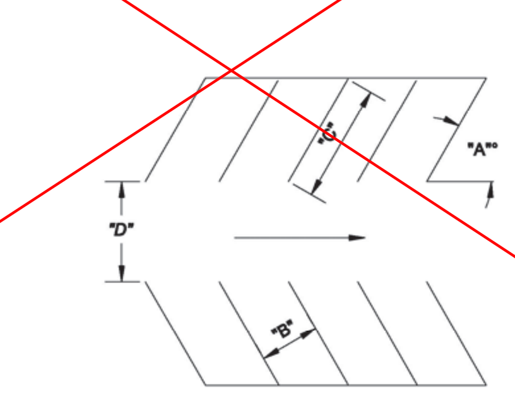
10.) Any Work Within The Rights-Of-Way Or Public Easements Shall Obtain The Appropriate Permits From The Engineering Department. Failure To Obtain The Proper Permits As Required May Result In Penalties As Provided In City Ordinance 10.99. See General Note #2 on Sheet 1.



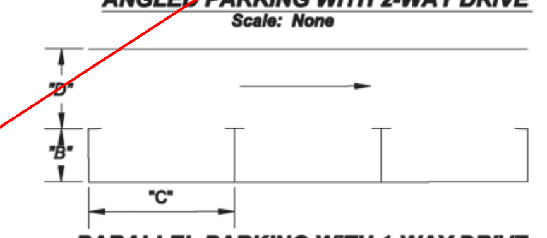
ACCESSIBLE PARKING SPACE
Scale: None



ANGLED PARKING WITH 2-WAY DRIVE
Scale: None



ANGLED PARKING WITH 1-WAY DRIVE
Scale: None



PARALLEL PARKING WITH 1-WAY DRIVE
Scale: None

TABLE 7: MINIMUM PARKING STANDARD DIMENSIONS

ANGLE OF PARKING "A"	STALL WIDTH "B"	STALL LENGTH "C"	DRIVE WIDTH ONE-WAY "D"	DRIVE WIDTH TWO-WAY "E"
61° - 90°	9'	18'	18'	26'
46° - 60°	9'	23.6'	15'	24'
1° - 45°	9'	27.6'	12'	22'
PARALLEL	9'	22'	12'	22'

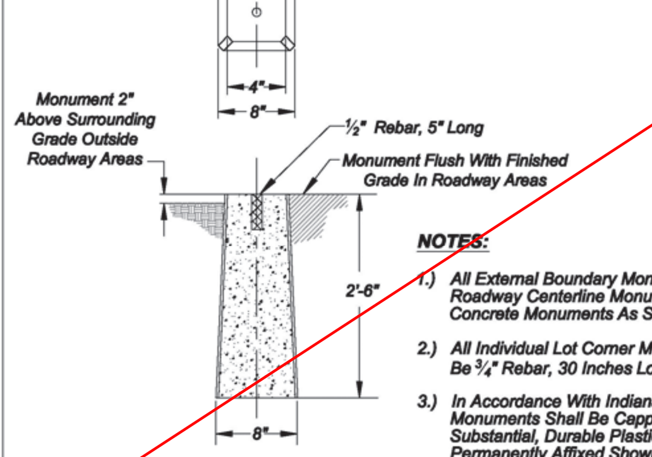
PARKING STANDARDS:

1.) For Purposes Of Measurements, Drives With Parking On One Side Only Shall Be Considered As One-Way Drives.

2.) Dimensions Shown For Parking Spaces Are Minimums.

3.) Pavement Sections For Parking Areas Shall Comply With The Standard Parking Lot Criteria Shown On Sheet 4 Of These Standards. Pavement Sections Shall Be Selected Based Upon Design Traffic Loading. A Modified Pavement Section May Be Required If Deemed Necessary By The City Engineer.

4.) Parking Shall Comply With City's Unified Development Ordinance.



MONUMENT DETAIL
Scale: None

NOTES:

1.) All External Boundary Monuments And Roadway Centerline Monuments Shall Be Concrete Monuments As Shown.

2.) All Individual Lot Corner Monuments Shall Be 3/4" Rebar, 30 Inches Long.

3.) In Accordance With Indiana Code, All Monuments Shall Be Capped With A Substantial, Durable Plastic Or Metal Cap Permanently Affixed Showing The Registered Land Surveyor's Identification Information.

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	References To New UDO, Added Monument Detail	01/10/2014
3	Updated Entire Set	02/11/2020

CITY OF SHELBYVILLE — RIGHT-OF-WAY, SITE DEVELOPMENT STANDARDS — SHEET 3 OF 18

PAVEMENT CONSTRUCTION

GENERAL NOTES

1.) The Pavement Construction Details Shown On This Sheet Are Minimum Standards Required By the City of Shelbyville. The City Engineer Or Street Commissioner May Require A Modified Pavement Design Based On Site Conditions Or Traffic Volumes. Geotechnical Testing Shall Be Required For Arterials And Non-Residential Collectors.

2.) The Roadway Pavement Cross Section Shall Be Completed Within 60 Calendar Days From The Start Of The Subgrade Treatment. For Flexible Pavements, The Surface Asphalt Course May Be Placed More Than 60 Calendar Days After Subgrade Treatment, But Shall Be Placed Within Two Calendar Years Of Placement Of Asphalt Intermediate Course, Except When Approved Otherwise By The City Engineer And/Or Street Commissioner. Surface Asphalt Installed After Any Delay Shall Have Tack Coat Placed Prior To Installation.

3.) All Concrete, Asphalt, And Aggregate Materials Shall Be Produced And/Or Supplied From An INDOT Approved Source And Meet INDOT Specifications. Variance From INDOT Specifications May Only Be Done So When Directed By The City Engineer.

4.) Pervious Pavements May Be Used In Parking Lots, Private Driveways, Private Local Streets, And Other Areas Not To Be Dedicated For City Rights-Of-Way Or Easements. Pervious Pavements Shall Be Designed And Constructed In Accordance With Current Industry Standards. Owner(s) Shall Be Responsible For All Maintenance Of Pervious Pavements.

SUBBASE AND SUBGRADE REQUIREMENTS

5.) Subbase And Subgrade Shall Be Compacted To At Least 100 Percent Of The Maximum Dry Density, At Optimum Moisture Content In Accordance With A.A.S.H.T.O. T99 To A Minimum Depth Of 16 Inches For All Local Streets And 24 Inches For All Collector And Arterial Streets. Compaction Tests Shall Be At The Contractor's Expense And Shall Be Performed By An Independent Laboratory. Test Results Shall Be Submitted To The Shelbyville City Engineer And Street Commissioner Prior To Placing Any Material On The Subbase Subgrade. One In-Place Density Test Shall Be Completed For Each Lift For Every 400 Linear Feet Of Traffic Lanes. One Lift Of Structural Fill Shall Not Be More Than 6 Inches In Thickness. At The Discretion Of The City Engineer Or The Street Commissioner, The Compaction Testing May Be Waived And The Adequacy Of Subbase And Subgrade Shall Be Determined Solely By Either The Shelbyville City Engineer Or Street Commissioner Based On A Contractor Performed Proof-Roll With A Fully Loaded Tri-Axle Dump Truck. The Type Of Compacted Crushed Aggregate Base Or Subbase Shall Be In Accordance With The Most Recent INDOT Standard Specifications For Aggregates (Section 904). Coarse Aggregate Shall Not Be Placed On Frozen Subbase Or Subgrade.

6.) Proof Roll Tests Shall Be Passed Prior To Placement Of Underdrains And First Lift Of Roadway Base Material. Proof Roll Tests Shall Not Be Conducted On Frozen Subgrade. The Temperature For The Previous 72 Hours Prior To The Proof Roll Test Shall Be Above 32°F. Subgrade Shall Be Free From Excess Moisture. If It Rains After A Proof Roll, The Contractor Is Required To Perform Another Proof Roll.

7.) Areas In Which Failures Occur During Proof Roll Test Are To Be Marked In The Field By The City Of Shelbyville. Failures Shall Be Corrected And Retested Until Passing Inspection.

8.) The City Engineer And/Or Street Commissioner May Require Additional Measures If Subgrade Or Subbase Is Determined To Be Inadequate. Contractor Shall Take Measures To Ensure Adequate Subgrade And Subbase As Directed By The City Engineer And/Or Street Commissioner. Additional Measures May Include, But Are Not Limited To, One Or More Of The Following:
   - a. Chemical Modification Of Subgrade Soils
   - b. Excavation Of Unsuitable Material
   - c. Placement Of Tensar TX160 Geogrid
   - d. Additional Compaction
   - e. Increase In Depth Of Aggregate Base
   - f. Modification Of Pavement Section

9.) If Deemed Necessary By The City Engineer And/Or Street Commissioner, Chemical Modification Of The Subgrade Soils Shall Be Performed In Accordance With INDOT Standard Specifications Section 215, Most Recent Version. The Depth Of Chemical Modification Shall Be To Minimum Depth Of 14 Inches. Following Soil Modification, Compaction Shall Be Performed Until The Modified Layer Has A Density Not Less Than 100% Of The Maximum Dry Density, Or The Zone Below The Modified Layer Has A Density Not Less Than 95% Of The Maximum Dry Density, At Optimum Moisture Content. Maximum Dry Densities Shall Be Determined In Accordance With A.A.S.H.T.O. T99. The Mix Design Shall Be Determined In Accordance With INDOT Design Procedures For Soil Modification Or Stabilization. The Proposed Design And Construction Procedure For Modification Or Stabilization Shall Be Submitted To The City Engineer And Street Commissioner For Approval. If The City Engineer And/Or Street Commissioner Determine That The Soil Modification Is Unsatisfactory, Contractor Shall Take Additional Measures At The Direction Of The City Engineer And/Or Street Commissioner As Stated In Note 6 On This Sheet.

10.) Compaction And Testing For Aggregate Base Lifts Shall Meet The Requirements Set Forth For Subbase And Subgrade In Notes 5,6,7, And 8 On This Sheet.

FLEXIBLE PAVEMENT REQUIREMENTS

11.) Specifications For Asphalt Paving Operations, Placement Methods, And Weather Limitations Shall Conform To The Most Current INDOT Specifications Sections 402. The Contractor Shall Be Responsible For All Aspects Of Process Control Of The Mixtures Insuring They Meet All Other Requirements Of The INDOT Standard Specifications. All Test Data Shall Be Submitted To The City Engineer And Street Commissioner For Review.

12.) Tack Coat Shall Be Placed In Accordance With The Most Recent INDOT Standard Specifications For Asphalt Pavements.

13.) Roadways Which Have Exposed Milled Areas Shall Place And Compact Temporary Asphalt Pavement, Cold Mix Or Hot Mix, At The Milled Joints To Smooth The Transition Between The Milled Surface And Unmilled Surface.

RIGID PAVEMENT REQUIREMENTS

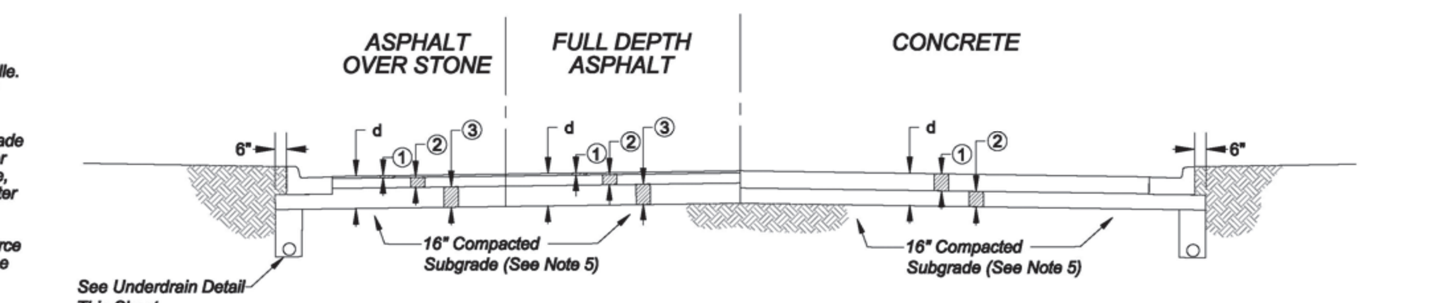
14.) Specifications For Portland Cement Concrete Pavement (PCCP) Paving Operations, Placement Methods, And Weather Limitations Shall Conform To The Most Current INDOT Specifications Section 502. The Conractor Shall Be Responsible For All Aspects Of Process Control Of The Mixtures Insuring They Meet All Other Requirements Of The INDOT Standard Specifications. All Test Data Shall Be Submitted To The City Engineer And Street Commissioner For Review.

15.) All PCCP Pavement Shall Be Cured With An Approved White Pigmented Liquid Membrane Forming Compound In Accordance With INDOT Standard Specifications 501.20 and 504, Most Recent Version.

16.) For Cold-Weather Concrete Placement, Contractor Shall Comply With Provisions Of ACI 306R For Protection From Physical Damage Or Reduced Strength. For Hot-Weather Concrete Placement, Contractor Shall Comply With Provisions Of ACI 305R For Protection From Physical Damage Or Reduced Strength, As Associated With Rapid Moisture Loss.

17.) Wherever Rigid Pavement Is To Be Used, The Contractor Shall Submit A Detailed Paving Plan To The City Engineer And/Or Street Commissioner For Approval. The Paving Plan Shall Show The Location And Type Of Jointing (Construction, Contraction, And Expansion Joints) To Be Used In The Construction. The Location And Type Of Jointing Shall Meet The Requirements Of The Most Recent INDOT Standard Details And Specifications.

18.) For Local Residential Streets And Parking Lots With Concrete Pavement, 4 Inch Compacted INDOT No.8 Aggregate Base May Be Waived By The City Engineer And/Or Street Commissioner If Adequate Subgrade Is Present. Adequacy Of Subgrade Shall Be Determined Solely By The City Engineer And/Or Street Commissioner Based On A Contractor Performed Proof-Roll With A Fully Loaded Tri-Axle Dump Truck.



LOCAL RESIDENTIAL STREETS

ASPHALT OVER STONE
d = 13 1/2"
(1) 1 1/2" HMA Surface Type B (165 #/SY)
(2) 4" HMA Intermediate Type B (440 #/SY)
(3) 8" Compacted INDOT No. 53 Crushed Aggregate Base (2 Lifts)

FULL DEPTH ASPHALT
d = 9 1/2"
(1) 1 1/2" HMA Surface Type B (165 #/SY)
(2) 3" HMA Intermediate Type B (330 #/SY)
(3) 5" HMA Base Type B (550 #/SY)

CONCRETE
d = 10"
(1) 6" Concrete Pavement
(2) 4" Compacted INDOT No.8 Crushed Aggregate Base

RESIDENTIAL COLLECTOR AND NON-RESIDENTIAL LOCAL STREETS

ASPHALT OVER STONE
d = 16 1/2"
(1) 1 1/2" HMA Surface Type B (165 #/SY)
(2) 3" HMA Intermediate Type B (330 #/SY) Over 4" HMA Base Type B (440 #/SY)
(3) 8" Compacted INDOT No. 53 Crushed Aggregate Base (2 Lifts)

FULL DEPTH ASPHALT
d = 12"
(1) 1 1/2" HMA Surface Type B (165 #/SY)
(2) 3" HMA Intermediate Type B (330 #/SY)
(3) 3 1/2" HMA Base Type B (385 #/SY) Over 4" HMA Base Type B (440 #/SY)

CONCRETE
d = 11"
(1) 7" Concrete Pavement
(2) 4" Compacted INDOT No. 8 Crushed Aggregate Base

NON-RESIDENTIAL COLLECTOR AND ARTERIAL STREETS

ASPHALT OVER STONE
d = 17 1/2"
(1) 1 1/2" HMA Surface Type C (165 #/SY)
(2) 3" HMA Intermediate Type C (330 #/SY) Over 5" HMA Base Type C (550 #/SY)
(3) 8" Compacted INDOT No. 53 Crushed Aggregate Base (2 Lifts)

FULL DEPTH ASPHALT
d = 13"
(1) 1 1/2" HMA Surface Type C (165 #/SY)
(2) 3" HMA Intermediate Type C (330 #/SY)
(3) 4" HMA Base Type C (440 #/SY) Over 4 1/2" HMA Base Type C (495 #/SY)

CONCRETE
d = 12"
(1) 8" Concrete Pavement
(2) 4" Compacted INDOT No. 8 Crushed Aggregate Base

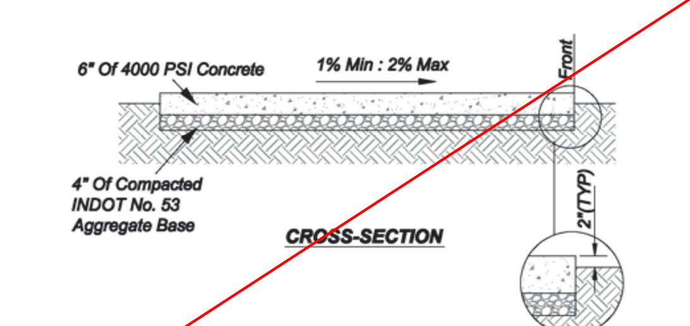
INDUSTRIAL STREETS
To Be Determined By The City Based Upon Traffic Volume, Street Design Speed, And Soil Conditions

RURAL STREETS
To Be Determined By The City Based Upon Traffic Volume, Street Design Speed, And Soil Conditions

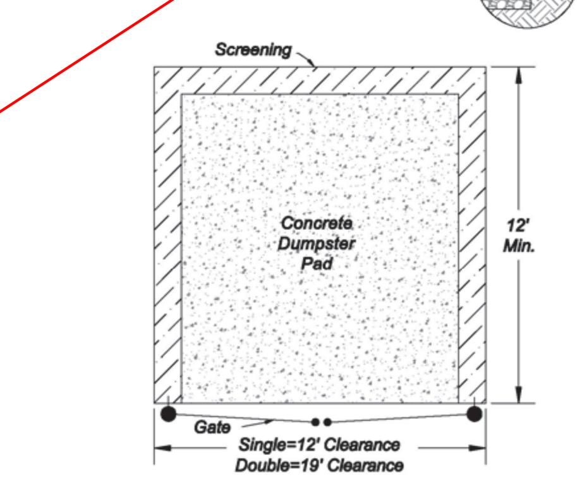
PARKING LOTS

Design Professional Shall Design Pavement Sections For Parking Lots Based On Site Subgrade Conditions, Use, And Expected Loading. Parking Lot Pavement Design Shall Be Subject To Approval By The City Engineer. At Minimum, Parking Lot Pavement Sections Shall Meet The Following Criteria:

LIGHT (General Car & Light Truck Parking):	1 1/2" HMA Surface Type B Over 2" HMA Intermediate Type B Over 6" Compacted Aggregate #53
MEDIUM (Access Roads & Drives, Store Frontage, Fuel/Service Stations):	Same Criteria As Local Residential Streets
HEAVY (Truck Loading Areas, Heavy Truck Parking, Warehouse And Industrial Areas):	Same Criteria As Arterial Streets



CROSS-SECTION



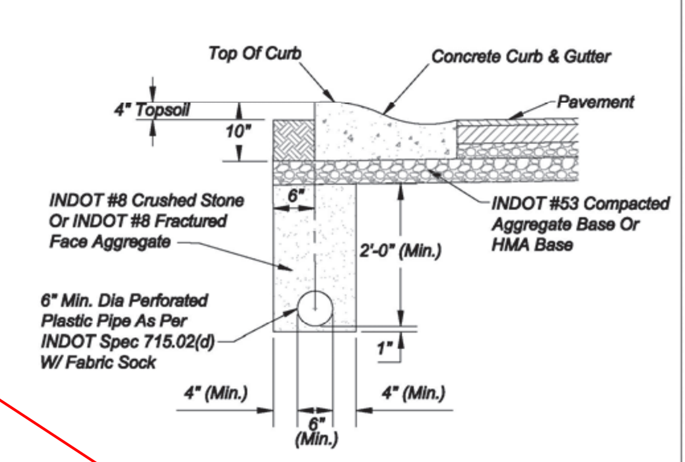
PLAN

NOTES:

1.) Screening Shall Meet All Requirements Set Forth In The Unified Development Ordinance.

2.) Concrete Pad Shall Be Reinforced With 6x6wwf Or #5 Bars @ 18" O.C. If Deemed Necessary By The City Engineer.

CONCRETE DUMPSTER PAD DETAIL
Scale: None

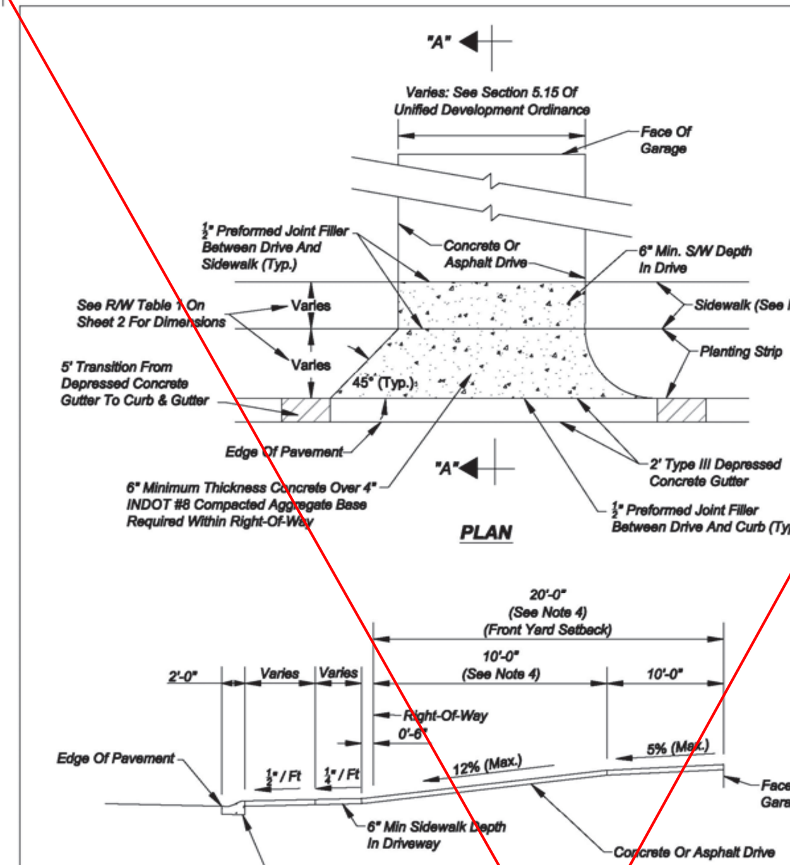


UNDERDRAIN DETAIL
Scale: None

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	References To New UDO, Revised Underdrain Detail, Added Rural Section	01/10/2014
3	Updated Entire Set	02/11/2020

CITY OF SHELBYVILLE — PAVEMENT DETAILS AND NOTES — SHEET 4 OF 18

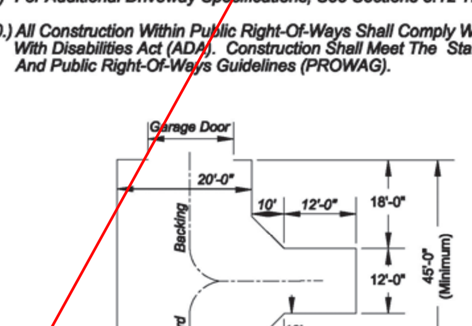
TYPICAL SUBDIVISON RESIDENTIAL PRIVATE DRIVE



TYPICAL SUBDIVISON RESIDENTIAL PRIVATE DRIVE
Scale: None

RESIDENTIAL DRIVES NOTES

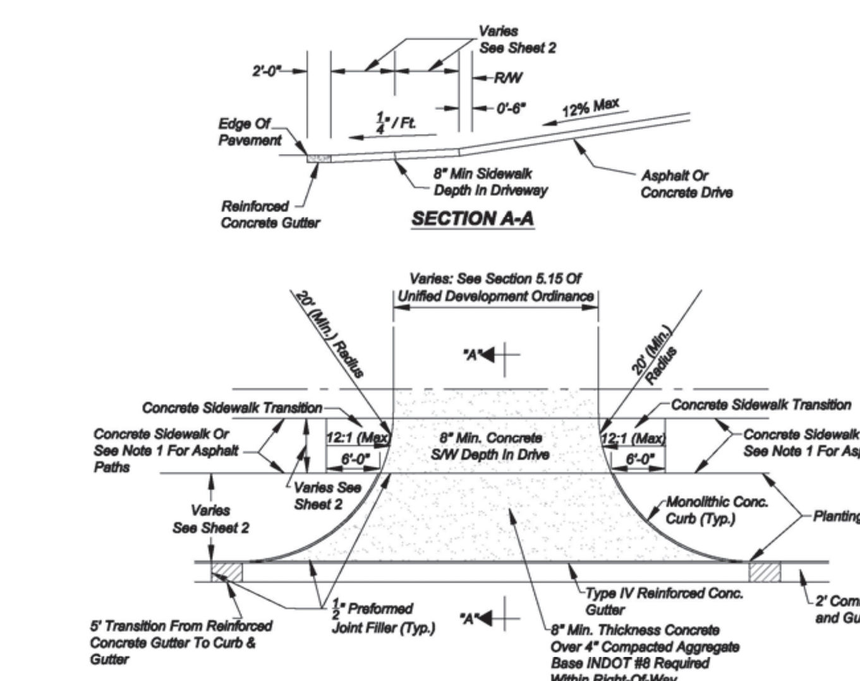
1.) The Maximum Algebraic Difference In Grades For Any 10 Foot Interval Shall Not Exceed 8% For Crest Vertical Curves, Nor 10% For Sag Vertical Curves.
2.) Frontage Of All Lots Shall Drain To Adjacent Streets Unless Otherwise Approved By The City Engineer.
3.) Concrete Drives Require Control Joints At A Maximum Of Every 10 Feet Each Way.
4.) Use Actual Setback As Shown On Plat And As Provided By The City Of Shelbyville Unified Development Ordinance.
5.) When A Private Drive Requires A Pipe To Ensure Proper Storm Drainage, The Pipe Shall Be Designed By A Registered Engineer Or Land Surveyor. The Pipe Shall Have End Sections At Both The Upstream And Downstream Ends. The Ends Of The Pipe Shall Extend A Minimum Of 4 Feet Beyond The Limits Of The Drive Surface. Minimum Pipe Size Shall Be 12 Inches.
6.) Concrete Drive Approaches Shall Be Constructed In Accordance With Sections 502 And 504 Of The Most Recent Version Of The Indiana Department Of Transportation Standard Specifications.
7.) Refer To Sheet 2 For Required Width Of Concrete Sidewalk.
8.) Drives Shall Provide Positive Drainage Toward The Roadway. Slope Between The Curb And Sidewalk Shall Be Between 0.6% And 4%. Slope Along Sidewalk Shall Not Exceed 2% Per ADA Requirements. Slope Behind The Sidewalk Shall Be Between 1% And 12%.
9.) For Additional Driveway Specifications, See Sections 5.12 Through 5.15 Of The City Of Shelbyville Unified Development Ordinance.
10.) All Construction Within Public Right-Of-Ways Shall Comply With The Most Recent Version Of The Requirements Of The Americans With Disabilities Act (ADA). Construction Shall Meet The Standards Set Forth In The Current ADA Accessibility Guidelines (ADAAG) And Public Right-Of-Ways Guidelines (PROWAG).



STRAIGHT IN - BACK OUT
PRIVATE DRIVE TURN-AROUND
Scale: None

PRIVATE DRIVE TURN AROUND:

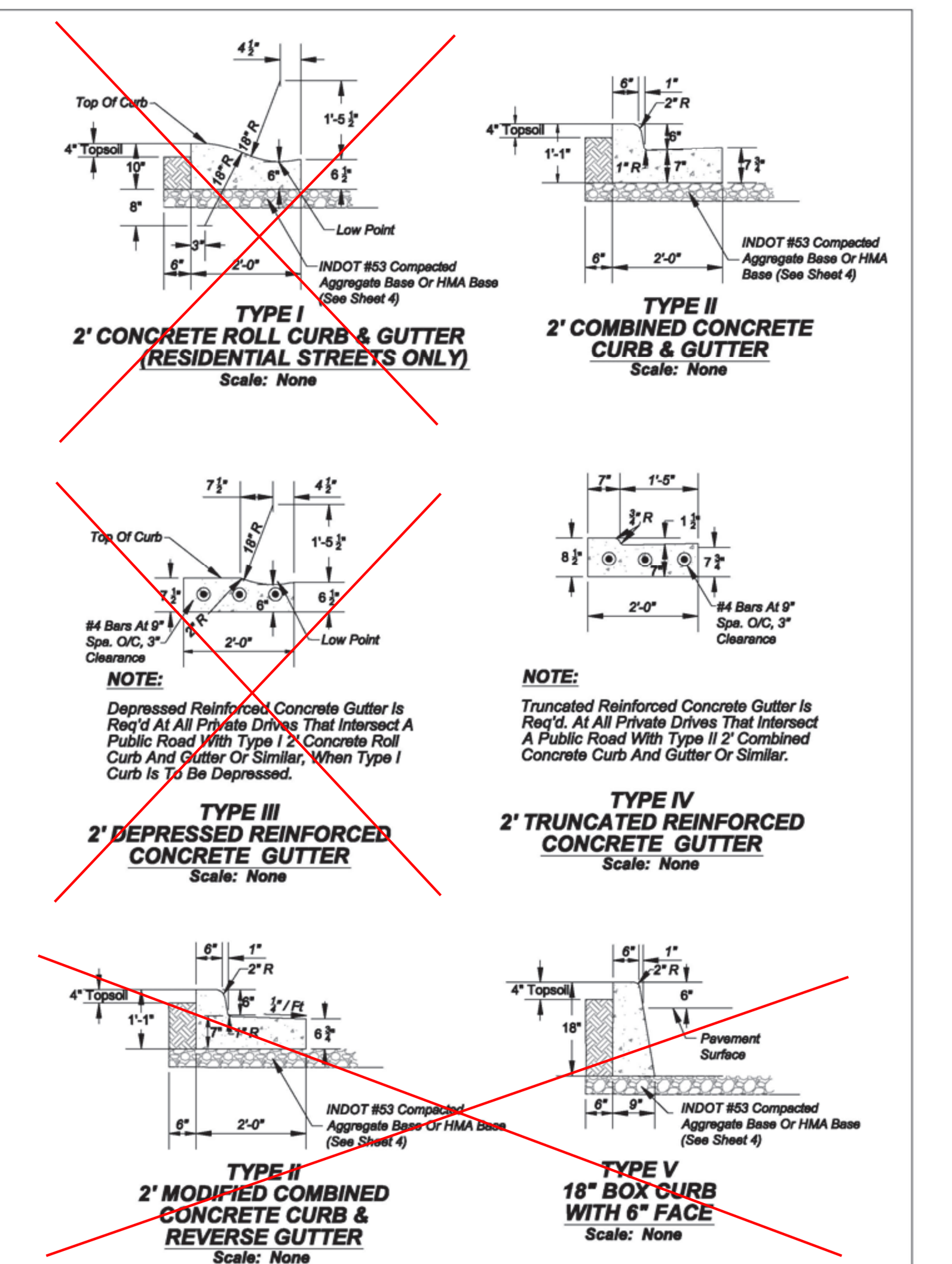
1.) Any Residential Lot That Fronts Onto A Road Classified As Either A Collector Or An Arterial Roadway Shall Have A Private Drive Turn Around.
2.) See The Typical Subdivision Private Drive Detail On This Sheet For Additional Drive Requirements.



TYPICAL COMMERCIAL PRIVATE DRIVE
Scale: None

COMMERCIAL PRIVATE DRIVE NOTES

1.) Asphalt Path Terminations Within The Public Right-Of-Way At Commercial Drives, Private Drives, Or Approaches Shall Be Accomplished With A 6' Minimum Length Of Concrete Sidewalk Transition (Increased Length Of Concrete Sidewalk Transition As Required To Meet The 12:1 Maximum Slope Requirement) So That The Asphalt Path Meets The Concrete Sidewalk Transition At A Neat Line Perpendicular To The Path Alignment.
2.) The Maximum Algebraic Difference In Grades For Any 10 Foot Interval Shall Not Exceed 8% For Crest Vertical Curves Nor 10% For Sag Vertical Curves.
3.) Concrete Drives Require Control Joints At A Maximum Of Every 10 Feet Each Way.
4.) Use Actual Setback As Shown On Plat And As Provided By The City Of Shelbyville Unified Development Ordinance.
5.) When A Private Drive Requires A Pipe To Ensure Proper Storm Drainage, The Pipe Shall Be Designed By A Registered Engineer Or Land Surveyor. The Pipe Shall Have End Sections At Both The Upstream And Downstream Ends. The Ends Of The Pipe Shall Extend A Minimum Of 4 Feet Beyond The Limits Of The Drive Surface. Minimum Pipe Size Shall Be 12 Inches.
6.) Concrete Drive Approaches Shall Be Constructed In Accordance With Sections 502 And 504 Of The Most Recent Version Of The Indiana Department Of Transportation Standard Specifications.
7.) Drives Shall Provide Positive Drainage Toward The Roadway. Slope Between The Curb And Sidewalk Shall Be Between 0.6% And 4%. Slope Along Sidewalk Shall Not Exceed 2% Per ADA Requirements. Slope Behind The Sidewalk Shall Be Between 1% And 12%.
8.) For Additional Driveway Specifications, See Sections 5.12 Through 5.15 Of The City Of Shelbyville Unified Development Ordinance.
10.) All Construction Within Public Right-Of-Ways Shall Comply With The Most Recent Version Of The Requirements Of The Americans With Disabilities Act (ADA). Construction Shall Meet The Standards Set Forth In The Current ADA Accessibility Guidelines (ADAAG) And Public Right-Of-Ways Guidelines (PROWAG).



CURB & GUTTER CONSTRUCTION NOTES

1.) Removal And Replacement Of Existing Curb Shall Begin And End At The Nearest Joint.
2.) At The Point Where A Curb Ends, A 5 Ft. Transition Taper Down To Edge Of Pavement Grade Shall Be Constructed.
3.) Concrete Curbs Shall Be Constructed In Accordance With The Most Recent Version Of INDOT Standard Specifications Section 605. Control Joints Shall Be Spaced Maximum 10 Ft. Apart. Saw Cuts Or Tooled Joints Shall Be Vertical And Neat.
4.) For Cold-Weather Concrete Placement, Contractor Shall Comply With Provisions Of ACI 306R For Protection From Physical Damage Or Reduced Strength. For Hot-Weather Concrete Placement, Contractor Shall Comply With Provisions Of ACI 305R For Protection From Physical Damage Or Reduced Strength, As Associated With Rapid Moisture Loss.
5.) If Any Curb With Lettering Showing The Location Of A Utility Service Line (S,W,G,Etc.) Is Removed, Such Lettering Shall Be Placed In The New Curb At The Same Location As The Corresponding Utility Service Line. See Note 6 On Sheet 13.
6.) All Construction Within Public Right-Of-Ways Shall Comply With The Most Recent Version Of The Requirements Of The Americans With Disabilities Act (ADA). Construction Shall Meet The Standards Set Forth In The Current ADA Accessibility Guidelines (ADAAG) And Public Right-Of-Ways Guidelines (PROWAG).

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	ADA Compliance Notes, References To New UDO	01/10/2014
3	Updated Entire Set	02/11/2020

MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

SHELBYVILLE PRIDE IN PROGRESS

CITY OF SHELBYVILLE

CURB AND DRIVEWAY DETAILS AND NOTES

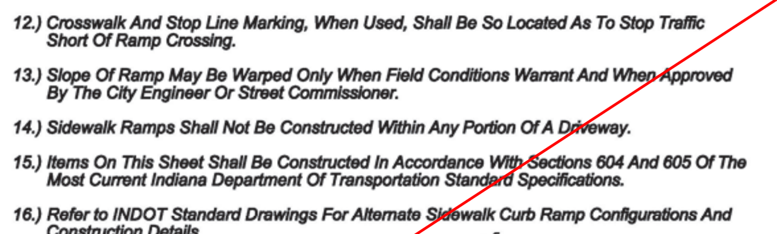
SHEET 5 OF 18

SIDEWALK CONSTRUCTION

1.) Care Shall Be Taken To Assure A Uniform Grade On All Ramps With No Grade Breaks.
2.) ½" Preformed Joint Filler Shall Be Incorporated At A Maximum Spacing Of 48 Feet Of Walk And When Abutting Concrete Curbs, Structures, Walls, Or Other Fixed Objects.
3.) Surface Texture Shall Be Obtained By A Coarse Brooming, Transverse To The Profile Of The Sidewalk.
4.) Distance Between Contraction Joints Shall Be Consistent Between Driveways.
5.) All Concrete Sidewalks Shall Be 4" Thick, Except At Residential Drive Crossings Where The Minimum Thickness Shall Be 6". At Commercial Drives, The Concrete Sidewalk Thickness Shall Be 8".
6.) Concrete Sidewalks Shall Be Constructed In Accordance With The Latest Version Of INDOT Specifications Section 604. Sawcuts Or Tooled Joints Shall Be Uniform, Vertical, And Neat.
7.) A Minimum Of 4" Thick Compacted Granular Base Or 4" Pea Gravel Bed Shall Be Placed Prior To The Construction Of The Sidewalk. Subgrade Should Be Compacted With Plate Compactor. Any Utility Trenches Should be Backfilled And Compacted Per City Standards.
8.) Sidewalk Longitudinal Grade Shall Be Within ± 1% Of The Adjacent Roadway's Longitudinal Grade Except At Curb Ramps.
9.) For Cold-Weather Concrete Placement, Contractor Shall Comply With Provisions Of ACI 306R For Protection From Physical Damage Or Reduced Strength. For Hot-Weather Concrete Placement, Contractor Shall Comply With Provisions Of ACI 305R For Protection From Physical Damage Or Reduced Strength, As Associated With Rapid Moisture Loss.
10.) All Sidewalks Within Public Right-Of-Ways Shall Comply With The Most Recent Requirements Of The Americans With Disabilities Act (ADA). Sidewalks Shall Meet The Standards Set Forth In The Current ADA Accessibility Guidelines (ADAAG) And Public Right-Of-Ways Guidelines (PROWAG).

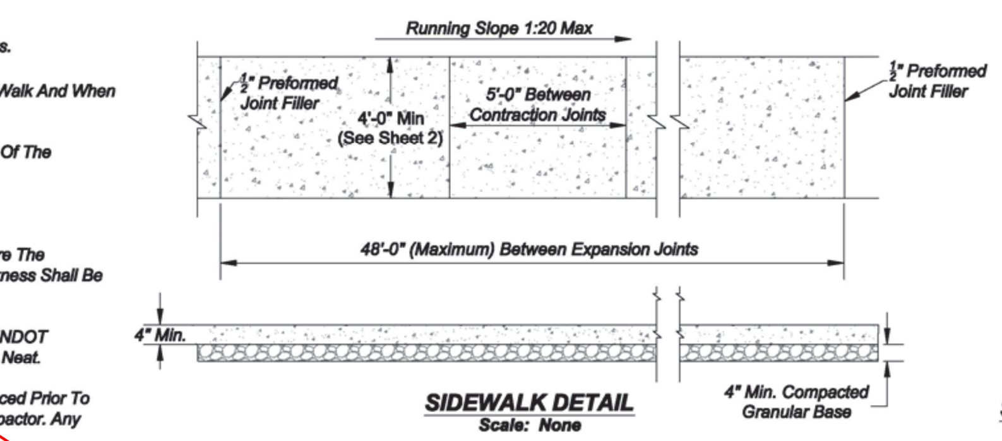
ADA SIDEWALK CURB RAMP CONSTRUCTION

1.) All ADA Sidewalk Curb Ramps Shall Comply With The Most Recent Requirements Of The Americans With Disabilities Act (ADA). ADA Ramps Shall Meet The Requirements Set Forth In The Current ADA Accessibility Guidelines (ADAAG) And Public Right-Of-Ways Guidelines (PROWAG). All Ramps Shall Comply With The Most Recent INDOT Standard Specifications And The City Of Shelbyville's Most Recent Standards. Curb Swipes Required For Curb Ramps Shall Be Provided At Time Of Initial Construction.
2.) Minimum Width Of Curb Ramp Shall Be 4 Feet Or Match Sidewalk Width, Whichever Is Greater, Not Including Flares. Maximum Vertical Slope Of Ramps Shall Be 12:1. Maximum Horizontal Slope Shall Be 50:1.
3.) ADA Curb Ramps Shall Be Located As Shown On The Plans Or As Directed By The City Engineer Or Street Commissioner.
4.) Type C Ramps Shall Be Provided Adjacent To Each Point Of Tangency At All Corners Of Every Street Intersection Where There Is An Existing Or Proposed Sidewalk And Curb. In Case Of "T"-Intersection, A Type C Ramp Shall Be Provided Adjacent To Each Corner Ramp. Type C Ramps Also Shall Be Provided At Walk Locations At Mid-Block In Vicinity Of Hospitals, Medical Centers Or Athletic Stadiums. The Use Of Details Contrary To Those Shown Herein Shall Require The Prior Written Approval Of The City.
5.) Ramps Shall Direct Pedestrians Perpendicularly Across Roadway To Another Ramp. Where A Ramp Abuts A Roadway, The Ramp Elevation Should Be Flush With The Roadway With No "Lip".
6.) Surface Texture Of The Ramp Shall Be That Obtained By A Coarse Brooming Transverse To The Slope Of The Ramp.
7.) Ramps Shall Be Provided On Both Sides Of A Driveway Whenever A Curbed Driveway Crosses A Sidewalk.
8.) Care Shall Be Taken To Assure A Uniform Grade On All Ramps With No Breaks In Grade.
9.) Drainage Structures Shall Not Be Placed In Line With The Ramps Except Where Existing Drainage Structures Are Being Utilized In The New Construction. Location Of The Ramps Shall Take Precedence Over Location Of Drainage Structures.
10.) The Normal Gutter Line Profile Shall Be Maintained Through The Area Of The Ramp.
11.) The Expansion Joint For The Ramp Shall Be A Maximum ½" Wide. The Top Of The Joint Filler For All Ramp Types Shall Be Flush With Adjacent Concrete.
12.) Crosswalk And Stop Line Marking, When Used, Shall Be So Located As To Stop Traffic Short Of Ramp Crossing.
13.) Slope Of Ramp May Be Warped Only When Field Conditions Warrant And When Approved By The City Engineer Or Street Commissioner.
14.) Sidewalk Ramps Shall Not Be Constructed Within Any Portion Of A Driveway.
15.) Items On This Sheet Shall Be Constructed In Accordance With Sections 604 And 605 Of The Most Current Indiana Department Of Transportation Standard Specifications.
16.) Refer To INDOT Standard Drawings For Alternate Sidewalk Curb Ramp Configurations And Construction Details.

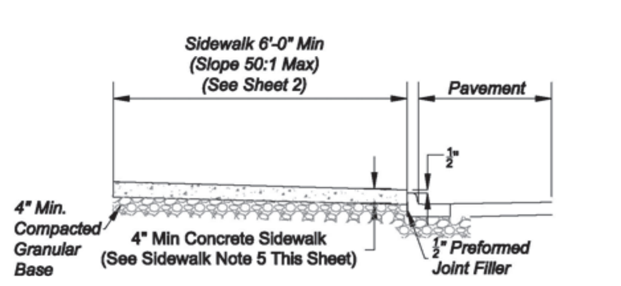


1" (110 #/SY) HMA, Surface Type A, 9.5mm, Over
3" (330 #/SY) HMA, Intermediate Type A, 19.0mm, Over
4" Compacted INDOT #53 Crushed Aggregate Base

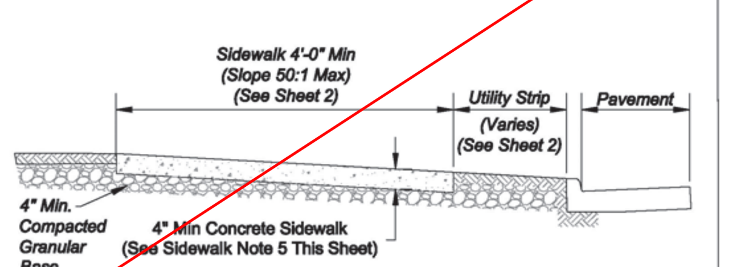
TYPICAL ASPHALT PATH CROSS SECTION
Scale: None



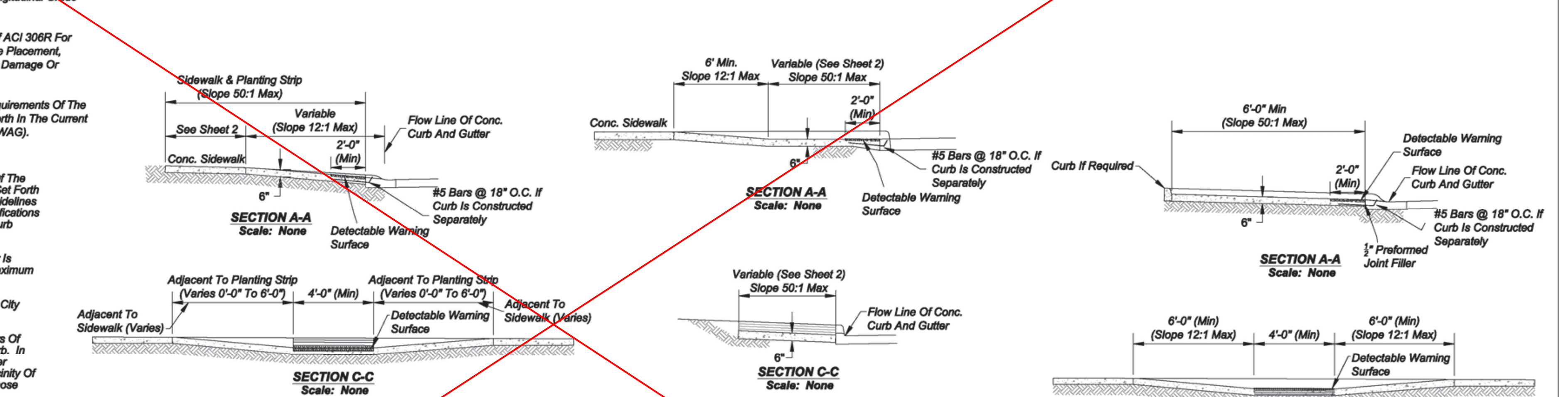
SIDEWALK DETAIL
Scale: None

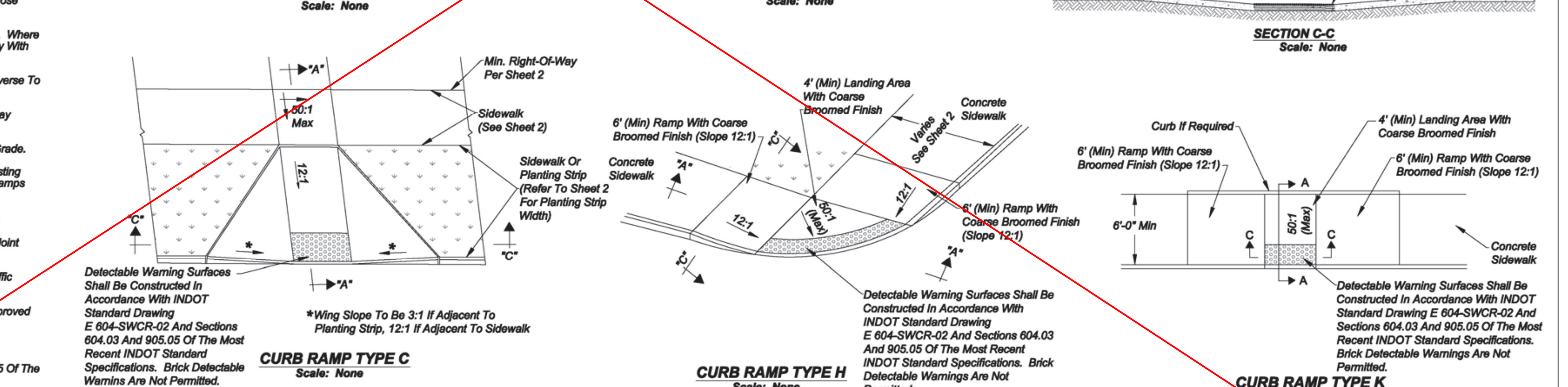


SECTION THROUGH SIDEWALK ADJACENT TO CURB
Scale: None



SECTION THROUGH SIDEWALK WITH UTILITY STRIP
Scale: None





REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	ADA Compliance Notes, Revised Asphalt Path X-Sec	01/10/2014
3	Updated Entire Set	02/11/2020

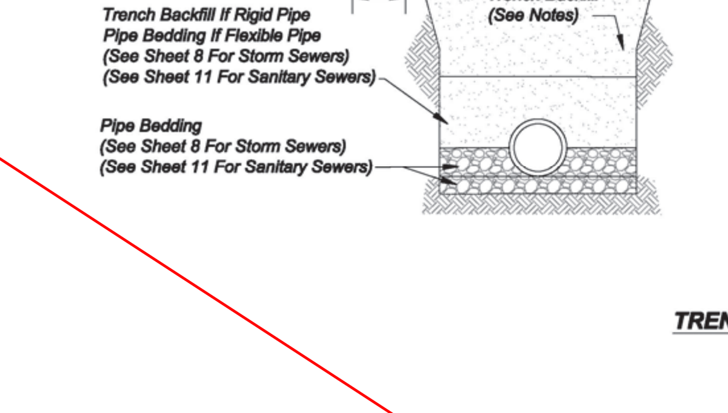
CITY OF SHELBYVILLE

SIDEWALK AND ADA RAMPS DETAILS AND NOTES

SHEET 6 OF 18

GENERAL NOTES:

1.) The Contractor Shall Notify The City Of Shelbyville At Least 24 Hours Prior To Beginning Backfill Or Excavation. If The Permanent Patch Placement Is To Be A Separate Operation, The Contractor Shall Also Notify The City Of Shelbyville 24 Hours Prior To Placement Of Patch.
2.) The Contractor Shall Be Responsible For Maintaining And Repairing Any And All Open Cuts Permitted Within The City Of Shelbyville Right-Of-Way For A Period Of One Year Upon Final Acceptance By The City.
3.) Saw Cut Existing Pavement So That Cut Provides A Square, Vertical, Neat And Uniform Edge. Jagged Or Irregular Saw Cuts Are Not Permitted And Shall Be Repaired By The Contractor At No Cost To The City.
4.) All Materials Shall Comply With Specifications As Required By The Shelbyville Department Of Engineering.
5.) The New Surface Pavement Grade Shall Match The Existing Surface Pavement Grade For All Street Cuts.
6.) Trench Backfill And Pavement Restoration Shall Be Conducted In An Expedient Manner.
7.) Prior to Conducting Any Work Within The City Of Shelbyville Right-Of-Way, Contractor Shall Secure A Right-Of-Way Permit From The City Of Shelbyville Engineering Department. See General Note 2 On Sheet 1.



TRENCH BACKFILL DETAIL
Scale: None

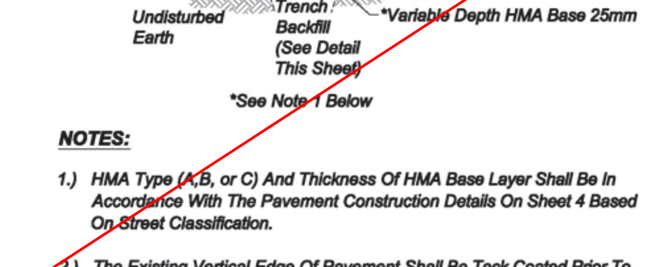
NOTES:

1.) Trench Spoils Shall Be Removed From The Work Site And Disposed Of Out Of The Right-Of-Way.
2.) Whenever A Trench Opening Encroaches Within 5 Ft. Of An Existing Collector Or Arterial Street, Flowable Fill Shall Be Used For Trench Backfill.
3.) Whenever A Trench Opening Encroaches Within 5 Ft. Of A Proposed Collector Or Arterial Street, Flowable Fill Or Granular Backfill Shall Be Used For Trench Backfill.
4.) Whenever A Trench Opening Encroaches Within 5 Ft. Of An Existing Or Proposed Local Street, Alley, Private Drive, Or Sidewalk; Flowable Fill Or Granular Backfill Shall Be Used For Trench Backfill.
5.) Approved Excavated Material May Be Used For Backfill Outside Of Limits Specified Herein. Excavated Material Shall Be Free Of Organic Material, Rocks Larger Than 6 Inches, Frozen Material, Debris, Excessive Water, Or Other Unsuitable Material As Determined By The City Of Shelbyville.
6.) The City Engineer And/Or Street Commissioner Reserve The Right To Require Flowable Backfill When They Deem Necessary.
7.) Flowable Fill, When Used, Shall Be Mixed And Placed As Specified In The Latest INDOT Standard Specifications, Section 213.
8.) The Compressive Strength Of The Flowable Fill Shall Not Be Less Than 50 PSI Nor Greater Than 100 PSI At 28 Days.
9.) Whenever Granular Backfill Is Placed In A Trench, Contractor Shall Place And Compact Material In Lifts Not To Exceed 6 Inches In Thickness. Contractor Shall Compact Material To A Minimum Of 95% Maximum Dry Density, At Optimum Moisture Content, As Per AASHTO T99. The City Reserves The Right To Require Compaction Testing At Its Discretion By An Independent Testing Firm At The Contractor's Expense
10.) Whenever A Steel Plate Is Used To Cover A Trench, The Street Department Shall Be Immediately Notified.

NOTES:

1.) Specifications For Portland Cement Concrete Pavement (PCCP) Paving Operations, Placement Methods, And Weather Limitations Shall Conform To The Most Current INDOT Specifications Section 502. The Contractor Shall Be Responsible For All Aspects Of Process Control Of The Mixtures Insuring They Meet All Other Requirements Of The INDOT Standard Specifications. All Test Data Shall Be Submitted To The City Engineer And Street Commissioner For Review When Required.
2.) For Cold-Weather Concrete Placement, Contractor Shall Comply With Provisions Of ACI 306R For Protection From Physical Damage Or Reduced Strength. For Hot-Weather Concrete Placement, Contractor Shall Comply With Provisions Of ACI 305R For Protection From Physical Damage Or Reduced Strength, As Associated With Rapid Moisture Loss.
3.) Contractor Shall Contact The Shelbyville Department Of Engineering To Determine If Anchors Or Dowels Are Required On Existing Concrete Pavement Repairs.
4.) A ½" Expansion Joint Shall Be Placed Against Existing Concrete On Both Sides Of Trench. Joint Shall Be Sealed With Crack Sealant (See Note 7).
5.) The Concrete Pavement And The Existing Vertical Edge Of Pavement Shall Be Tack Coated Prior To The Placement Of New Asphalt. Tack Coat Shall Be Applied In Accordance With The Most Recent INDOT Standard Specifications.
6.) The New Surface Pavement Grade Shall Match The Existing Surface Pavement Grade.
7.) A 2 Inch Wide Band Of Crack Sealant Shall Be Applied Along The Joint Between The Existing And New Asphalt Surface. Sealant Shall Be Applied In Accordance With The Most Recent INDOT Standard Specifications, Section 408.

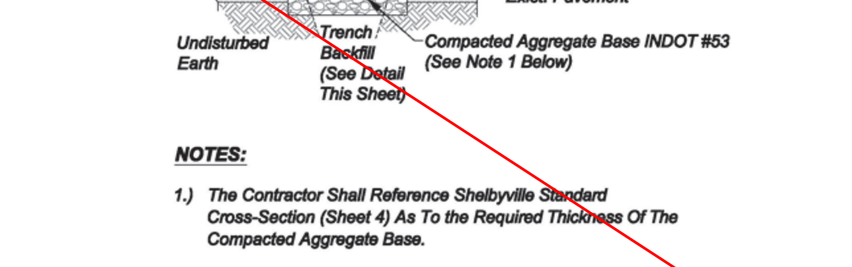
CONCRETE WITH BITUMINOUS SURFACE PATCH STREET CUT DETAIL
Scale: None



NOTES:

1.) HMA Type (A,B, or C) And Thickness Of HMA Base Layer Shall Be In Accordance With The Pavement Construction Details On Sheet 4 Based On Street Classification.
2.) The Existing Vertical Edge Of Pavement Shall Be Tack Coated Prior To The Placement Of New Asphalt. Tack Coat Shall Be Applied In Accordance With The Most Recent INDOT Standard Specifications.
3.) The New Surface Pavement Grade Shall Match The Existing Surface Pavement Grade.
4.) A 2 Inch Wide Band Of Crack Sealant Shall Be Applied Along The Joint Between The Existing And New Asphalt Surface. Sealant Shall Be Applied In Accordance With The Most Recent INDOT Standard Specifications, Section 408.

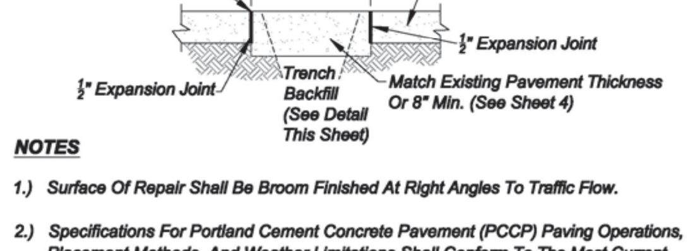
BITUMINOUS PATCH STREET CUT DETAIL
Scale: None



NOTES:

1.) The Contractor Shall Reference Shelbyville Standard Cross-Section (Sheet 4) As To the Required Thickness Of The Compacted Aggregate Base.
2.) Temporary Repair Patch Is Required When Restoration Work Occurs Between November 15 And April 15, Or When Temperature Is Less Than 40 Degrees Fahrenheit.
3.) Contractor Shall Be Responsible For Maintenance And Repair Of Temporary Patch Until Permanent Patch Is Installed.

TEMPORARY REPAIR PATCH STREET CUT DETAIL
Scale: None



NOTES

1.) Surface Of Repair Shall Be Broom Finished At Right Angles To Traffic Flow.
2.) Specifications For Portland Cement Concrete Pavement (PCCP) Paving Operations, Placement Methods, And Weather Limitations Shall Conform To The Most Current INDOT Specifications Section 502. The Contractor Shall Be Responsible For All Aspects Of Process Control Of The Mixtures Insuring They Meet All Other Requirements Of The INDOT Standard Specifications. All Test Data Shall Be Submitted To The City Engineer And Street Commissioner For Review When Required.
3.) For Cold-Weather Concrete Placement, Contractor Shall Comply With Provisions Of ACI 306R For Protection From Physical Damage Or Reduced Strength. For Hot-Weather Concrete Placement, Contractor Shall Comply With Provisions Of ACI 305R For Protection From Physical Damage Or Reduced Strength, As Associated With Rapid Moisture Loss.
4.) Contractor Shall Contact The Shelbyville Department Of Engineering To Determine If Anchors Or Dowels Are Required On Existing Concrete Pavement Repairs.
5.) A ½" Expansion Joint Shall Be Placed Against Existing Concrete On Both Sides Of Trench. Joints Shall Be Sealed With Concrete Joint Sealant In Accordance With INDOT Standard Specifications, Sections 503 And 906.

CONCRETE PATCH STREET CUT DETAIL (FOR CUTS WITHIN CONCRETE STREETS)
Scale: None

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Revised Trench Backfill Detail	01/10/2014
3	Updated Entire Set	02/11/2020

CITY OF SHELBYVILLE

TRENCH BACKFILL AND STREET CUT DETAILS AND NOTES

SHEET 7 OF 18

REINFORCED CONCRETE PIPE:

1.) Reinforced Concrete Pipe (RCP) Shall Be Class III, IV, or V As Specified In ASTM C-76.

DEPTH OF FILL OVER PIPE	CLASS
Between 2 Ft. And 10 Ft.	III
Between 10 Ft. And 16 Ft.	IV
16 Ft. Or Greater	V

2.) Reinforced Elliptical Concrete Pipe Shall Be Class HE-III Or HE-IV As Specified In ASTM C-507

DEPTH OF FILL OVER PIPE	CLASS
Between 2 Ft. And 10 Ft.	HE-III
10 Ft. And Greater	HE-IV

3.) All RCP Storm Sewer Pipe Shall Have A Minimum Of 2 Feet Of Cover Under Pavement And A Minimum 1.5 Feet Of Cover Outside Of Pavement, As Measured From The Top Of The Outside Of The Pipe To The Finished Grade.
4.) Lift Holes Are Not Allowed For Pipes Less Than 24 Inches In Diameter. A Maximum Of Two Lift Holes Are Allowed For Pipe 24 Inches In Diameter Or Larger. Lift Holes Shall Be Repaired According To The Most Recent INDOT Specifications.
5.) Fittings And Specialties Shall Be In Accordance With The Specifications For The Type Of Pipe Being Used.
6.) Each Pipe Section Shall Be Marked With Date Of Manufacture, Size And Class Of Pipe, Specification Designation, Manufacturer And Plant Identification.
7.) Pipe Shall Be Furnished With A Bell Or Groove On One End Of A Unit Of Pipe And A Spigot Or Tongue On The Adjacent End Of The Adjoining Pipe. All Joints Shall Have A Groove On The Spigot For Placement Of A Rubber "O"- Ring Or Profile Gasket In Accordance With ASTM C 443. The Gasket Shall Be A Continuous Ring Which Fits Snugly Into The Annular Space Between The Overlapping Surfaces Of The Assembled Pipe Joint To Form A Flexible Soil-Tight Seal.
8.) Pipe Size And Classification Shall Be Called Out In Plan And Profile Of Construction Drawings.
9.) Storm Sewer Pipe Shall Have A Minimum Horizontal Separation Of 10 Feet From Sanitary Sewer Pipe Or Water Main Pipe. All Pipe Crossings Shall Have A Minimum Vertical Separation Of 1.5 Feet. Dimensions Are Measured From The Outside Of Pipe To Outside Of Pipe.

STORM SEWER POLYVINYL CHLORIDE (P.V.C.) SEWER PIPE:

1.) PVC Pipe Greater Than 24 Inches In Diameter May Only Be Used When Approved By The City Engineer Or MS4 Operator.
2.) Pipe Diameters Of 12 Inches And 15 Inches Shall Meet Or Exceed All The Requirements Of ASTM D-3034, And Shall Have A Minimum Cell Classification Of 12454. Reference Should Be Made To ASTM D-1784 For A Summarization Of Cell Class Properties. Pipe Diameters Greater Than 15 Inches Shall Meet Or Exceed All Requirements Of ASTM F-679, And Shall Have A Minimum Cell Classification of 12454.
3.) P.V.C. Pipe Shall Conform To The Following Specifications Based On Pipe Diameter And Depth Of Cover:

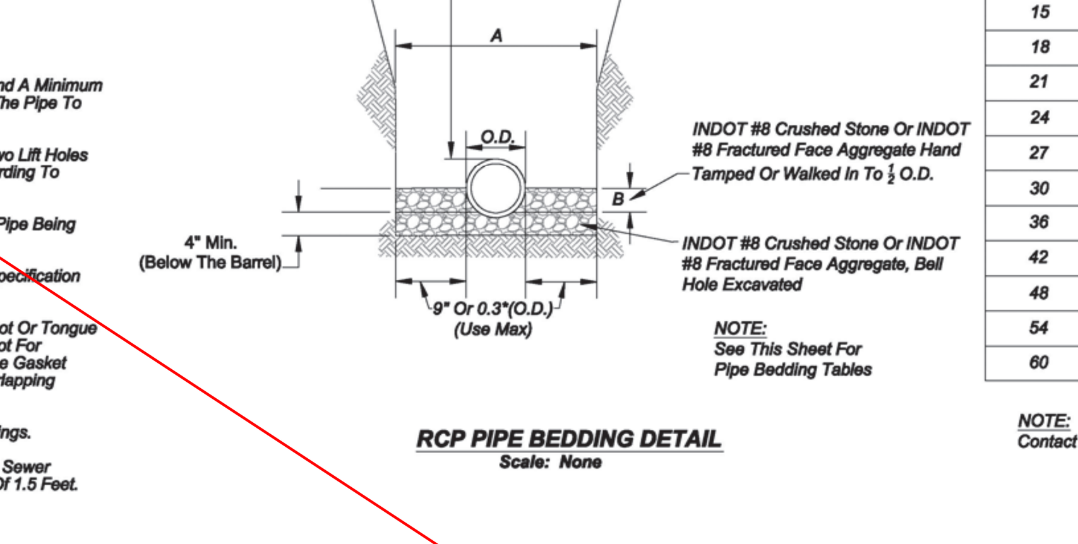
PIPE DIAMETER	DEPTH OF FILL OVER PIPE	PIPE SPECS	ASTM STANDARD
6" - 15"	Less Than 15 Feet	SDR-35 Type PSM	D-3034
6" - 15"	15 Feet Or Greater	SDR-26 Type PSM	D-3034
18" or Greater	Less Than 15 Feet	PS 46	F-679
18" or Greater	15 Feet Or Greater	PS 115	F-679

P.V.C. SDR-35 And PS-46 Pipe Shall Have A Minimum Pipe Stiffness Of 46 Pounds Per Square Inch For Each Diameter When Measured At 5% Deflection And Tested In Accordance With ASTM D-2412. P.V.C. SDR-26 And PS-115 Pipe Shall Have A Minimum Pipe Stiffness Of 115 Pounds Per Square Inch For Each Diameter When Measured At 5% Deflection And Tested In Accordance With ASTM D-2412.

4.) Pipe Joints Shall Have A Bell Wall, Gasket Groove And Spigot Which Is Integral With The Pipe. The Assembly Of Joints Shall Be In Accordance With Pipe Manufacturer's Recommendations And ASTM D-3212. No Solvent Cement Joints Shall Be Allowed.
5.) Gasket Material Shall Meet Or Exceed All Requirements Of ASTM D3212-07, Standard Specification For Joints For Drain And Sewer Plastic Pipes Using Flexible Elastomeric Seals.
6.) Each Pipe Section Shall Be Marked With Name Of Manufacturer, Trademark Or Tradename, Nominal Pipe Size, Production/Extrusion Code, Material And Cell Class Designation And ASTM Number.
7.) Installation Shall Be In Accordance With ASTM Recommended Practice D-2321.
8.) All PVC Storm Sewer Pipe Shall Have A Minimum Of 2 Feet Of Cover As Measured From The Top Of The Outside Of The Pipe To The Finished Grade.

STORM SEWER HIGH DENSITY POLYETHYLENE (H.D.P.E.) CORRUGATED PIPE:

1.) HDPE Pipe May Only Be Used When Approved By The City Engineer Or MS4 Operator.
2.) HDPE Pipe Greater Than 48 Inches In Diameter Shall Not Be Allowed For Use In The City Of Shelbyville.
3.) Requirements For Test Methods, Dimensions And Marking Shall Meet The Requirements Of A.A.S.H.T.O. Specifications M-252 And M-294.
4.) Pipe And Fittings Shall Be Made Of Polyethylene Compounds Which Meet Or Exceed The Requirements Of Type III, Category 4 Or 5, Grade P33 Or P34, Class C Per ASTM D-1248 With The Applicable Requirements Defined In ASTM D-1248.
5.) Minimum Pipe Stiffness Values Shall Be In Accordance With A.A.S.H.T.O. Specifications M-294.
6.) H.D.P.E. Corrugated Pipe Shall Have An Integrally Formed Smooth Interior.
7.) Male And Female Pipe Ends Which Allow The Construction Of Overlapping, Gasketed Joints Shall Be In Conformance With ASTM D-3212. Neoprene Gaskets Shall Meet ASTM F-477.
8.) Installation Shall Be In Accordance With ASTM Recommended Practice D-2321.
9.) All HDPE Storm Sewer Pipe Shall Have A Minimum Of 2 Feet Of Cover As Measured From The Top Of The Outside Of The Pipe To The Finished Grade.



RCP PIPE BEDDING DETAIL
Scale: None

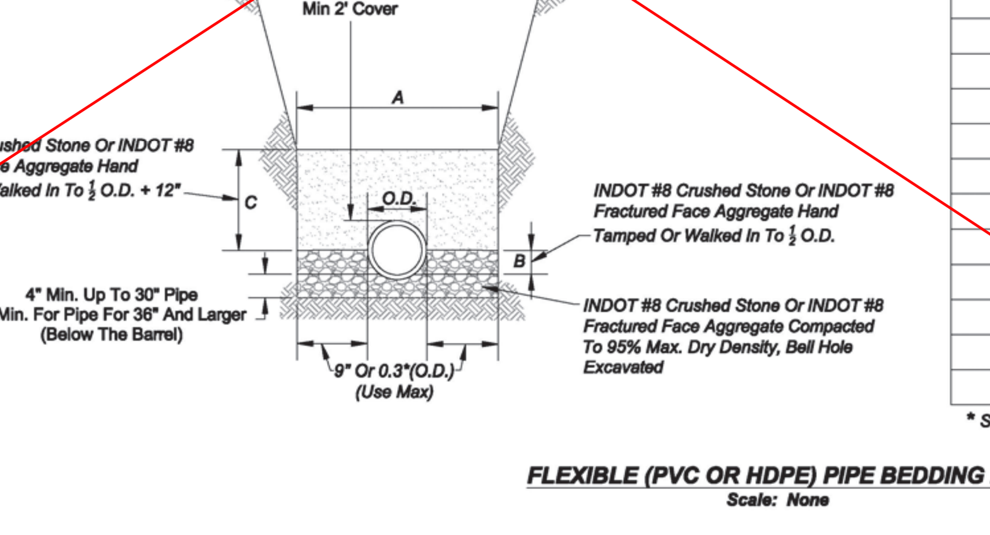
TABLE 10: RCP PIPE BEDDING TABLE

Pipe Size Nominal (in)	Pipe Size O.D. (in)	A (in)	B (in)	Cubic Yards Of Bedding Per Foot Of Pipe (Cys/Ft)
12	16.0	34.0	8.00	0.079
15	19.5	37.5	9.75	0.094
18	23.0	41.0	11.50	0.110
21	26.5	44.5	13.25	0.127
24	30.0	48.0	15.00	0.144
27	33.5	53.6	16.75	0.173
30	37.0	59.2	18.50	0.204
36	44.0	70.4	22.00	0.275
42	51.0	81.6	25.50	0.356
48	58.0	92.8	29.00	0.448
54	65.0	104.0	32.50	0.550
60	72.0	115.2	36.00	0.662

NOTE:
Contact City Engineer For Elliptical Pipe Details

STORM SEWER GENERAL NOTES:

1.) Storm Sewer Pipe Of Other Material Or Material Not Meeting These Specifications Shall Require The Prior Written Approval Of The City Engineer.
2.) Upon Request, The Contractor Shall Submit Information To The City Engineer Illustrating Conformance With These Specifications.
3.) The Smallest Permissible Storm Sewer Pipe Diameter Is 12 Inches.
4.) The City Of Shelbyville Stormwater Technical Standards Manual Shall Be Referenced For Stormwater Design.
5.) Prior To Earthwork, Pipe Construction, Or Other Activity That May Affect Or Alter Stormwater Runoff, The Downstream Receiving End Of Stormwater Shall Be Secured And Stabilized To Accommodate All Upstream Runoff, Including Offsite. This Includes, But Not Limited To, Downstream Ditch Improvements, Culvert Improvements, Or Constructing Positive Outlet For Retention Facility.
6.) All Culverts Or Ends Of Storm Pipe That Do Not Connect Directly To A Structure Shall Require Precast Flared Reinforced Concrete End Sections. Concrete Toe Anchors Shall Be Required. Revetment Rip-Rap Shall Be Required In Accordance With The Most Recent INDOT Channel Design Guide And INDOT Specifications. Revetment Rip-Rap Shall Be Placed Over Geotextile In Accordance With The Most Recent INDOT Standard Specifications. See Precast Concrete Pipe End Section Detail On Sheet 9.
7.) Pre-Fabricated Galvanized Debris Guard Shall Be Installed On All End Sections. See Debris Guard Detail Sheet 9.
8.) As-Built Record Drawings Shall Be Submitted To The City Plan Commission Office. See General Note 11 On Page 1 For As-Built Requirements.



FLEXIBLE (PVC OR HDPE) PIPE BEDDING DETAIL
Scale: None

TABLE 11: FLEXIBLE (PVC OR HDPE) PIPE BEDDING TABLE

Pipe Size Nominal (in)	Pipe Size O.D. (in)	A (in)	B (in)	C (in)	Cubic Yards Of Bedding Per Foot Of Pipe (Cys/Ft)
6*	6.3	24.3	3.14	15.14	0.131
8*	8.4	26.4	4.20	16.20	0.151
10*	10.5	28.5	5.25	17.25	0.172
12	12.5	30.5	6.25	18.25	0.192
15	15.3	33.3	7.65	19.65	0.221
18	18.7	36.7	9.35	21.35	0.257
21	22.1	40.1	11.03	23.03	0.294
24	24.8	42.8	12.40	24.40	0.325
27	28.0	46.0	13.98	25.98	0.362
30	32.0	51.2	16.00	28.00	0.425
36	38.3	61.3	19.15	31.15	0.560
42	44.5	71.2	22.25	34.25	0.708
48	50.8	81.3	25.40	37.40	0.875

* Sanitary Sewer Only

NOTE:
Contact City Engineer For Elliptical Pipe Details

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Updated Entire Set	02/11/2020

CITY OF SHELBYVILLE

STORM SEWER BEDDING AND PIPE DETAILS AND NOTES

SHEET 8 OF 18

STORM SEWER DEFLECTION TESTING, TELEVISING AND AS-BUILT DRAWINGS:

1.) Deflection Testing Is Required For All Mainline Flexible Storm Sewer Pipe Installed In The City Of Shelbyville. The City Engineer And MS4 Operator Shall Be Given A Minimum Of 24 Hour Written Notice Of Deflection Testing. A Nine-Point "Go-No-Go" Mandrel Shall Be Used For The Deflection Test. A Proving Ring Shall Be Provided For Each Mandrel. The "Go-No-Go" Mandrel Shall Be Manually Pulled Without The Use Of Any Mechanical Devices. An Allowable Deflection Of 5 Percent Of Inside Pipe Diameter Will Be Acceptable After All Backfilling Has Been In Place For 30 Days.

2.) Contractor Shall Bear All Testing Costs.

3.) All Pipe Exceeding The Allowable Deflection Shall Be Replaced Or Rerounded. The Replaced Or Rerounded Section Shall Be Retested 30 Days After Replacement Or Rerounding.

4.) Closed Circuit Television (CCTV) Inspection May Be Required to Be Performed In Areas Of Concerned On Pipes Installed Within The City Of Shelbyville For The Purposes Of Conveying Storm Water. Televising Shall Be Done After Deflection Testing.

5.) The Contractor Or Developer Responsible For Installing The Storm Sewer Pipe Shall Employ/Hire The Contractor Responsible For The Television Inspection Services. The Contractor Or Developer Shall Contact The City Engineer To Schedule The CCTV Inspection.

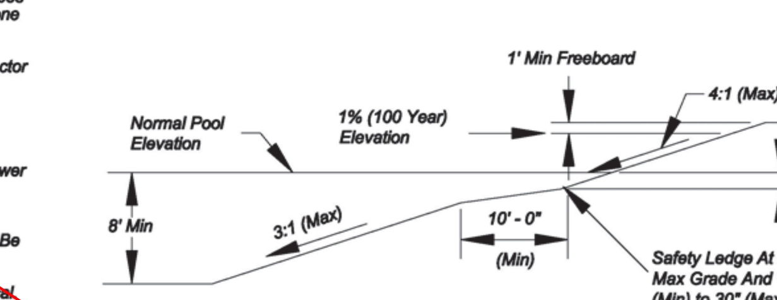
6.) All Pipe Segments Shall Be Thoroughly Cleaned Before The Start Of The CCTV Inspection.

7.) A Camera Equipped With Remote Control Devices To Adjust The Light Intensity And 1,000 Linear Feet Of Sewer Cable Shall Be Provided. The Camera Shall Transmit A Continuous Image To The Television Monitor As It Is Being Pulled Through The Pipe. The Image Shall Be Clear Enough To Enable The City Of Shelbyville Representative And Others Viewing The Monitor To Easily Evaluate The Interior Condition Of The Pipe. The Camera Shall Stamp The Video / DVD With Linear Footage And Project Number. An Audio Voice-Over Shall Be Made During The Inspection Identifying Any Problems.

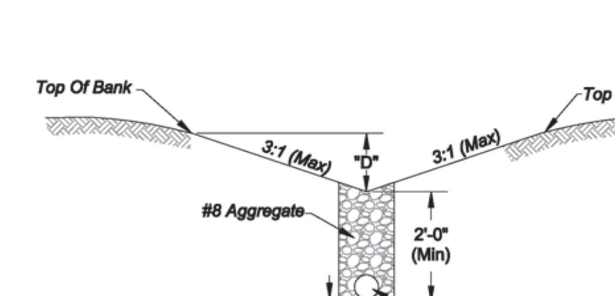
8.) The Contractor Shall Bear All Costs Associated With Televising, Line Clearing, And Debris Removal & Disposal.

9.) If Any Pipe And/Or Joint Is Found To Be Faulty Or Leaking, The Contractor Shall Repair That Portion Of The Work To The Satisfaction And Approval Of The City Of Shelbyville.

10.) 2 Digital Copies Of The Entire Sewer Line, Reproduction Map Indicating The Numbers Of All Pipes That Have Been Televised, And As-Built Drawings Shall Be Submitted To The City Of Shelbyville MS4 Operator And City Engineer For Their Records.



TYPICAL DETENTION POND SECTION
Scale: None



SWALE UNDERDRAIN DETAIL
Scale: None

SWALE REGULATIONS ON DEVELOPED LOTS:

1.) Swales Shall Not Be Constructed In Front Yards. The Front Portion Of Lots Shall Be Graded Toward The Street And/Or Side Yard Lines.

2.) Swales Shall Be Constructed With A Minimum 0.5 Percent Profile Grade Provided That A 6-Inch Diameter Underdrain Is Provided For Swales With Less Than 1.0 Percent Profile Grade.

3.) Maximum Swale Depth "D" Shall Be In Accordance With The Following Table:

TABLE 13: SWALE DIMENSIONS AND SPECIFICATIONS

Lot Area (square feet)	Maximum Swale Depth "D" (inches)	Minimum Usable Rear Yard Depth (feet)
Performance Based Lots	D ≤ 24	10
	24 > D < 36	15
	D > 36	20
Greater Than 10,000	48	30

4.) Minimum Usable Rear Yard Depth Shall Lie Between The Furthest Rear Portion Of The Residence And The Top Of Bank Of The Near Swale Slope. The Maximum Slope In This Area Shall Be 5.0 Percent.

5.) Swales Shall Be Graded With Side Slopes No Steeper Than 3h:1v And Lay Totally Within The Drainage Easement Limits.

NOTES:

1.) Public Safety Shall Be A Paramount Consideration In Storm Water Systems and Pond Design. Providing Safe Retention Is The Applicant's Responsibility.

2.) All Wet And Dry Detention Facilities Shall Be Posted With Warning Signage. All Wet And Dry Detention Facilities Shall Be Posted With Signs Warning Of Rapid Rise In The Water Levels And Strong Hydraulic Forces At Pipe Inlets And Outlets. All Wet Retention Facilities Shall Be Posted With Drowning Hazard Signs, No Swimming Or Wading Signs, And No Ice Skating Signs On All Sides.

3.) All Wet And Dry Detention Facilities Shall Be Designed To Maximize The Distance Between Inflow And Outflow Pipes. Baffles May Be Required If Deemed Necessary By The City Engineer Or MS4 Operator.

4.) All Wet Retention Facilities Located Within 100 Feet Of A Roadway Or Parking Lot Shall Be Designed With Measures To Prevent Vehicular Entry Into The Water. These Measures Shall Include One Or More Of The Following:
   A. High-Tension Cable Barrier In Accordance With INDOT Specifications
   B. W-Beam Guardrail In Accordance With INDOT Specifications
   C. Steel-Backed Timber Guardrail In Accordance With FHWA Standards, Sections 617 And 710
   D. Earth Mound At Least 8 Feet In Height With Maximum 4:1 Slopes
   E. Wider Safety Ledge Or Shallow Wetlands Strip Adjacent To Roadway Side Of Pond
   F. Thick Vegetative Buffers (i.e. Bushes, etc.) May Be Used As A Secondary Measure To Reduce Errant Vehicle Velocities And To Improve The Appearance Of The Site

   The City Engineer or MS4 Operator May Require Additional Measures Based On Site Conditions And Layout.

5.) Dam/Embankment Safety And Design Is The Applicant's Responsibility. Dams/Embankments Shall Be Designed To Prevent Failure Due To Erosion, Slope Instability, Overtopping, Heave, And Piping. The Following Elements Shall Be Incorporated In The Design Of All Dams And Embankments:
   A. Appropriate Foundation Materials
   B. Appropriate Core Fill Materials
   C. Maximum 3:1 Side Slopes And Minimum 10 Feet Top Width
   D. Emergency Spillway Designed In Accordance With The City Of Shelbyville Stormwater Design Manual And Adquately Protected Against Erosion And Scour
   E. Anti-Seep Collar For All Outflow Pipes

6.) Dry Bottom Basins Shall Be Subject To The Maximum Of 3:1 Slope Above The Basin Floor. The Longitudinal Grade Shall Be Minimum 1% (0.5% With A Minimum 6 Inch Diameter Underdrain).

7.) City Engineer May Approve Alternate Detention Pond / Basin Sections.

8.) Access Should Be Provided Around Entire Width Of Pond. See Shelbyville Stormwater Design Manual For Easement Requirements.

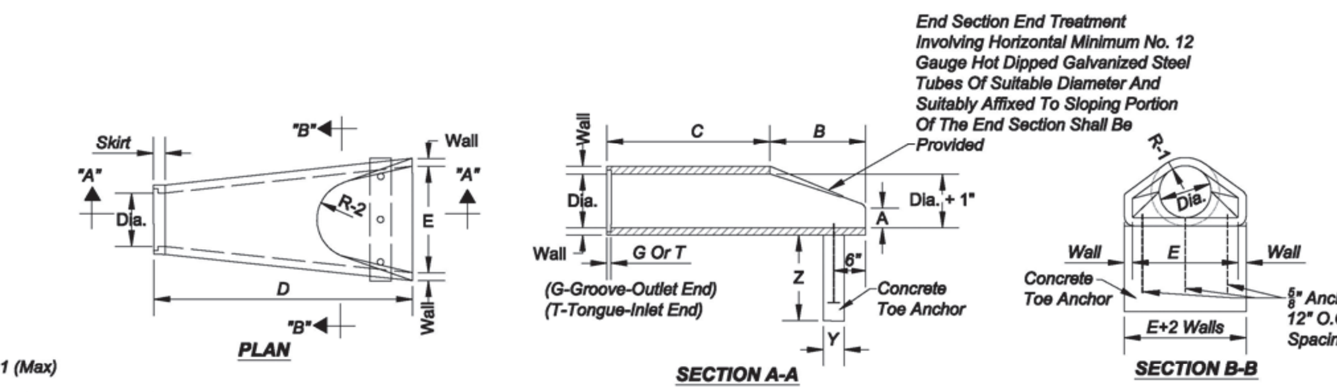


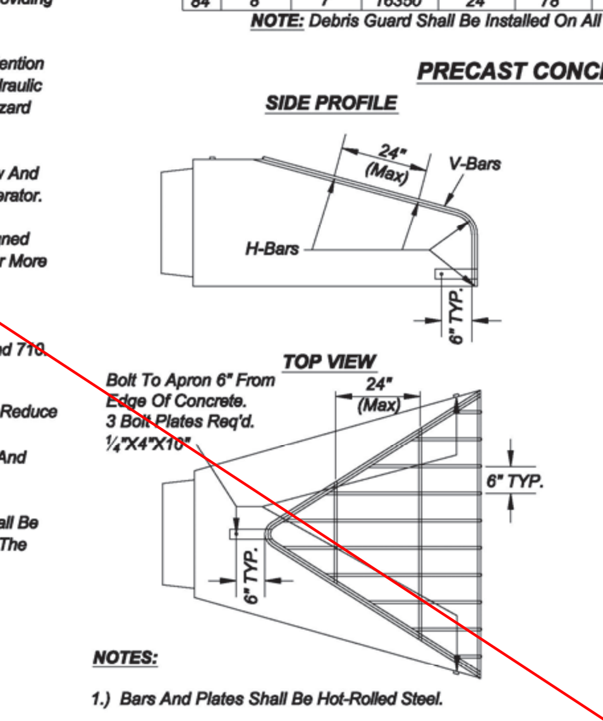
TABLE 12: PRECAST CONCRETE PIPE END SECTION SPECIFICATIONS

DIA.	WALL	G or T	WT SEC	A	B	C	D	E	DIA.+1"	R-1	R-2	SKIRT	Y	Z
12	2	1-1/2	530	4	24	48-7/8	72-7/8	24	13	10-1/16	9	3-1/2	12	24
15	2-1/4	2	740	6	27	46	73	30	16	12-1/2	11	3-1/2	12	24
18	2-1/2	2-1/2	990	9	27	46	73	36	19	15-1/2	12	4	12	24
21	2-3/4	2-1/2	1280	9	35	38	73	42	22	16-1/8	13	4	12	36
24	3	2-1/2	1520	9-1/2	43-1/2	30	73 -1/2	48	25	16-11/16	14	4-1/2	18	36
27	3-1/4	2-1/2	1930	10-1/2	48	25-1/2	73 -1/2	54	28	17-3/4	14-1/2	4-1/2	12	36
30	3-1/2	3	2190	12	54	19-3/4	73 -3/4	60	31	18-5/16	15	5	12	36
33	3-3/4	3-3/8	3150	13-1/2	58-1/2	39-1/4	97 -3/4	66	34	23-3/4	17-1/2	5-1/2	18	36
36	4	3-1/2	4100	15	63	34-3/4	97 -3/4	72	37	24-1/16	20	5-1/2	18	36
42	4-1/2	3-3/4	5380	21	63	35	98	78	43	27-1/4	22	5-1/2	24	36
48	5	4-1/4	6550	24	72	26	98	84	49	28-1/8	22	5-3/4	24	36
54	5-1/2	4-3/4	8040	27	65	35	100	90	55	32-7/8	24	6-1/4	30	36
60	6	5	8750	30	60	39	99	96	61	36-3/4	24	6-3/4	30	36
66	6-1/2	5-1/2	10630	24	78	21	99	102	67	35-11/16	24	7-1/4	30	36
72	7	6	12520	34	78	21	99	108	73	38-5/8	24	7-3/4	36	36
78	7-1/2	6-1/2	14430	24	78	21	99	114	79	41-15/16	24	8-1/2	36	36
84	8	7	16350	24	78	21	99	120	85	44-13/16	24	9	39	36

NOTE: Debris Guard Shall Be Installed On All End Sections In Accordance With Debris Guard Detail Shown On This Sheet.

* See City Engineer For Flexible Pipe Requirements

PRECAST CONCRETE PIPE END SECTION
Scale: None



NOTES:

1.) Bars And Plates Shall Be Hot-Rolled Steel.

2.) Bars, Plates, And Pipe Shall Be Finished With Two Coats Of Aluminum Paint

3.) Bolts Shall Be Galvanized.

4.) No Rebar Through Pipes Shall Be Allowed.

5.) Debris Guard Shall Be Removable.

6.) Debris Guard Shall Be Smooth On All Surfaces And Free From Jagged Edges,Sharp Edges, And Protruding Bars.

TABLE 12A: DEBRIS GUARD SPECIFICATIONS

	APRON SIZE (INCHES)	V-BAR SIZE (INCHES)	NO. OF H-BARS REQ'D	H-BAR SIZE (INCHES)	BOLT DIA. (INCHES)	"A" DIM. (INCHES)
Arch Pipe Aprons	18	1/2	3	5/8	1/2	5
	24	5/8	4	3/4	1/2	7
	30	5/8	4	3/4	1/2	7-1/2
	36	3/4	4	1	1/2	10-1/2
	42	3/4	4	1	3/4	11
	48	3/4	4	1 1/2 Pipe	3/4	12
	54	3/4	4	1 1/2 Pipe	3/4	12
	60	3/4	5	1 1/2 Pipe	3/4	14
	72	3/4	5	1 1/2 Pipe	3/4	14
	84	3/4	6	1 1/2 Pipe	3/4	15
Round Pipe Aprons	12	1/2	3	5/8	1/2	4
	15	1/2	3	5/8	1/2	4-1/2
	18	1/2	4	5/8	1/2	4-1/2
	21	1/2	4	5/8	1/2	5
	24	5/8	4	3/4	1/2	5
	27	5/8	4	3/4	1/2	5-1/2
	30	5/8	4	3/4	1/2	5-1/2
	36	3/4	4	1	3/4	8
	42	3/4	4	1	3/4	8
	48	3/4	5	1	3/4	8
	54	3/4	5	1 1/2 Pipe	3/4	8
	60	3/4	5	1 1/2 Pipe	3/4	8
	66	3/4	6	1 1/2 Pipe	3/4	8
	72	3/4	6	1 1/2 Pipe	3/4	9
	84	3/4	7	1 1/2 Pipe	3/4	10
	90	3/4	7	1 1/2 Pipe	3/4	14

DEBRIS GUARD FOR END SECTIONS
Scale: None

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Updated Entire Set	02/11/2020

MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

SHELBYVILLE PRIDE IN PROGRESS

CITY OF SHELBYVILLE

STORM SEWER AND DRAINAGE DETAILS AND NOTES

SHEET 9 OF 18

GENERAL NOTES

1.) Type J, K, L, M And N Manholes As Detailed Herein Require A Certain Minimum Depth. In Cases Where The Depth Of The Storm Sewer Is Not Sufficient To Meet The Minimum Depth As Required By The Detail, "F" Diameter Manhole Section May Be Used Throughout The Depth Of The Manhole.

2.) Manholes Shall Conform To ASTM C-478. Joints Shall Conform To ASTM C-443. The Use Of Cast-In-Place Concrete Structures Shall Require The Prior Written Approval Of The City Engineer. Regardless Of Type Of Casting Used, The Casting Shall Be Centered Over The Manhole Steps.

3.) Manhole Steps Shall Be Neenah R-1981-J, M.A. Industries PS 1-PF, Or Equivalent As Approved By The City Engineer.

4.) All Structures And Castings Shall Be Specified Based On Surface Conditions In Accordance With Table 14 On This Sheet.

5.) Castings For All Storm Structures Shall Be Stamped With Lettering As Shown In The Structure And Castings Specifications Detail On This Sheet.

6.) Castings Shall Not Be Buried And Shall Be Flush With The Adjacent Finished Grade. Castings Which Are Surrounded By Asphalt Or Concrete Shall Be Constructed Within A Tolerance Of ± 0.1' Of The Designed Elevation. All Other Castings Shall Be Constructed Within A Tolerance Of ± 0.2' Of The Designed Elevation.

7.) The Contractor Shall Remove Soils Under A Precast Bottom And Replace With 6 Inches Of Compacted INDOT #8 Stone.

8.) For Type C Manholes, The Base And First Riser Section Of The Precast Concrete Manhole Shall Be Integrally Cast As One Complete Unit.

9.) Final Adjustment In Elevation Of The Frame, Cover, Or Casting Shall Be Accomplished By The Use Of A 4 Inch Minimum And 12 Inch Maximum Thickness Adjusting Ring Or Collar. Brick Or Block Shall Not Be Used In The Construction Of A Structure Or To Adjust The Elevation Of Frame Or Casting.

10.) All Structures Shall Have A Minimum Of 4" Allowed For Riser Rings Or Adjustment.

11.) The Minimum Pipe Diameter For Storm Sewer In Public Right-Of-Way Is 12".

12.) Manholes Shall Be Installed At Distances Not Greater Than 400 Feet. For Pipes 36 Inches Or Larger, Greater Distances Between Manholes May Be Used With Written Approval Of The City Engineer.

13.) All Structure Castings Shall Be Surrounded By A 1/2" Expansion Joint When Placed In Asphalt Or Concrete. When Placed In Asphalt, Joint Shall Be Sealed In Accordance With INDOT Standard Specifications, Section 408. When Placed In Concrete, Joint Shall Be Sealed In Accordance With INDOT Standard Specifications, Sections 503 and 906.

14.) For A Series Of More Than One Inlets Connecting To A Trunkline, A Catch Basin With A 2 Feet Sump Shall Be Installed At The Structure Closest To The Trunkline.

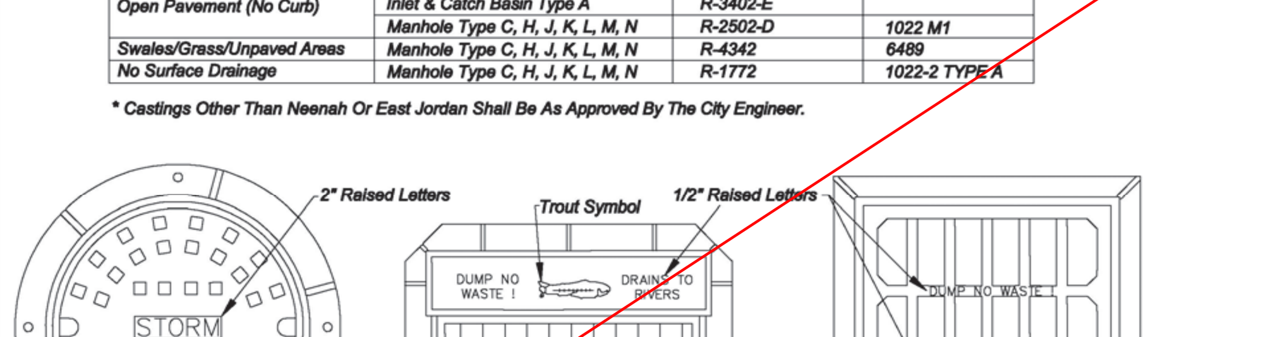
15.) Maximum Pipe Intrusion In A Structure Shall Be 3 Inches.

16.) Each Pipe Section Shall Be Marked With Date of Manufacture, Size, And Class Of Pipe, Specification Designation, Manufacturer, And Plant Identification.

TABLE 14: STORM SEWER STRUCTURE & CASTING REQUIREMENTS

SURFACE DRAINAGE TYPE	COMPATIBLE STRUCTURE TYPES	*NEENAH CASTING #	*EJIW CASTING #
Type I Roll Curb & Gutter	Inlet & Catch Basin Type A	R-3501-T (R or L)	7495 (M1 or M2)
	Inlet & Catch Basin Type B	R-3501-TB	
	Manhole Type C, H, J, K, L, M, N	R-3501-L2	7495
Type II Combined Curb & Gutter Type V Curb	Inlet & Catch Basin Type A	R-3286-8V	7520 T1
	Inlet & Catch Basin Type B	R-3287-10V	7505 (M1 or M2)
	Inlet & Catch Basin Type C	R-3287-15V	7565 T1
	Manhole Type C, H, J, K, L, M, N	R-3286-8V	7520 T1
Type III Gutter Type IV Gutter	Inlet & Catch Basin Type A	R-3210-L	5344
	Inlet & Catch Basin Type B	R-3067-L	7034
	Inlet & Catch Basin Type C	R-3396	
	Manhole Type C, H, J, K, L, M, N	R-3238	5100
Open Pavement (No Curb)	Inlet & Catch Basin Type A	R-3402-E	
	Manhole Type C, H, J, K, L, M, N	R-2502-D	1022 M1
Swales/Grass/Unpaved Areas	Manhole Type C, H, J, K, L, M, N	R-4342	6489
No Surface Drainage	Manhole Type C, H, J, K, L, M, N	R-1772	1022-2 TYPE A

* Castings Other Than Neenah Or East Jordan Shall Be As Approved By The City Engineer.

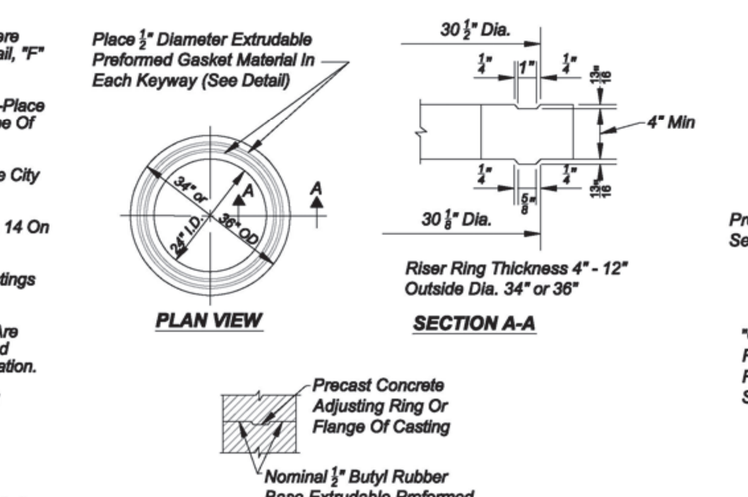


LETTERING FIGURE 1
Applies To Solid Manhole Castings

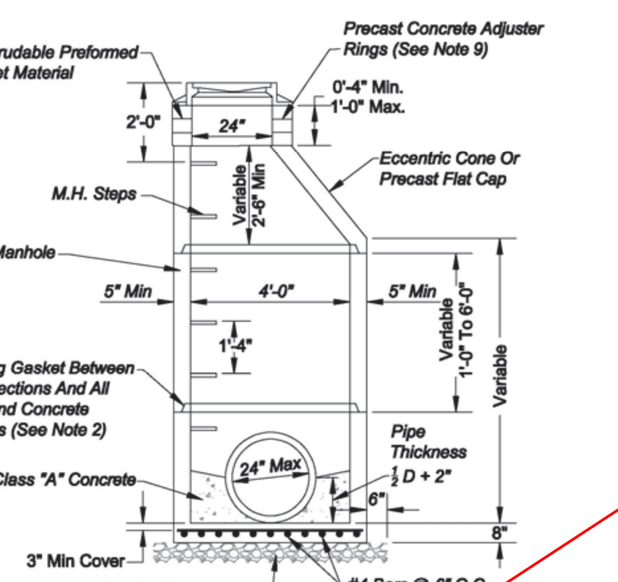
LETTERING FIGURE 2
Applies To Curb & Gutter Castings

LETTERING FIGURE 3
Applies To Open Pavement And Unpaved Open Areas Castings

STORM STRUCTURE AND CASTING SPECIFICATIONS
Scale: None



PRECAST ADJUSTING RING
Scale: None



MAXIMUM PIPE SIZE	
Pipe Entering / Pipe Exiting At 0° - 45° Bend	Pipe Entering / Pipe Exiting At 45° - 90° Bend
24"	21"

MANHOLE TYPE C
Scale: None

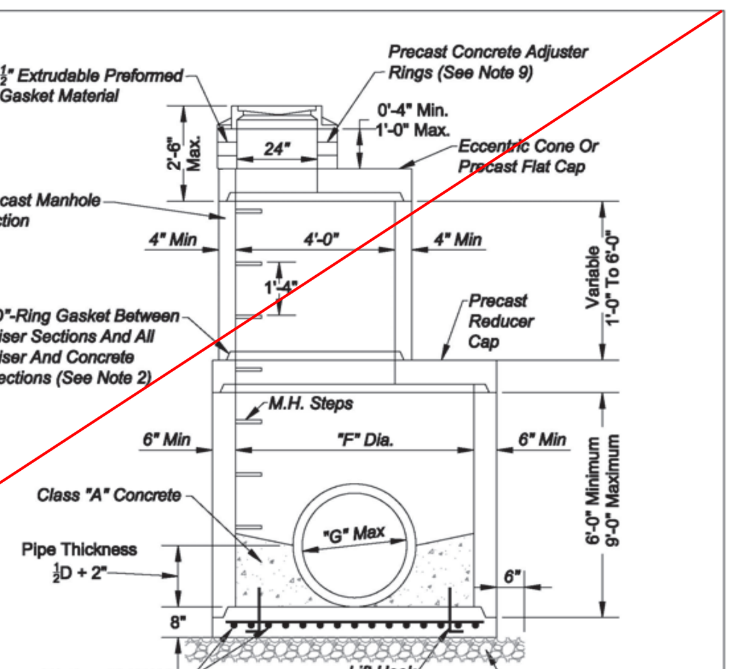
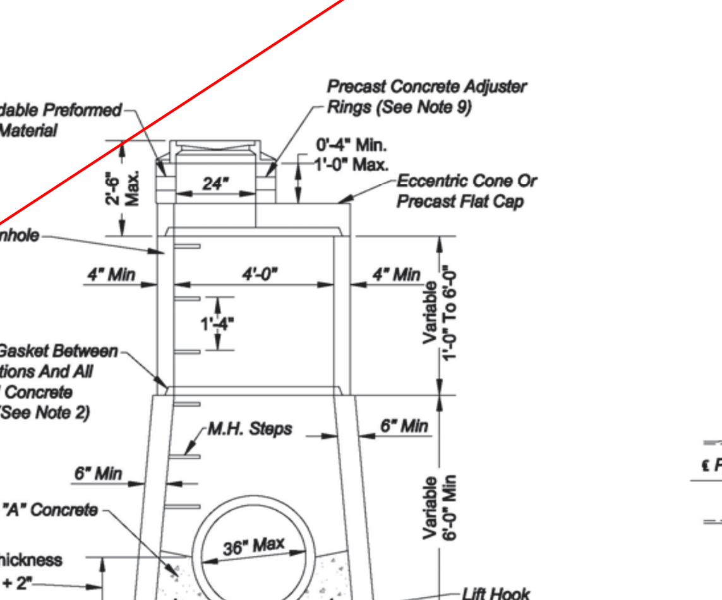


TABLE 15: DIMENSIONS FOR MANHOLE TYPES J,K,L,M & N

Manhole Type	Manhole Diameter "F"	MAXIMUM PIPE SIZE "G" Pipe Entering / Pipe Exiting At 0° - 45° Bend	Pipe Entering / Pipe Exiting At 45° - 90° Bend
J	60"	36"	30"
K	72"	48"	36"
L	96"	54"	48"
M	102"	72"	66"
N	108"	84"	72"

MANHOLE TYPES J, K, L, M, & N
Scale: None



MAXIMUM PIPE SIZE	
Pipe Entering / Pipe Exiting At 0° - 45° Bend	Pipe Entering / Pipe Exiting At 45° - 90° Bend
36"	30"

MANHOLE TYPE H
Scale: None

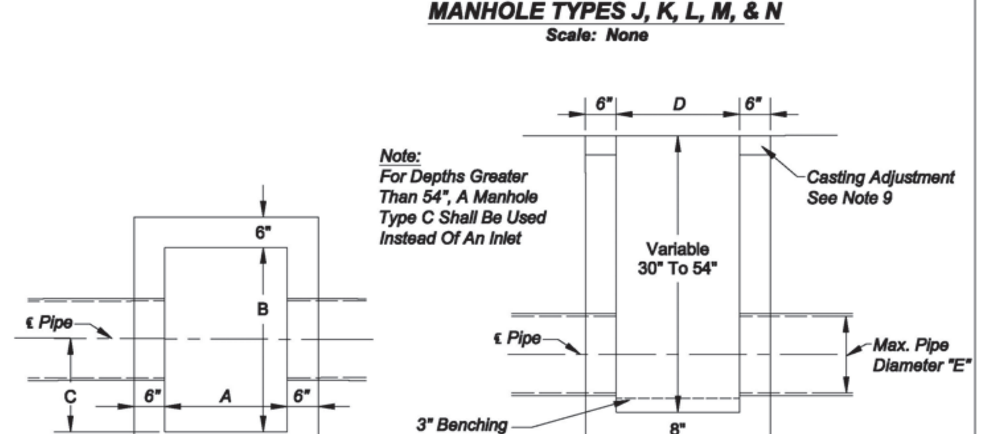


TABLE 16: INLET AND CATCH BASIN DIMENSIONS

STRUCTURE TYPE	A (in)	B (in)	C(in)	D (in)	E (in)	Sump (in)
Inlet Type A	24	24	12	24	18	None
Catch Basin Type A	24	24	12	24	18	24
Inlet Type B	24	36	18	24	24	None
Catch Basin Type B	24	36	18	24	24	24
Inlet Type C	30	46	23	30	30	None
Catch Basin Type C	30	46	23	30	30	24

INLETS AND CATCH BASINS - TYPES A, B, AND C
Scale: None

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Updated Entire Set	02/11/2020

MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

SHELBYVILLE PRIDE IN PROGRESS

CITY OF SHELBYVILLE

STORM SEWER STRUCTURES DETAILS AND NOTES

SHEET 10 OF 18

SANITARY SEWER GENERAL NOTES:

1.) Sanitary Sewer Pipe Of Other Material Or Material Not Meeting These Specifications Shall Require The Prior Written Approval Of The City Engineer And Wastewater Superintendent.

2.) The Contractor Is Responsible For Locating All Sanitary Mains And Laterals Prior To Construction. Any Mains Or Laterals Damaged During Construction Shall Be Repaired By The Contractor At His/Her Expense.

3.) The Contractor Shall Submit Information To The City Engineer Showing Conformance With These Specifications Upon Request.

4.) As-Built Drawings Shall Be Submitted To The City Engineer And Wastewater Superintendent. See Note 11 On Sheet 1.

5.) During Construction Of New Sanitary Sewer Lines, The Contractor Shall Install A Watertight Plug In The End Of The Existing Sewer That Is Being Connected To. This Plug Shall Remain In Place And Be Checked For Water Tightness Daily Until The Entire Project Is Complete And Testing Has Been Performed. A Letter From The Wastewater Superintendent Must Be Written, Giving Permission To Remove The Plug Before The Plug Can Be Removed By The Contractor.

SANITARY SEWER POLYVINYL CHLORIDE (P.V.C.) PIPE:

1.) P.V.C. Pipe Diameters Of 6 Inches Through 15 Inches Shall Meet Or Exceed All The Requirements Of ASTM D-3034, And Shall Have A Minimum Cell Classification Of 12454. Reference Should Be Made To ASTM D-1784 For A Summarization Of Cell Class Properties. P.V.C. Pipe Diameters Greater Than 15 Inches Shall Meet Or Exceed All Requirements Of ASTM F-679, And Shall Have A Minimum Cell Classification Of 12454.

2.) P.V.C. Pipe Shall Conform To The Following Specifications Based On Pipe Diameter And Depth Of Cover:

PIPE DIAMETER	DEPTH OF FILL OVER PIPE	PIPE SPECS	ASTM STANDARD
6" - 15"	Less Than 15 Feet	SDR-35 Type PSM	D-3034
6" - 15"	15 Feet Or Greater	SDR-26 Type PSM	D-3034
18" or Greater	Less Than 15 Feet	PS 46	F-679
18" or Greater	15 Feet Or Greater	PS 115	F-679

P.V.C. SDR-35 And PS-46 Pipe Shall Have A Minimum Pipe Stiffness Of 46 Pounds Per Square Inch For Each Diameter When Measured At 5% Deflection And Tested In Accordance With ASTM D-2412. P.V.C. SDR-26 And PS-115 Pipe Shall Have A Minimum Pipe Stiffness Of 115 Pounds Per Square Inch For Each Diameter When Measured At 5% Deflection And Tested In Accordance With ASTM D-2412.

3.) Pipe Joints Shall Have A Bell Wall, Gasket Groove And Spigot Which Is Integral With The Pipe. The Assembly Of Joints Shall Be In Accordance With Pipe Manufacturers' Recommendations And ASTM D-3212. No Solvent Cement Joints Shall Be Allowed.

4.) Gasket Material Shall Meet Or Exceed All Requirements Of ASTM D3212-07, Standard Specification For Joints For Drain And Sewer Plastic Pipes Using Flexible Elastometric Seals.

5.) Pipe Fittings Shall Be SDR-26 Manufactured Fittings Made Of P.V.C. Plastic Having A Cell Classification Of 12454 As Defined In ASTM D-1784. Saddle Connections Shall NOT Be Allowed For New Construction.

6.) Each Pipe Section Shall Be Marked With The Name Of Manufacturer, Trademark Or Tradename, Nominal Pipe Size, Production/Extrusion Code, Material And Cell Class Designation, And ASTM Number.

7.) Lateral Connections Shall Be Made With A SDR-26 Or PS 115 "Tee-Wye" Fitting Only.

8.) Sanitary Sewer Pipe Shall Have A Minimum Horizontal Separation Of 10 Feet From Storm Sewer Pipe Or Water Main Pipe. All Pipe Crossings Shall Have A Minimum Vertical Separation Of 1.5 Feet. Dimensions Are Measured From The Outside Of Pipe To Outside Of Pipe.

9.) Installation Shall Be In Accordance With ASTM Recommended Practice D-2321.

SANITARY SEWER REINFORCED CONCRETE PIPE:

1.) Reinforced Concrete Pipe For Use As Sanitary Sewers Shall Be Class III, IV, Or V As Specified In ASTM C-76. Lift Holes Shall Not Be Permitted.

2.) Each Section Of Reinforced Concrete Pipe Shall Be Vacuum Tested By The Manufacturer Prior To Delivery To The Job Site. Only Pipe Sections Passing This Test Shall Be Marked As "Vacuum Tested". Vacuum Test Requirements Are As Follows:

   a. Each Section Of Pipe Shall Be Tested By Bringing The Internal Pressure Within The Pipe To 3.5 PSIG Below Atmospheric Pressure And The Pressure Must Not Drop To Less Than 2.5 PSIG Below Atmospheric Pressure Within The Time Limitation As Determined By The Following:

$$T = \frac{0.022(D)^2(L)}{2}$$

   Where: T = Time In Seconds; D = Diameter Of Pipe In Inches; L = Length Of Pipe In Feet

   b. Any Pipe Section Failing To Meet This Test Shall Not Be Permitted For Use As Sanitary Sewer In The City Of Shelbyville.

3.) Lateral Connections Shall Be Made With Insert-A-Tee Connector Or City Approved Equal.

4.) Each Pipe Section Shall Be Marked With The Date Of Manufacture, Size And Class Of Pipe, Specification Designation, Manufacturer And Plant Identification.

5.) Pipe Shall Be Furnished With A Bell Or Groove On One End Of A Unit Of Pipe And A Spigot Or Tongue On The Adjacent End Of The Adjoining Pipe. All Joints Shall Have A Groove On The Spigot For Placement Of A Rubber "O"-Ring Or Profile Gasket In Accordance With ASTM C-443. The Gasket Shall Be A Continuous Ring Which Fits Snugly Into The Annular Space Between The Overlapping Surfaces Of The Assembled Pipe Joint To Form A Flexible Watertight Joint Under All Conditions Of Service. Joint Shall Be Adequate For Hydrostatic Pressures Up To 13 Pounds Per Square Inch (30 Feet) Without Leakage.

SANITARY SEWER LEAKAGE TESTING:

1.) Leakage Testing Shall Be Performed For All Mainline Segments. Testing For Leakage Shall Commence After Backfill Has Been In Place For 30 Days. The City Engineer And Wastewater Superintendent Shall Be Given 24 Hour Written Notice Of The Required Leakage Testing Procedure To Be Performed By The Contractor. Low Pressure Air Shall Be Slowly Introduced Into The Sealed Line Until The Internal Air Pressure Reaches 5 PSIG Plus The Groundwater Head Divided By 2.31 (Maximum Test Pressure Is 9 PSIG).

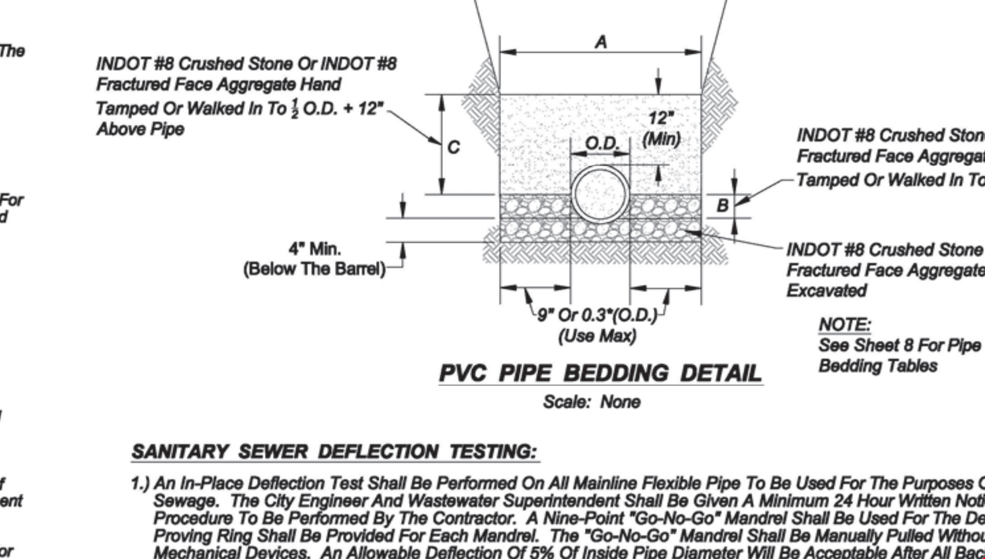
2.) At A Stable Internal Air Pressure Within 0.5 PSIG Of The Initial Internal Air Pressure, Timing Shall Commence With A Stopwatch Or Similar Device Of 99.8 Percent Accuracy. Timing Shall End When The Internal Air Pressure Drops 1 PSIG Below The Stable Internal Air Pressure.

3.) The Line Shall Be Accepted If The Time Shown In Table 17 For The Designated Pipe Size And Length Elapses Before The Air Pressure Drops 1 PSIG Below The Stable Internal Air Pressure At Which Time The Test Can Be Discontinued For The Accepted Line.

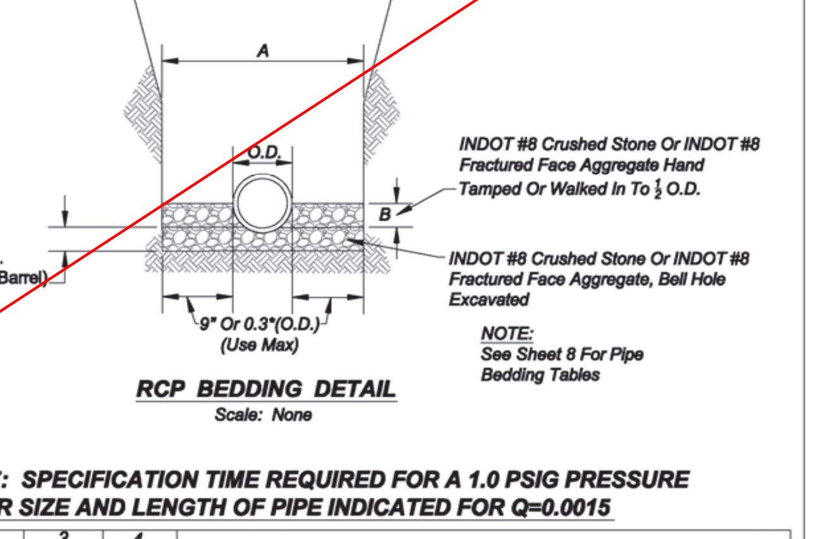
4.) If A Leak Must Be Repaired, Then The Entire Mainline Segment Shall Be Retested For Leakage. If Contractor Excavates Pipe For The Purpose Of Repairing A Leak, Then The Entire Mainline Segment Shall Be Retested For Both Leakage And Deflection.

5.) The Design Engineer Or His/Her Representative Shall Attest That Each Mainline Segment Was Tested For Leakage, With Successful Results, In Compliance With Stated Leakage Testing Requirements.

6.) Contractor Shall Bear All Testing Costs.



PVC PIPE BEDDING DETAIL
Scale: None



RCP BEDDING DETAIL
Scale: None

SANITARY SEWER DEFLECTION TESTING:

1.) An In-Place Deflection Test Shall Be Performed On All Mainline Flexible Pipe To Be Used For The Purposes Of Conveying Sanitary Sewage. The City Engineer And Wastewater Superintendent Shall Be Given A Minimum 24 Hour Written Notice Of Deflection Testing Procedure To Be Performed By The Contractor. A Nine-Point "Go-No-Go" Mandrel Shall Be Used For The Deflection Test. A Proving Ring Shall Be Provided For Each Mandrel. The "Go-No-Go" Mandrel Shall Be Manually Pulled Without The Use Of Any Mechanical Devices. An Allowable Deflection Of 5% Of Inside Pipe Diameter Will Be Acceptable After All Backfilling Has Been In Place For 30 Days.

2.) All Pipe Exceeding The Allowable Deflection Shall Be Replaced Or Rerounded. The Replaced Or Rerounded Section Shall Be Retested For Leakage And Deflection 30 Days After Replacement Or Rerounding.

3.) The Design Engineer Or His/Her Representative Shall Attest That Each Mainline Segment Was Tested for Deflection, With Successful Results, In Compliance With Stated Deflection Testing Requirements.

4.) Contractor Shall Bear All Testing Costs.

SANITARY SEWER TELEVISING AND AS-BUILT DRAWINGS:

1.) Closed Circuit Television (CCTV) Inspection Shall Be Performed On All Pipe Installed Within The City Of Shelbyville For The Purposes Of Conveying Sanitary Sewage. Televising Shall Be Performed After Deflection And Leakage Testing Are Completed.

2.) The Contractor Or Developer Responsible For Installing The Sanitary Sewer Pipe Shall Employ/Hire The Contractor Responsible For The Television Inspection Services. The Contractor Or Developer Shall Contact The City Engineer Or Wastewater Superintendent To Schedule The CCTV Inspection.

3.) All Pipe Segments Shall Be Thoroughly Cleaned Before The Start Of The CCTV Inspection.

4.) A Camera Equipped With Remote Control Devices To Adjust The Light Intensity And 1,000 Linear Feet Of Sewer Cable Shall Be Provided. The Camera Shall Transmit A Continuous Image To The Television Monitor As It Is Being Pulled Through The Pipe. The Image Shall Be Clear Enough To Enable The City Of Shelbyville Representative And Others Viewing The Monitor To Easily Evaluate The Interior Condition Of The Pipe. The Camera Shall Stamp The Video With Linear Footage And Project Number. An Audio Voice-Over Shall Be Made During The Inspection Identifying Any Problems.

5.) The Contractor Shall Bear All Costs Associated With Televising, Line Cleaning And Debris Removal & Disposal.

6.) If Any Pipe And/Or Joint Is Found To Be Faulty Or Leaking, Regardless Of The Results Of Leakage And Deflection Testing, The Contractor Shall Repair That Portion Of The Work To The Satisfaction And Approval Of The City Of Shelbyville. All Repaired Or Replaced Pipe Sections Shall Be Retelevised And Retested.

7.) The Digital Copies Of The Entire Sewer Line, Reproduction Map Indicating The Numbers Of All Pipes That Have Been Televised, And As-Built Drawings Shall Be Submitted To The City Engineer And Wastewater Superintendent For Their Records.

MANHOLE TESTING REQUIREMENTS:

1.) After Manhole Assembly And Prior To Backfilling, A City Representative Will Visually Inspect Each Structure For Leakage Or Evidence Thereof. Contractor Shall Contact The City Engineer Or Wastewater Superintendent At Least 24 Hours Prior To Backfilling.

2.) All Sanitary Manholes Shall Be Vacuum Tested In Accordance With ASTM C-1244-93 (Latest Revision).

3.) Test Shall Commence By Drawing A Vacuum Of 5 Psig. Timing Shall Commence With A Stopwatch Or Similar Device Of 99.8% Accuracy Once The Vacuum Pressure Reaches 5 Psig. Timing Shall End When The Vacuum Pressure Drops To 4.5 Psig.

4.) If Any Manhole Shows Leakage Or Signs Thereof, The Manhole Shall Be Repaired To The Satisfaction Of The City Of Shelbyville And Retested.

5.) The Manhole Shall Be Accepted If The Time Shown In Table 18 For The Designated Manhole Size And Depth Elapses Before The Vacuum Pressure Drops Below 4.5 Psig, At Which Time The Test Can Be Discontinued For The Accepted Manhole.

6.) All Vacuum Testing And Equipment Shall Be Provided By The Contractor. Any Repairs Shall Be The Responsibility Of The Contractor.

7.) The Design Engineer Or His/Her Representative Shall Attest That All Manholes Were Vacuum Tested, With Successful Results, In Accordance With ASTM C-1244-93. A City Representative Shall Be Present Onsite During Each Vacuum Test.

TABLE 17: SPECIFICATION TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q=0.0015

1 Pipe Diameter (In.)	2 Minimum Time (Min:Sec)	3 Length For Minimum Time (Ft)	4 Time For Longer Length (Sec.)	100 Ft.	150 Ft.	200 Ft.	250 Ft.	300 Ft.	350 Ft.	400 Ft.	450 Ft.
6	5:40	398	0.854L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	239	2.374L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
21	19:50	114	10.470L	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:40	99	13.674L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33
27	25:30	88	17.306L	28:51	43:16	57:41	72:07	86:32	100:57	115:22	129:48
30	28:20	80	21.366L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15
33	31:10	72	25.852L	43:05	64:38	86:10	107:43	129:16	150:43	172:21	193:53
36	34:00	66	30.768L	51:17	76:55	102:34	128:12	153:50	179:29	205:07	230:46

Columns 100 Ft. through 450 Ft.: Specification Time For Length (L) Shown (Min:Sec)

NOTE: For More Efficient Testing Of Long Test Sections And/Or Sections Of Larger Diameter Pipes, A Timed Pressure Drop Of 0.5 PSIG May Be Used In Lieu Of The 1.0 PSIG Timed Pressure Drop. If A 0.5 PSIG Pressure Drop Is Used, Required Test Time Shall Be Exactly Half As Long As Those Shown Above.

TABLE 18: SPECIFICATION TIME REQUIRED FOR A 0.5 PSIG PRESSURE DROP FROM 5PSIG TO 4.5PSIG FOR SIZE AND DEPTH OF MANHOLES INDICATED.

MANHOLE VACUUM TEST TIMES TABLE

Depth Of Manhole (Feet)	48"	60"	72"	84"	96"	108"	120"
	Minimum Time (Seconds)						
8	20	26	33	39	45	51	57
10	25	33	41	48	56	64	72
12	30	39	49	58	67	77	86
14	35	46	57	68	79	89	100
16	40	52	67	77	90	102	114
18	45	59	73	87	101	115	129
20	50	65	81	96	112	127	143
22	55	72	89	106	123	140	157
24	59	78	97	116	134	153	171
26	64	85	105	125	145	166	186
28	69	91	113	135	157	178	200
30	74	98	121	144	168	191	214

Columns 48" through 120": Diameter Of Manhole

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Updated Entire Set	02/11/2020

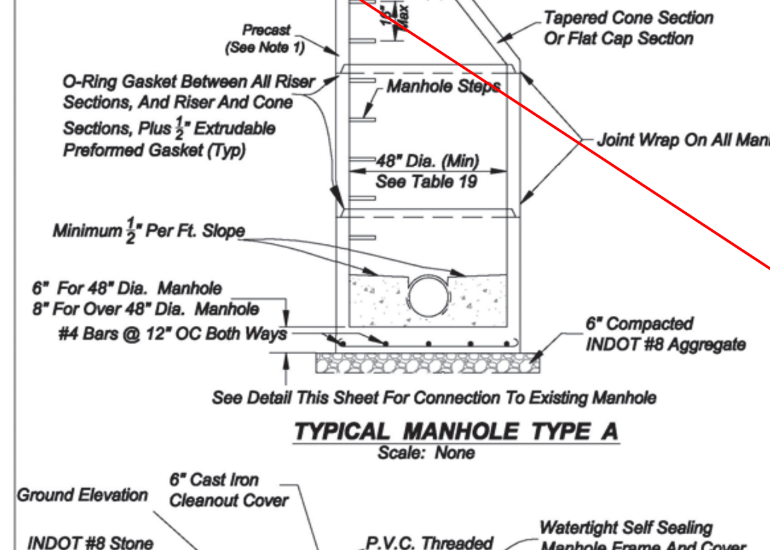
MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

SHELBYVILLE PRIDE IN PROGRESS

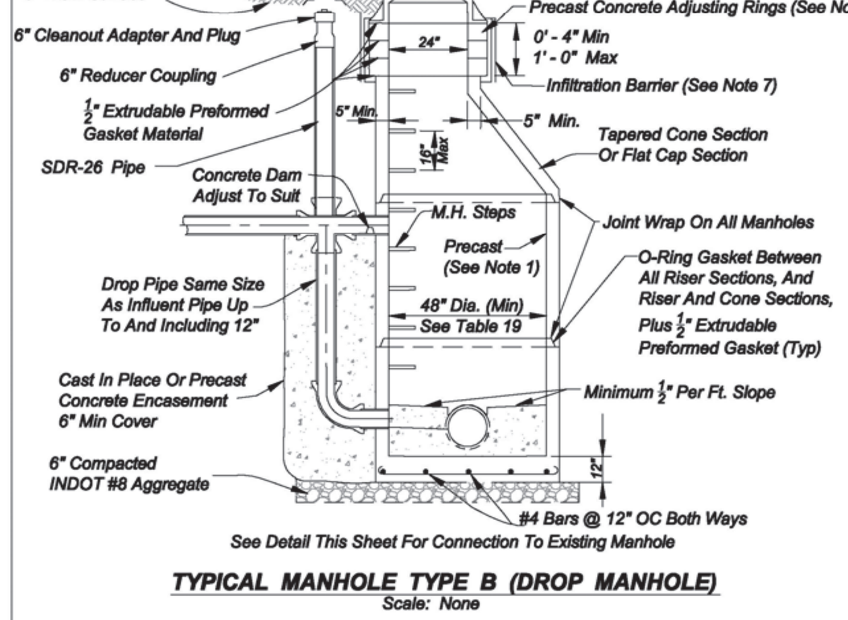
CITY OF SHELBYVILLE

SANITARY SEWER BEDDING AND PIPE DETAILS AND NOTES

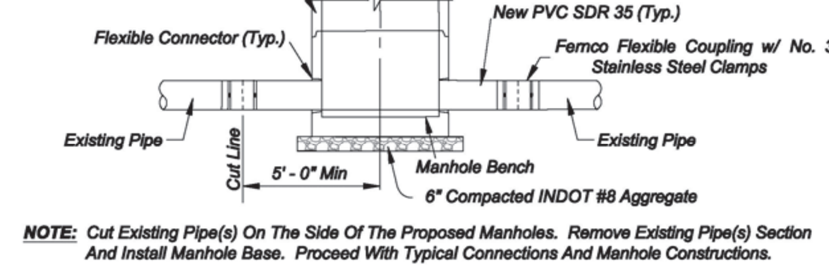
SHEET 11 OF 18



TYPICAL MANHOLE TYPE A
Scale: None



TYPICAL MANHOLE TYPE B (DROP MANHOLE)
Scale: None



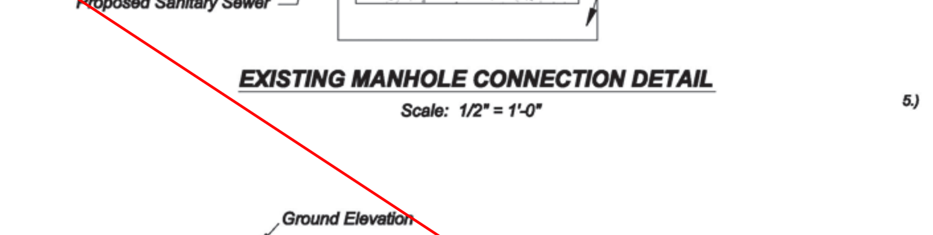
NOTE: Cut Existing Pipe(s) On The Side Of The Proposed Manholes. Remove Existing Pipe(s) Section And Install Manhole Base. Proceed With Typical Connections And Manhole Constructions.

SPECIAL MANHOLE CONNECTION DETAIL TO EXISTING PIPE
Scale: None

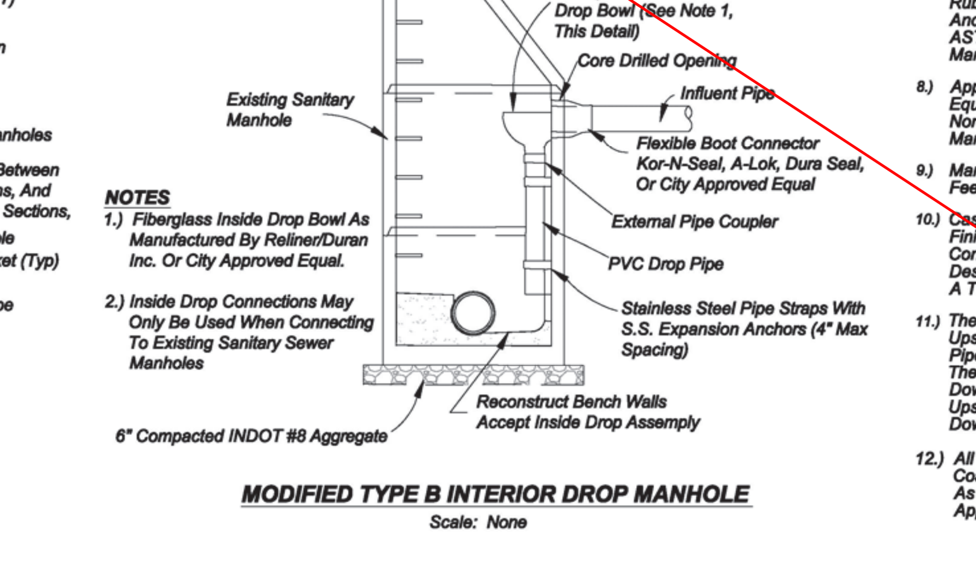
TABLE 19: SANITARY MANHOLE SIZES

Pipe Size	Minimum Manhole Diameter: Pipe Entering / Pipe Exiting At 0° - 45° Bend	Pipe Entering / Pipe Exiting At 45° - 90° Bend
8" - 21"	48"	48"
24"	48"	60"
27" - 30"	60"	60"
33" - 36"	60" *	72"

* 72" With A-Lock Connector



EXISTING MANHOLE CONNECTION DETAIL
Scale: 1/2" = 1'-0"



NOTES
1.) Fiberglass Inside Drop Bowl As Manufactured By Reliner/Duran Inc. Or City Approved Equal.
2.) Inside Drop Connections May Only Be Used When Connecting To Existing Sanitary Sewer Manholes

MODIFIED TYPE B INTERIOR DROP MANHOLE
Scale: None

MANHOLES:

1.) Precast Concrete Manholes Shall Conform To ASTM C-478, With Rubber Type Gaskets Equal To ASTM C-443. Monolithic Cast-In-Place Manholes Shall Only Be Used With The Prior Written Approval Of The City. The Base And First Riser Section Of The Precast Concrete Manhole Shall Be Integrally Cast As One Complete Unit. Precast Concrete Cones Shall Be Of The Eccentric Cone Type. No "See Through" Lift Holes Shall Be Allowed On Precast Concrete Manholes 48 Inches In Diameter Or Less. In Addition To The Rubber Type Gaskets All Joints Shall Receive A 1/2 Inch Diameter Nonasphaltic Mastic (Kent-Seal Or City Approved Equal) Conforming To AASHTO M-198 And Federal Specifications SS-S-210A. Pipe Connection To Manhole Shall Be Watertight Flexible Connector (KOR-N-SEAL, A-LOK, Dura-Seal) Or City Approved Equal.

2.) Where One Solid Riser Or Barrel Section Cannot Be Used, Final Adjustment In Elevation Of The Frame And Cover Shall Be Accomplished By The Use Of A 4 Inch Minimum Thickness Adjusting Ring As Detailed Herein To A Maximum Combined Thickness Of 12 Inches. Brick Or Block Shall NOT Be Used In The Construction Of A Manhole Or To Adjust The Elevation Of The Frame And Cover.

3.) Manhole Steps Shall Be Neenah No. R-1981-J, East Jordan Iron Works No. 8512, M.A. Industries No. PS 1-PF Or City Approved Equal.

4.) Manhole Frame And Cover Shall Be Self-Sealing Neenah R-1772-B, East Jordan 1022-2-A Or City Approved Equal. When Watertight Frame And Cover Is Required By The City Or Developer, Neenah R-1916-C, East Jordan 1022-2-WT Or City Approved Equal Shall Be Provided. All Covers Shall Be Stamped "SANITARY SEWER" With 2" Raised Letters.

5.) The Lowest Elevation To Receive Gravity Sanitary Service Must Be One (1) Foot Above The Top Of Manhole Casting Elevation Of Either The First Upstream Or Downstream Manhole On The Public Sewer To Which Connection Is To Be Made. Those Portions Of The Building Not Meeting The Stated Gravity Sanitary Service Requirement Shall Be Provided And Maintained By The Property Owner With A Grinder Pump System Or City Approved Equal Discharging To The Gravity Building Connection Outside Of The Public Right-Of-Way.

6.) See Sheet 11 For Manhole Vacuum Testing Requirements.

7.) Contractor Shall Install An External Rubber Sleeve Sealing System Wrapped Over The Flange Of The Manhole Frame To 2 Inches Below The Bottom Of The Lowest Adjusting Ring. The External Rubber Sealing Sleeve Shall Have A Minimum Thickness Of 60 Mils And Meet The Requirements Of ASTM C-923, ASTM C-443 And ASTM F-477. The Rubber Sleeve Shall Be Infi-Shield External Manhole Seal, Or As Approved By The City Of Shelbyville.

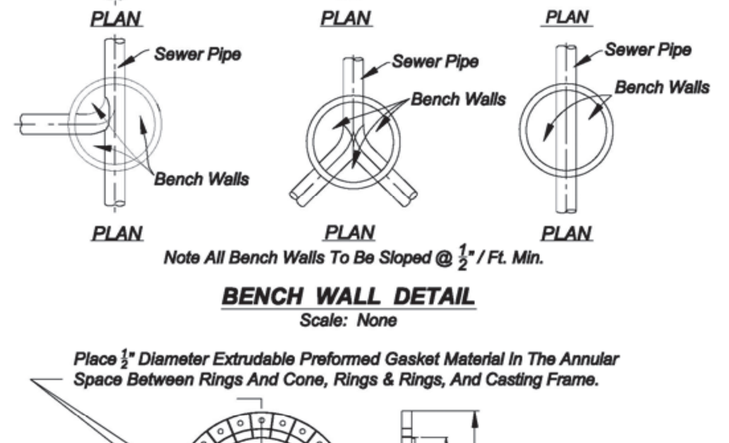
8.) Apply MasterSeal 614 Bituminous Coating, Or City Approved Equivalent, On The External Face Of The Entire Manhole. Apply Non-Shrink Mortar Or Epoxy Grout On The Internal Face At All Manhole Section Joints.

9.) Manholes Shall Be Installed At Distances Not Greater Than 400 Feet.

10.) Castings Shall Not Be Buried And Shall Be Flush With The Adjacent Finished Grade. Castings Which Are Surrounded By Asphalt Or Concrete Shall Be Constructed Within A Tolerance Of ± 0.1' Of The Designed Elevation. All Other Castings Shall Be Constructed Within A Tolerance Of ± 0.2' Of The Designed Elevation.

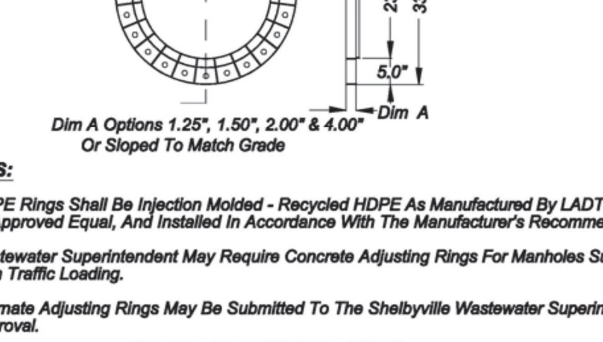
11.) There Shall Be A Minimum Of 0.1 Feet Of Fall Between The Upstream Invert(s) And The Downstream Invert In The Structure For Pipes Of The Same Diameter. For Pipes Of Differing Diameters, The Crown Of The Upstream Pipe Shall Match The Crown Of The Downstream Pipe. An Outside Drop Manhole Is Required For Upstream Inverts Which Are At Least Two Feet (2') Higher Than The Downstream Invert.

12.) All Manholes Receiving Discharge From A Forcemain Shall Be Coated With A City Approved Epoxy Or Polyurethane Coating Such As Culy Microsilica Cement Mortar And Epoxy Corrosion Barrier Or Approved Equal.



Note All Bench Walls To Be Sloped @ 1/2" / Ft. Min.

BENCH WALL DETAIL
Scale: None



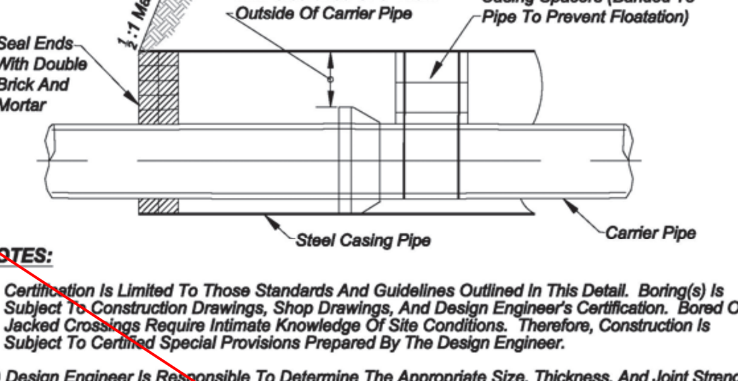
NOTES:

1.) HDPE Rings Shall Be Injection Molded - Recycled HDPE As Manufactured By LADTECH, Inc., Or Approved Equal, And Installed In Accordance With The Manufacturer's Recommendations.

2.) Wastewater Superintendent May Require Concrete Adjusting Rings For Manholes Subject To High Traffic Loading.

3.) Alternate Adjusting Rings May Be Submitted To The Shelbyville Wastewater Superintendent For Approval.

HDPE ADJUSTING RING
Scale: None



NOTES:

1.) Certification Is Limited To Those Standards And Guidelines Outlined In This Detail. Boring(s) Is Subject To Construction Drawings, Shop Drawings, And Design Engineer's Certification. Bored Or Jacked Crossings Require Intimate Knowledge Of Site Conditions. Therefore, Construction Is Subject To Certified Special Provisions Prepared By The Design Engineer.

2.) Design Engineer Is Responsible To Determine The Appropriate Size, Thickness, And Joint Strength For Steel Casing Pipes.

3.) Carrier Pipes Shall Be In Accordance With Shelbyville Standards.

4.) Bore Pits Shall Be Designed To Maximize Safety In Accordance With All Applicable State And Federal Regulations.

ROADWAY BORING DETAILS
Scale: None

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Added Joint Wrap Note For Manholes	01/10/2014
3	Updated Entire Set	02/11/2020

MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

SHELBYVILLE PRIDE IN PROGRESS

CITY OF SHELBYVILLE

SANITARY SEWER DETAILS AND NOTES

SHEET 12 OF 18

SANITARY SEWER LATERAL PIPE AND FITTINGS

1.) Service Laterals Shall Be Gasketed PVC Pipe From The Sewer Main To The Building. Laterals Less Than 15 Feet Deep Shall Be SDR-35. Laterals Greater Than 15 Feet Deep Shall Be SDR-26. All Laterals Shall Be Inspected By The Shelbyville Wastewater Department Prior To Backfill.

2.) Joints Shall Be Flexible Gasket Push-On-Compression Type Conforming To ASTM D-3212 And ASTM F-477. No Solvent Cement Joints Shall Be Allowed.

3.) Lateral Size Shall Be A Minimum Of 6 Inches In Diameter Between Mainline Sewer And Clean-Out Closest To Building. Lateral Size Shall Be A Minimum Of 4 Inches In Diameter Between Building And First Downstream Clean-Out.

4.) A Minimum Of One Clean-Out Shall Be Installed For Each Lateral. Where The Length Of A Lateral Exceeds 100 Feet, Then One Clean-Out Shall Be Installed For Every 100 Feet Of Lateral Length. In Any Event, A Clean-Out Shall Be Located No Farther Than 5 Feet From The Building.

5.) In Accordance With City Ordinance §50.048, Approval Consideration Of A Lateral Connection Requires The Owner Of The Residence Or Business To Provide The Following Information On A Legible Diagram: Name Of Property Owner, Address, Telephone Numbers Of Both Property Owner And Contractor, Depth And Position Of Lateral Between Mainline Sewer And The Building, Location Of Connection Point Referenced To Any Permanent Object, Length And Size Of Pipe To Be Installed, Pipe Material, Slope Of Pipe, Bedding Type, Pipe Contractor, And Method Of Connection.

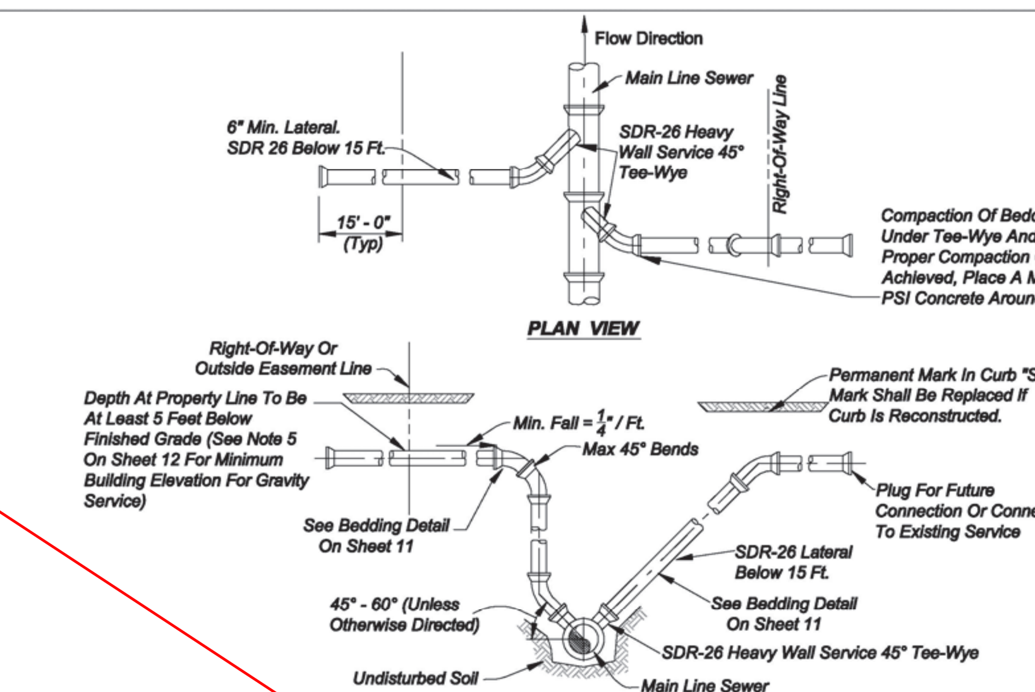
6.) Contractor Shall, When Curbs Are Available, Engrave A 3-Inch High By $\frac{1}{8}$-Inch Deep "S" On The Curb Directly Above Each Service Lateral. Where Curbs Are Not Available, Contractor Shall Notch The Sidewalk Directly Above Each Service Lateral. If No Curb Or Sidewalk Is Present, A Concrete Monument Shall Mark The Lateral Location.

7.) A Backflow Prevention Valve May Be Installed By The Property Owner If Approved By The Wastewater Superintendent. Property Owner Shall Be Solely Responsible For Installation And Maintenance. The Backwater Prevention Valve Shall Be Installed On The Owner's Property Outside City Right-Of-Way. The Backflow Prevention Valve Shall Be Housed In A Minimum 18 Inch Diameter Meter Pit, Readily Accessible At All Times, And Located A Maximum 3 Feet Deep. The City May Require A Backflow Prevention Valve If The Finished Floor Elevation Of A Structure Is Below The Top Of Casting Elevations Of The Immediate Upstream Or Downstream Sanitary Manhole.

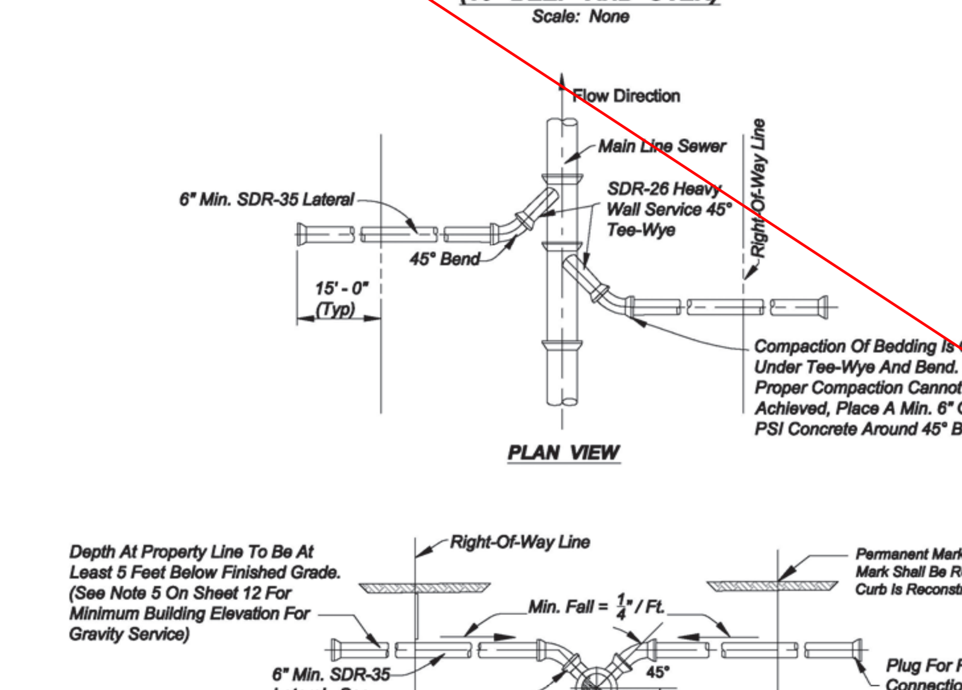
8.) The Approval Of A New Sanitary Sewer Service Lateral Or The Modification Of An Existing Service Lateral Requires The Procurement Of A Sewer Connection Permit From The Shelbyville Wastewater Department.

9.) Lateral Abandonment Requires Approval From The Shelbyville Wastewater Department. A Watertight Cap Or Seal With Fernco Type Fittings Shall Be Installed On The Abandoned Lateral In The Vicinity Of The Sidewalk Or Curb.

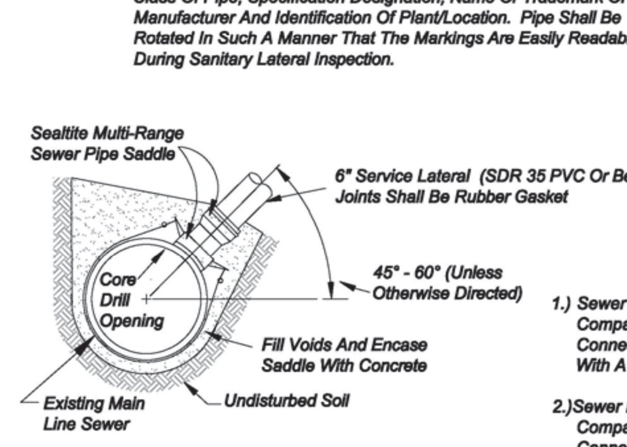
10.) In Accordance With ASTM D-3034, The Outside Of Each Pipe Section Shall Be Legibly Marked With The Date Of Manufacture, Class Of Pipe, Specification Designation, Name Or Trademark Of Manufacturer And Identification Of Plant/Location. Pipe Shall Be Rotated In Such A Manner That The Markings Are Easily Readable During Sanitary Lateral Inspection.



SERVICE CONNECTION FOR DEEP SEWERS (15' DEEP AND OVER)
Scale: None



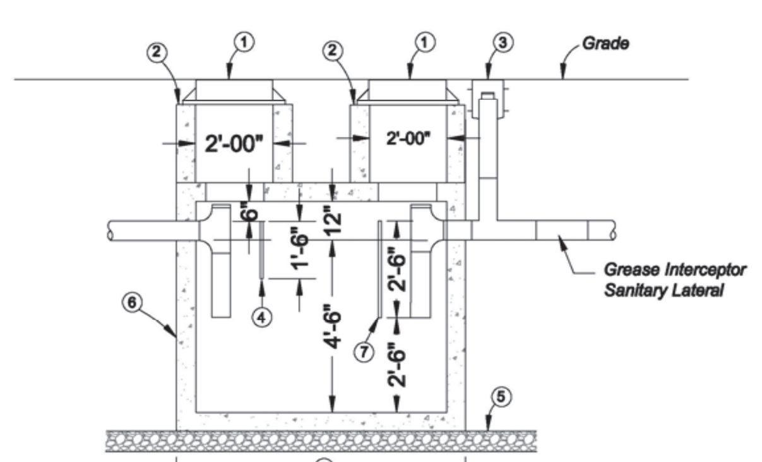
SERVICE CONNECTION FOR SHALLOW SEWERS (LESS THAN 15' DEPTH)
Scale: None



1.) Sewer Pipe Saddle Shall Be General Engineering Company Sealtite Type "U" For Laterals Connecting To Existing Mainline Sanitary Sewer With A 6.275" OD. TO 30.00" OD.

2.) Sewer Pipe Saddle Shall Be General Engineering Company Sealtite Type "C" For Laterals Connecting To Existing Mainline Sanitary Sewer Over 30.00" OD.

SANITARY LATERAL SADDLE TAP
Scale: None



NOTES:

1. Cast Iron Manhole Frame And Cover Neenah R-6461-FH Or R-6462-FH Or Approved Equal
2. 24" Diameter Concrete Pipe Riser
3. Cast Iron Clean-Out And Cover
4. Precast Concrete Inlet Baffle
5. 6" Compacted INDOT #8 Aggregate
6. Precast Concrete Structure Designed For Vehicle Traffic. (Structure Shall Be Approved By The City And Shall Have 6" Minimum Wall Thickness)
7. Precast Concrete Outlet Baffle
8. Length And Width Dimensions Shown Correspond To A 1,000 Gallon Capacity Grease Trap. Larger Dimensions May Be Required. See Site Plan For Actual Size. Additional Vertical Depth May Also Be Required.
9. All New Commercial Or Industrial Entities, Which Either Generate And/Or Waste Oil, Grease Or Other Similar Substances Thereto, Shall Construct A 1,000-Gallon (Minimum) Grease Trap. The Design Engineer Shall Submit Detailed Calculations For Size Justification Of Said Trap. Calculations Shall Be Accompanied With References Specifically Denoting Origin Of Sizing/Calculation Method.
10. Toilets, Urinals, Sinks, And Other Non-Grease Laden Wastes Shall Not Waste Through The Grease Interceptor. All Other Waste Shall Enter Through The Grease Interceptor, Through The Inlet Pipe Only.
11. Grease Interceptor Shall Be Installed Downstream Of All Kitchen Drains Or Grease-Laden Equipment Drains, And In A Location Readily And Easily Accessible For Cleaning And Inspection Purposes, In Accordance With City Ordinances §50.048 (I) And §50.052 (D)(1).
12. The Oil/Grease Trap Shall Be Located Outside The Building And At A Distance Far Enough To Allow Soluble Grease/Oil To Become Insoluble. Water Temperatures Shall Be Less Than 120° F Prior To Entering The Grease Interceptor. Greater Distances May Be Required By The City.
13. Each Building Or Facility Shall Have A Separate Individual Grease Interceptor.
14. All Property Owners Or Utility Users With Grease Interceptors Shall Have Sole Responsibility For The Installation And Maintenance Of The Grease Interceptor. Owners Or Utility Users Shall Be Responsible For The Proper Removal And Disposal, By Appropriate And Lawful Means, Of The Captured Material In The Interceptors.
15. The City Of Shelbyville Reserves The Right To Inspect All Grease Interceptors That Are Located Upstream Of City Owned Sewers. Any Person, Business, Industry, Or Owner That Is Found To Be Responsible For Discharging Fats, Oils, Grease, Or Other Similar Substances Thereto Shall Be Responsible For The Cost Of Remediating Any And All Issues Created By Such Discharge.

FOOD GRADE GREASE INTERCEPTOR DETAIL
Scale: None

NOTE:

When An Oil Separator Is Required For Garages And Other Industrial Uses, The Oil Separator Must Be Approved By The WRRF Superintendent.

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Updated Entire Set	02/11/2020

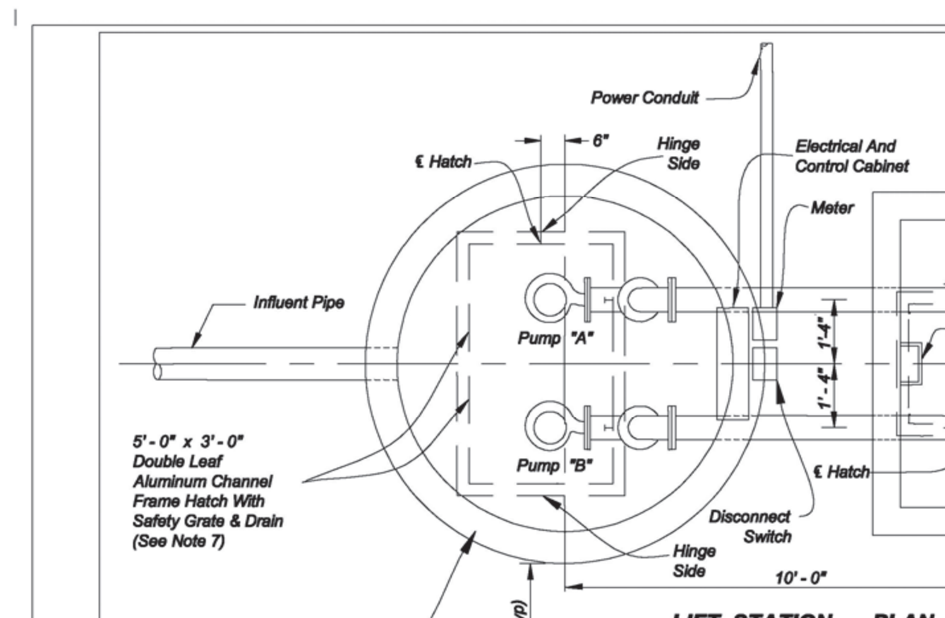
MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

SHELBYVILLE PRIDE IN PROGRESS

CITY OF SHELBYVILLE

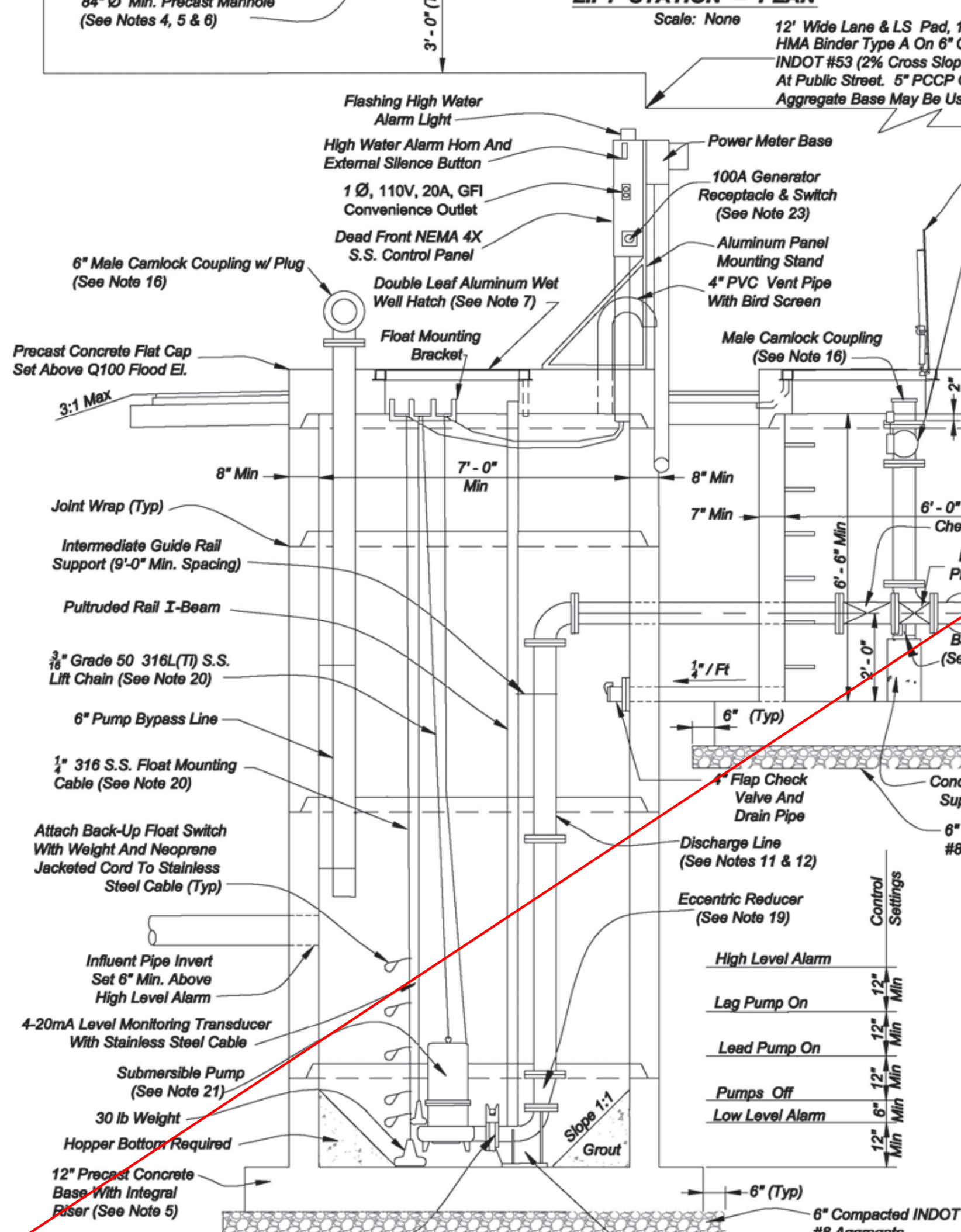
SANITARY SEWER DETAILS AND NOTES

SHEET 13 OF 18



LIFT STATION – PLAN
Scale: None

12' Wide Lane & LS Pad, 1 ½" HMA Surface Type A On 2" HMA Binder Type A On 6" Compacted Aggregate Base INDOT #53 (2% Cross Slope). Build To And Provide 20' Radii At Public Street. 5" PCCP On 2" INDOT #8 Compacted Aggregate Base May Be Used Instead Of Ashpalt Section.



LIFT STATION – SECTION
Scale: None

GENERAL NOTES:

1.) Lift Station Use Shall Be Only On A Temporary Basis Or As Necessary To Comply With The City Of Shelbyville Sanitary Sewer Master Plan.

2.) Actual Lift Station Dimensions, Control Settings, & Pump Selection To Be As Indicated By The Design Engineer's Certification Sheet.

3.) City May Require Lift Station Perimeter To Be Fenced. If A Fence Is Required, Fence Shall Be Coated Chain Link. Gate(s) Shall Be Wide Enough To Permit Passage Of A Pump And Any Hauling Equipment.

4.) Lift Station And Valve Pit Manholes Shall Be Precast Concrete In Accordance With ASTM C-478, With Rubber Gaskets Equal To ASTM-443 With $\frac{1}{2}$" Gasket Material Or City Of Shelbyville Approved Equal. See Sanitary Sewer Details And Notes Sheet 12 For Manhole Steps.

5.) Concrete Lift Station Structure Shall Be Designed Based On Site Conditions To Resist Any Buoyancy Forces That May Be Encountered.

6.) All Lift Station Exterior Vertical Surfaces Shall Be Dampproofed With MasterSeal 614 Bituminous Coating, Or City Approved Equivalent.

7.) Aluminum Hatches Shall Be Channel Frame Type Flygt Safe-Hatch Or Approved Equal. Leaf Shall Be $\frac{1}{4}$" Aluminum Diamond Plate Live Load Rated To 300 PSF. Channel Frame Shall Be $\frac{1}{4}$" Extruded Aluminum With A Mill Finish And Bituminous Coating On Exterior Surfaces. Hatch Shall Be Provided With Type 316 S.S. Hardware Throughout, Automatic Hold-Open Arm With Release Handle, Slam Lock With Removable Handle, And 1-1/2" Drain Coupling.

8.) All Manholes And Lift Stations Receiving Discharge From A Forcemain Shall Be Coated With A City Approved Epoxy Or Polyurethane Coating Such As Culy Microsilica Cement Mortar And Epoxy Corrosion Barrier Or Approved Equal.

9.) Sewer Connection To Wet Well Shall Be KOR-N-SEAL, A-LOK, Dura-Seal, Or City Of Shelbyville Approved Equal.

10.) Force Main Penetrations Of Wet Well And Valve Pit Shall Be Core Drilled And Made Watertight Through Use Of KOR-N-SEAL, A-LOK, Dura-Seal, Or City Of Shelbyville Approved Equal.

11.) Piping And Fitting In Wet Well And Valve Pit Shall Be Factory Primed Tnemec Series 140-1211 To A Dry Film Thickness Of 5.0 To 11.0 Mils And Shall Be Field Painted With Tnemec Series 69-Color To A Dry Film Thickness Of 5.0 To 6.0 Mils. Fittings Shall Be Manufactured By Clow, Tyler, Mueller, Or As Approved By City Of Shelbyville.

12.) Piping In And Within 2 Feet Of Wet Well And Valve Pit Shall Be Class 53 Flanged Ductile Iron Pipe And Shall Be Manufactured By Griffith, U.S. Pipe, Or As Approved By City Of Shelbyville. All Fasteners Within Wet Well And Valve Vault Shall Be 316 S.S.

13.) Piping Not Within 2 Feet Of Wet Well And Valve Pit Shall Be DI AWWA C151, HDPE AWWA C906, PVC ASTM D2241, PVC AWWA C900, Or City Of Shelbyville Approved Equal. See Design Engineer's Certification Sheet For Pipe Class.

14.) For All Forcemains, Contractor Shall Install Two 10-Gauge Insulated, Solid Copper Tracer Wire And Polyethylene Identification Tape. Both Items Shall Be Highly Resistant To Alkalis, Acids, And Other Destructive Agents Found In Soil. The 10-Gauge Tracer Wire Shall Be Directly Attached To The Outside Of The Forcemain Pipe Every 10 Feet. The Polyethylene Identification Tape Shall Have A Minimum Thickness Of 4 Mils And Shall Be Placed Directly Over The Pipe 18" Below Final Grade.

15.) Pressure Gauge Shall Be Trerice Model 450 LFB Or City Of Shelbyville Approved Equal. Drill & Tap Run Of Pipe To Install Pressure Gauge.

16.) Camlock Coupling And Eccentric Plug Valve On By-Pass Line Shall Be 6 Inch Diameter With Transition To Force Main Size Occurring With Concentric Reducer Placed On Top Of Base Elbow. Fix Operating Nut For Eccentric Plug In Vertical Position To Enable Wrench Operation From Surface. Layout Of All Valve Vault Fittings And Equipment To Be Based Upon By-Pass Line Being Up Close To Hatch Opening As Shown.

17.) Plug Valve Shall Be An Eccentric Buna N Rubber Faced Plug With Hand Lever Operation In-Line And Gear Operation On By-Pass. Valve Shall Be Valmatic F-5800-R, Clow F-5412, Or As Approved By City Of Shelbyville. The Valve Shall Be Furnished With Fusion Bonded Epoxy Coating Inside And Out In Accordance With AWWA C-550.

18.) Check Valve Shall Be Bronze Seated, Rubber Coated, And Shall Be Provided With Bolted Covers For Easy Access To The Discs. Valve Shall Be Outside Adjustable Weight & Lever As Mueller A-2600-6-01, Clow F-5382, Or As Approved By City Of Shelbyville. The Valve Shall Be Furnished With Fusion Bonded Epoxy Coating Inside And Out In Accordance With AWWA C-550.

19.) Eccentric Reducer Shall Be Installed As Required For Force Main Size. Consult City Of Shelbyville Waste Water Department If Force Main Piping Is Greater Than 6-Inch Diameter.

20.) Provide Sufficient Lift Chain, Float Mounting Cable, And Pump Power & Sensor Cable To Enable Non-Spliced Field Adjustment. Lift Chain Shall Have A Minimum Work Load Limit Of 1100 Pounds. Float Mounting Cable Shall Be Held In Place By Weight. Floats Shall Be Fastened To Cable With S.S. Clamps Near Each Float Location. Pump Power & Sensor Cable Shall Be Suitable For Submersible Pump Applications And This Shall Be So Indicated By A Code/Legend Permanently Embossed On The Cable.

21.) Pumps "A" And "B" Shall Be Identical, Centrifugal, And Submersible. Pumps Shall Be Hydromatic Or Flygt Grinder Or Chopper Pumps Or City Approved Equal. Manufacturer Shall Warrant The Pumps For Five Years After Installation With Pro-Rated Warranty.

All Mating Surfaces Intended To Be Watertight Shall Be Machined And Fitted With Nitrile Rubber O-Rings With Sealing Complete When Metal - To - Metal Contact Is Made, Resulting In Controlled Compression Of O-Rings Without Specific Torque Limit. Fasteners Shall Be 316 S.S.

Mechanical Shaft Seal System Running In An Oil Reservoir Shall Have Separate, Constantly Lubricated Lapped Seal Faces. The Lower Seal Unit Between Media And Oil Reservoir Shall Consist Of One Stationary Seat And One Rotating Ring Held In Place By Its Own Spring. The Rotating Seat Ring And The Stationary Seat Ring Shall Be Made Of Tungsten-Carbide. The Lower Seal Shall Be Removable Without Disassembling The Seal Chamber. The Upper Seal Between Seal Chamber And Motor Shall Be Of The Same Design With Its Own Spring. Seals Shall Be Maintenance Free, But Shall Be Easily Inspectable.

Lower Seal Failure Alarm Shall Be Engaged By Seal Failure Sensor Provided In The Seal Chamber Which Senses Water Intrusion Through The Lower Seal.

Overtemperature Alarm And Pump Shut-Down Shall Be Engaged By Heat Sensor Attached To The Motor Windings. Motor Winding And Stator Lead Insulation Shall Be Class F With Maximum Temperature Capability Of 155°C Or Better. Housing Shall Be Filled With High-Dielectric Oil. Air Filled Housing May Be Acceptable When Approved By City Of Shelbyville. Pump And Motor Shall Be Designed To Operate Partially Or Fully Submerged In Pumped Media Without The Use Of Cooling Jackets.

Rail System Shall Enable The Easy Removal Of The Pump Without The Need For A Person To Enter The Wet Well. A Non-Corrosive FRP I-Beam Shall Be Provided For Each Pump. The Guide Rail Shall Be Supported At The Bottom By The Discharge Elbow, Aligned Perfectly Plumb And Securely Affixed To Access Frame. One Intermediate Guide Rail Support Is Required For Each 9' Of Guide Rail Length. Schedule 40 S.S. Guide Rails May Be Acceptable If Pump Is Approved By City Of Shelbyville.

22.) Automatic Pump Control System Shall Include All Necessary Items And Appurtenances, Which Might Normally Be Considered A Part Of A Complete System, Including But Not Limited To; Condensate Heater, Push To Test Button, Push to Silence Button, Alternator Selector Switch For Manual Designation Of Lead Pump, Time Delay Relay For Lag Pump Start, And Pump Run Time Hour Meters. System Shall Be Supplied By One Manufacturer, Shall Be Factory Assembled, Wired, And Tested, And Shall Be Per Complete Electrical Drawings And Instructions. Major Components And Sub-Assemblies Shall Be Identified As Function With Laminated, Engraved, Bakelite Nameplates. System Shall Be Built In A NEMA 4x S.S. Enclosure Suitable For The Specified Horsepower And Voltage Of The Pumps. The Outer Door Of The Panel Shall Be A Hinged Dead Front With Provisions For Padlocking. Inside Shall Be A Separate Hinged Panel To Protect All Electrical Components, H-O-A Switches, Run Lights, Circuit Breakers, Etc., Mounted Such That Only The Faces Protrude Through Said Panel With No Wiring Fixed To Said Panel. The Manufacturer Shall Warrant The Control Center For One Year After Installation Covering 100% Parts And Labor.

The Control Center Shall Be Approved By The WRRF Superintendent To Control The Pumps And to Maintain The Level In The Wet Well. The Controller Shall Also Receive A Signal From The Back-Up Floats And Automatically Switch To Back-Up If The 4-20 mA Signal Is Lost. All Necessary Components For Above Controller To Operate Shall Also Be Included.

The Control Center Shall Incorporate Connections For Heat Sensors Which Are Installed In The Pumps. The Connection Shall Disconnect The Starter Upon High Temperature Signal, And Will Automatically Reconnect When Condition Has Been Corrected.

The Control Center Shall Incorporate Connections For Seal Failure Sensors Which Are Installed In The Pumps. The Panel Will Have A Seal Failure Alarm Light For Each Pump. This Alarm Indicates Failure Of The Lower Mechanical Seal In The Pump. This Will Be An Alarm Light Only And Will Not Shut Down The Pump.

The Liquid Level Of The Wet Well Shall Be Sensed By A Submersible Level Transducer Model 6100 As Manufactured By Sigma. The Transducer Shall Be A 2-Wire Type To Operate From A Supply Voltage Of 15 To 45 VDC And Produce A 4-20 mA Instrumentation Signal In Direct Proportion To The Measured Level Excursion Over A Factory-Calibrated Range Which Will Be Indicated By Readout On The Front Panel. It Shall Be Of The Head-Pressure Sensing Type, Suitable For Continuous Submerged Operation And Shall Be Installed In Accordance With The Manufacturer's Instructions. The Bottom Diaphragm Face Of The Sensor Will Be Installed Where Shown On The Plans. The Diaphragm Face Shall Be A Minimum Of 2.5 Inches Outside Diameter.

Provide The Services Of A Factory-Trained, Qualified Representative To Inspect, To Adjust, And To Place The System In Trouble-Free Operation And To Instruct The Operating Personnel In The Proper Operation And Care Of The System.

All Major Components Of Control Center Shall Be American-Made And Available From Local Sources Within 100 Miles Of The City Of Shelbyville Or Approved By The Waste Water Superintendent. Pump Manufacturer Shall Accept The Control Center In Writing To Ensure Unit Responsibility And Warranty.

Provide A Manual Transfer Type Disconnect Switch Housed In A Separate NEMA 4 X S.S. Enclosure With External Operation Handle Capable Of Being Locked In The "ON" Normal Position Or The "ON" Secondary Position With A Middle "OFF" Position. Control Panel Shall Be A Single Or Double Door NEMA 4X With A 3 Point Latch.

A Lightning Arrestor Shall Be Provided At The Phase Relay Block And Connected To Each Line Of The Incoming Side Of The Power Input Terminals. A Single Main Fusible/Breaker Disconnect Switch Of Adequate Size To Provide Power For Control, Operation, And Appurtenant Components Shall Be Provided. Provide A Circuit Breaker And Magnetic Starter With Each Leg Manual Reset Overload Protected For Each Pump. Starters Shall Have Auxiliary Contacts On 3 Ø Applications To Operate Both Pumps Simultaneously. Provide A Phase Monitor With Phase Fail Relay. Provide A Circuit Breaker And Transformer To Power The Control Panel With 1 Ø, 115 Volt Service For All Control Functions Including Scada, Radio And Flowmeter. Provide A Green "RUN" Light And H-O-A Switch To Enable Field Connections.

Materials And Installation Of The Required Equipment Grounding Shall Be In Accordance With NEC Section 250-83(c). All Wiring Shall Have Not Less Than 600 Volt Insulation. Wiring And Buss Shall Be In Accordance With NEC, State, Local, And NEMA Standards. All Wiring Shall Be Color Coded. Minimum 4" Diameter, Schedule 40 Conduit Shall Be Provided From Wet Well To Control Panel Enabling Pump Power & Sensor Cables And Float Switch Cables To Be Easily Pulled. Seal Conduit At Control Panel To Prevent Sewer Gases From Entering. All Conduits, Fittings, Or Connections Shall Enter From The Bottom Of Enclosures.

Sump Level Rise To Lead Pump Run Float Causes Lead Pump To Operate. Lead Pump Operating And Sump Level Falling To Pumps Off Float Causes Lead Pump To Shut Off. Lead Pump Operating And Sump Level Rising To Lag Pump Run Float Causes Lag Pump To Operate. Lag Pump Operating And Sump Level Falling To Pumps Off Float Causes Both Pumps To Shut Off. Sump Level Rise To High Level Alarm Causes High Level Alarm To Operate. Sump Level Fall To Low Level Alarm Causes Low Level Alarm To Operate. An Alternating Relay Shall Be Provided To Cause Pumps To Alternate Whenever Pumps Off Float Is De-Energized. If One Pump Fails For Any Reason, The Remaining Pump Shall Operate Upon Sump Level Rise To Lag Pump Run Float. An Hour Meter Shall Be Provided For Each Pump To Record The Elapsed Operating Time Of Each Pump. Floats Are Backup If Level Transducer Fails.

23.) Generator Receptacle To Be Crouse-Hinds AR2041-SS22 Dead Front Interlocked Receptacle With Factory Sealed Switch For Receipt Of The City Of Shelbyville Crouse-Hinds AP-20457-SS22 M80 Plugged Portable Generator Set.

24.) The Contractor Shall Furnish A Wireless Cellular Monitor As Manufactured By Omni-Site.net And Approved By The City Of Shelbyville. The Monitor Shall Be Mounted In The Above Main Pump Control Panel With Antenna Mounted On Enclosure Exterior. Contacts To Be Monitored Shall Be Pump 1 Fail, Pump 2 Fail, Pump 1 Seal Fail, Pump 2 Seal Fail, High Water Alarm, Low Water Alarm, Control Power Fail, Main Power Phase Fail, Pump 1 Run (Normally Open Contact), And Pump 2 Run (Normally Open Contact).

25.) Four Manuals Shall Be Presented To The Owner Which Shall Include The Following Minimum Information: 1) Operation Instructions, 2) Maintenance Instructions, 3) Recommended Spare Parts List, 4) Lubrication Schedule, 5) Structural Diagrams, 6) As-Built Wiring Diagrams, & 7) Bill Of Materials.

NOTICE:
CERTIFICATION IS LIMITED TO THOSE STANDARDS AND GUIDELINES PER THIS SHEET. CONSTRUCTION IS SUBJECT TO CONSTRUCTION DRAWINGS, SHOP DRAWINGS, AND DESIGN ENGINEER'S CERTIFICATION SHEET.

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Updated Entire Set	02/11/2020

MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

SHELBYVILLE PRIDE IN PROGRESS

CITY OF SHELBYVILLE

SANITARY SEWER LIFT STATION STANDARDS AND GUIDELINES

SHEET 14 OF 18

FIRE DEPARTMENT GENERAL NOTES

1.) A Water Distribution Plan Shall Be Submitted As Part Of The Site Development Plans And Approved By The City Of Shelbyville Tech Review Committee Prior To Issuance Of An Improvement Location Permit. The Water Distribution Plan Shall Include The Following Items:
   A. Existing And Proposed Water Mains With Sizes Denoted
   B. Location Of Existing And Proposed Fire Hydrants
   C. Location Of Proposed Fire Protection Equipment (FDC, PIV, Etc.)

2.) An Approved Water Supply Capable Of Supplying The Required Fire Flow For Fire Protection Shall Be Provided To Premises Upon Which Facilities, Buildings, Or Portions Of Buildings Are Hereafter Constructed.

3.) Water Distribution Mains Shall Be Looped Or Designed To Facilitate Future Looping As Appropriate. Distribution Mains For Commercial And Industrial Structures Shall Be Minimum 8 Inches In Diameter Or As Determined By The Shelbyville Fire Department And Indiana American Water.

4.) All Water Mains Shall Be Minimum 8 Inches In Diameter. All Hydrant Feeder Lines Shall Be Minimum 6 Inches In Diameter. All Public And Private Water Mains And Appurtenances Shall Meet Indiana American Water Company And American Water Works Association (AWWA) Specifications.

5.) All Fire Hydrants And FDCs Shall Be Bagged Prior To Being Placed In Service.

6.) A Minimum Of Two Means Of Access Shall Be Provided For:
   A. Any Subdivision With 50 Or More Single Or Double Family Residential Lots;
   B. Any Development Having One Or More Commercial, Multi-Family, Institutional, Or Industrial Structures 3 Stories Or Greater In Height; Or
   C. Any Development Having 3 Or More Commercial, Multi-Family, Institutional, Or Industrial Structures Of Any Height.

7.) Fire Department Accessibility Shall Not Be Obstructed In Any Manner, Including The Parking Of Vehicles. Fire Apparatus Access Shall Have A Minimum Unobstructed Width Of 26 Feet, Measured From The Outside Of The Building Sidewalk And Foundation Landscaping, And A Minimum Unobstructed Vertical Clearance Of 13 Feet 6 Inches, Except For:
   A. Truck Dock Areas Designed For Loading And Unloading
   B. Areas Used For Trash Compactors
   C. Parking Areas Approved By The Shelbyville Fire Department

8.) Approved Fire Apparatus Access Roads Shall Be Provided For Every Facility, Building, Or Portion Of A Building Hereafter Constructed Or Moved Into Or Within The City Of Shelbyville. The Fire Apparatus Access Roads Shall Extend To Within 150 Feet Of All Portions Of The Facility Or Any Portion Of The Exterior Wall Of The First Story Of The Building. Apparatus Access Road Shall Be Constructed Of Driveable Grass, Asphalt, Or Concrete And Be Designed To Adequately Support Fire Vehicle Loads Of 75,000 Pounds Or Greater.

9.) Fire Apparatus Access Road Shall Be Constructed And Made Serviceable Prior To Start Of Building Construction. Fire Apparatus Access Roads Shall Not Be Obstructed In Any Manner, Including The Parking Of Vehicles. The Apparatus Access Road Shall Have A Minumum Unobstructed Horizontal Width Of 24 Feet And Vertical Clearance Of 13 Feet 6 Inches At All Times.

10.) Knox Boxes Are Required For All Commercial, Industrial, Institutional, Apartment, And Townhouse Buildings And Shall Be Mounted In Accordance With The Specific Directions Of The Shelbyville Fire Department. Required Number Of Knox Boxes Shall Be Determined By The Shelbyville Fire Department.

11.) Alarm Panel Shall Be Located Near The Front Door.

12.) Electrical Rooms, Riser Rooms, Roof Access, Basement Access, And Alarm Rooms Shall Be Labeled In Minimum 3-inch Letters And Shall Be Of Reflective Material.

13.) No Smoking Signs Shall Be Located Near All Outside Doors.

14.) Vehicle Impact Protection Shall Be Installed For Gas Meters.

15.) New And Existing Buildings Shall Have Approved Address Numbers Plainly Legible And Visible From The Road Along The Property Frontage. These Numbers Shall Contrast With Their Background. Address Numbers Shall Be Arabic Numerals Or Alphabet Letters. Numbers Shall Be A Minimum Of 4 Inches High With A Minimum Stroke Width Of 0.5 Inches.

16.) Temporary Building Address Signs Shall Be Installed At The Start Of Construction For All New Buildings. Temporary Address Signs Shall Meet The Requirements In Note 15.

17.) Streets And Roads Shall Be Identified With Approved Signs. Temporary Signs Shall Be Installed At Each Street Intersection When Construction Of New Roadways Allows Passage By Vehicles. Signs Shall Be Of An Approved Size, Weather Resistant, And Be Maintained Until Replaced By Permanent Signs.

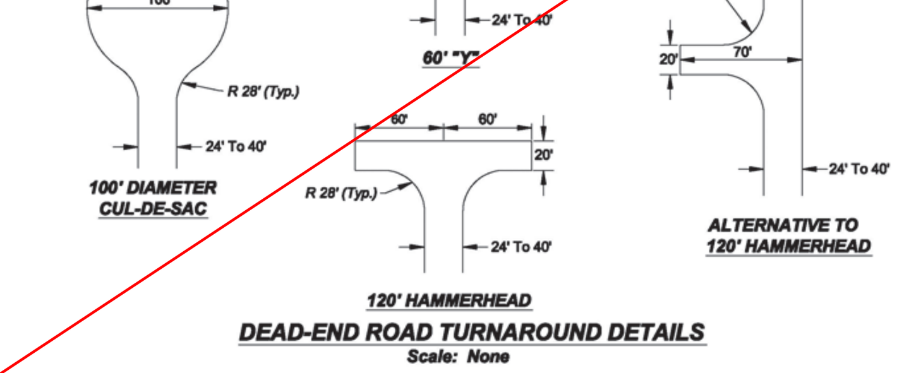
18.) All Roads Or Drives Which Dead-End That Are In Excess Of 150 Feet In Length Shall Be Designed With Width And Turnaround Provisions In Accordance With The Dead-End Road Turnaround Detail On This Sheet. All Roads Or Drives With Fire Apparatus Access Shall Have A Minimum Unobstructed Vertical Clearance Of 13 Feet 6 Inches.

19.) All Other Items Not Specifically Stated Herein Shall Be In Accordance With The Most Recently Adopted Edition Of The Indiana Fire Code, NFPA, The International Fire Code, and Indiana General Administrative Rules.

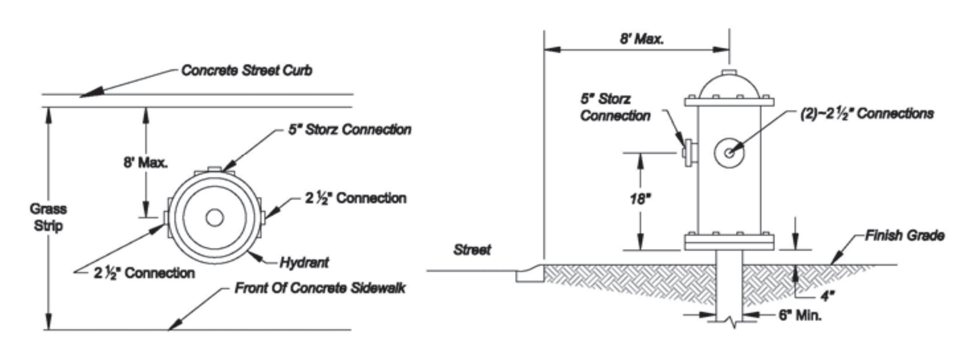
20.) For Required Inspections, Contact Shelbyville Fire Department 24 Hours Prior To Inspection At 317-392-5119.

TABLE 20: DEAD-END ROAD REQUIREMENTS

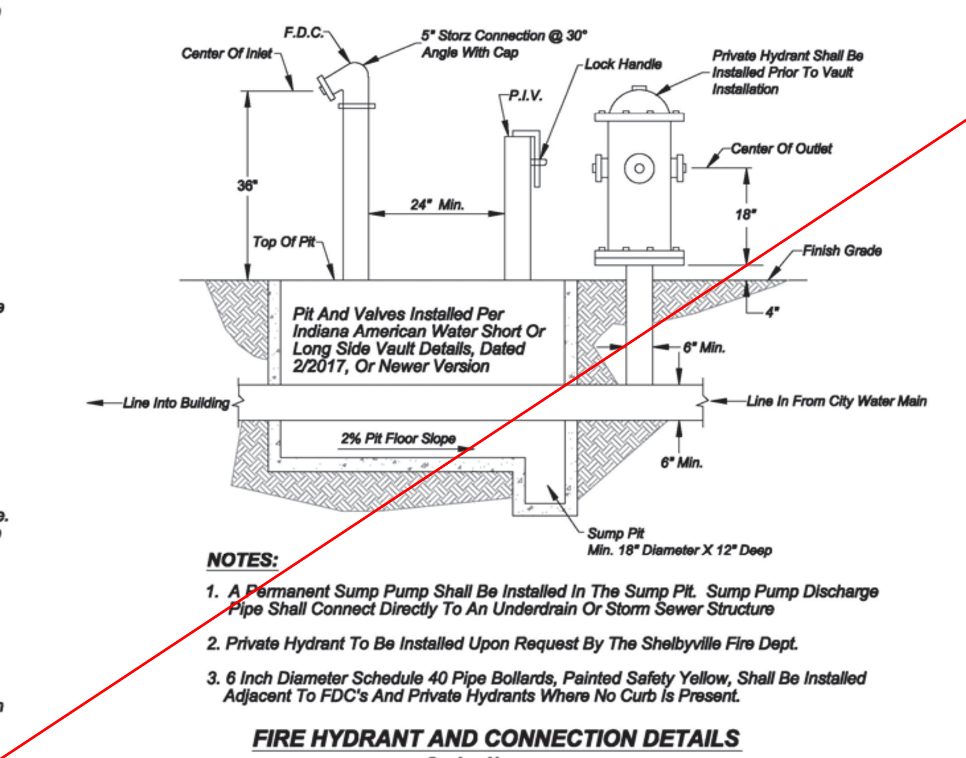
LENGTH (ft)	WIDTH (ft)	TURNAROUNDS REQUIRED
0-150	24-40	None
151-500	24-40	Cul-de-Sac, Hammerhead, Or "Y"
501-600	24-40	Cul-de-Sac, Hammerhead, Or "Y"



DEAD-END ROAD TURNAROUND DETAILS
Scale: None



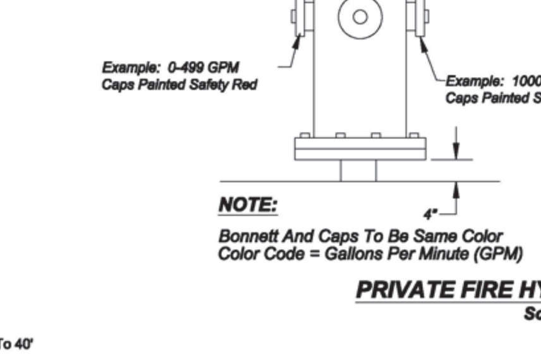
FIRE HYDRANT LOCATION WITHIN R/W
Scale: None



NOTES:

1. A Permanent Sump Pump Shall Be Installed In The Sump Pit. Sump Pump Discharge Pipe Shall Connect Directly To An Underdrain Or Storm Sewer Structure
2. Private Hydrant To Be Installed Upon Request By The Shelbyville Fire Dept.
3. 6 Inch Diameter Schedule 40 Pipe Bollards, Painted Safety Yellow, Shall Be Installed Adjacent To FDC's And Private Hydrants Where No Curb Is Present.

FIRE HYDRANT AND CONNECTION DETAILS
Scale: None



NOTE:
Bonnett And Caps To Be Same Color
Color Code = Gallons Per Minute (GPM)

TABLE 21: PRIVATE HYDRANT COLOR CODING

CLASS	GPM	COLOR
AA	1500 Or Greater	Safety Blue
A	1000 To 1499	Safety Green
B	500 To 999	Safety Orange
C	Less Than 499	Safety Red

PRIVATE FIRE HYDRANT COLOR CODE DETAIL
Scale: None

FIRE HYDRANT NOTES

1.) Fire Hydrants Shall Not Be Located More Than 500 Feet Apart. Shelbyville Fire Department Reserves The Right To Require Less Hydrant Spacing For Large Buildings. All Hydrants Shall Be Located A Minimum 1 ½ Times Outside The Collapse Zone Of The Building. All Fire Hydrants Within City Right-Of-Way Shall Be Located Between The Curb And Sidewalk As Shown Herein. The 5 ½ Inch Connection Shall Face The Street.

2.) Fire Hydrant Outlets Shall Be Located No Further Than 8 Feet From The Edge Of Pavement.

3.) All Fire Hydrants Shall Be Installed, Functional, And Approved By The Fire Inspector Prior To Start Of Building Construction.

4.) Fire Hydrants Shall Have A Maintained 3 Foot Radial Clear Space At All Times.

5.) The Size Of The Main Valve Opening And The Size Of The Hydrant Barrel Shall Be Suitable For Required Fire Protection.

6.) Dry Hydrants Shall Be Reviewed And Approved By The Fire Department. Dry Hydrants Shall Be Placed Within 8 Feet Of Roadway. Connection Shall Be 4 ½ Inch Male, National Standard Thread. Center Of Connection Shall Be 32 Inches Above Finished Grade With A Cap And Chain. Dry Hydrant Shall Comply With NFPA Standard 1142, Ch.8.

7.) Private Water Hydrants Shall Be Painted Safety Red In Color, Flow Tested, And Painted To Meet NFPA Standards As Shown Herein. See NFPA Standards 24 and 291, And Table 21, This Sheet.

FIRE DEPARTMENT CONNECTION (FDC) NOTES

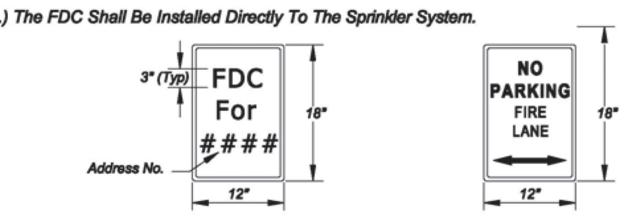
1.) The FDC Shall Not Be Located More Than 50 Feet From The Nearest Fire Hydrant. The FDC Shall Be Located A Minimum 1 ½ Times Outside The Collapse Zone Of The Building.

2.) The FDC Shall Meet Or Exceed The Requirements Of The Most Recent State Of Indiana Adopted Edition Of NFPA 13 and NFPA 14.

3.) The FDC Shall Be Provided With A Single 5 Inch Storz Connection That Shall Face Towards The Nearest Point Of Fire Department Access.

4.) A Minimum 4 Inch FDC Service Pipe Shall Be Utilized On A Fire Service Line That Is 6 Inches Or Larger.

5.) The FDC Shall Be Installed Directly To The Sprinkler System.



NOTES:

1. FDC and Fire Lane Signs Shall Be Constructed Out Of A Material That Is Not Susceptible To Degradation. The Sign Material Shall Be Approved By The Shelbyville Fire Department.
2. The Sign Lettering Shall Be Red In Color With A White Reflective Background.
3. Signs Shall Be Supported By An Approved Permanent Post. FDC Signs May Be Attached To The FDC By An Approved Method.
4. If Freestanding, The Top Of The Sign Shall Be Mounted Between 36 Inches And 48 Inches From Finished Grade.

FDC AND FIRE LANE SIGN DETAILS
Scale: None

FIRE LANE PARKING DETAIL
Scale: None

1.) The "No Parking Fire Lane" Message Shall Be Six (6) Feet In Depth From Edge Of Pavement Or Curb.

2.) The Letters Shall Be Two (2) Feet In Height And A Minimum Of Four (4) Inches Wide.

3.) A "No Parking Fire Lane" Sign Shall Be Placed Every Thirty (45) Feet And Comply With Standard Sign Detail On This Sheet. Fire Apparatus Access Roads Up To 26 Feet Wide Shall Be Posted With Signs On Both Sides As A Fire Lane. Fire Apparatus Access Roads Greater Than 26 Feet Wide Shall Be Posted With Signs On One Side As A Fire Lane.

4.) The Striping Shall Be A Minimum Of Four (4) Inches Wide At A Forty-Five (45) Degree Angle And Five (5) Feet On Center.

5.) All Pavement Markings Shall Be Painted Traffic Yellow. Curb Adjacent To Fire Lanes Shall Be Painted Safety Yellow Along The Entire Length Of The Fire Lane. Curb Adjacent To Hydrants Or FDC's Shall Be Painted Safety Red.

6.) Pavement Adjacent To Fire Protection Equipment, Including FDC, Fire Protection Control Valve, And Fire Hydrants Shall Be Marked In Accordance With This Detail. A "No Parking Fire Lane" Sign Shall Be Placed Every 30 Feet In These Zones And Comply With The Standard Sign Details On This Sheet.

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Revised Storz Details	01/10/2014
3	Updated Entire Set	02/11/2020

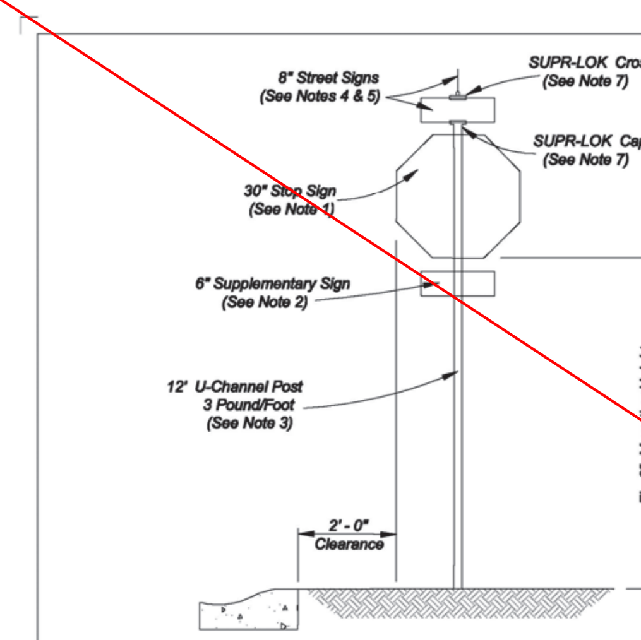
MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

SHELBYVILLE PRIDE IN PROGRESS

CITY OF SHELBYVILLE

FIRE DEPT. AND WATER STANDARD DETAILS

SHEET 15 OF 18



TYPICAL REGULATORY / WARNING AND STREET SIGN REQUIREMENTS:

1.) Stop Sign Shall Be High Intensity And In Accordance With Most Recent Indiana Manual On Uniform Traffic Control Devices. Unless Otherwise Detailed On This Sheet, Other Regulatory Signs Shall Be Of The Design, Size, And Construction As Specified In Said Manual. All Signs Shall Be Tagged On The Rear Of The Sign With An Adhesive Label With The Month And Year That The Signs Were Installed.

2.) An All Way Stop Intersection Requires An "ALL WAY" Supplementary Sign 18" Wide By 6" Tall In Accordance With Said Manual. A Two Way Stop Controlled Intersection Requires A "CROSS TRAFFIC DOES NOT STOP" Supplementary Sign Of The Same Size And In Accordance With Said Manual.

3.) All Regulatory/Warning Signs, Other Than Stop Signs, With Panels Less Than Or Equal To 48" x 30" In Size Shall Be Mounted On 12' U-Channel Posts (3 pounds/foot). All U-Channel Posts Shall Be Painted Green. Regardless If Material For Posts Is Other Than As Shown Herein, Mounting Height Shall Be 7' - 0".

4.) Streets Shall Be Signed At Non-Signalized Intersections With Two Such Street Sign Assemblies. Separate 12' U-Channel Post (3 pounds/foot) For Street Signs Permitted Only At Signalized Intersections.

5.) Street Signs Shall Be 8" Tall Extruded Aluminum (6063-T6) Reflective Green Background With 6" Tall Reflective White Letters. Street Signs Shall Have Rounded Corners.

6.) Refer To INDOT Standard Drawings E 802-SNGS-09 And E802-SNGS-10 For Post Standards And For The Mounting Of Sign Panels Larger Than 48" x 30".

7.) SUPR-LOK Cross Shall Be Model #990X. SUPR-LOK Cap Shall Be Model #91UX-NU180.

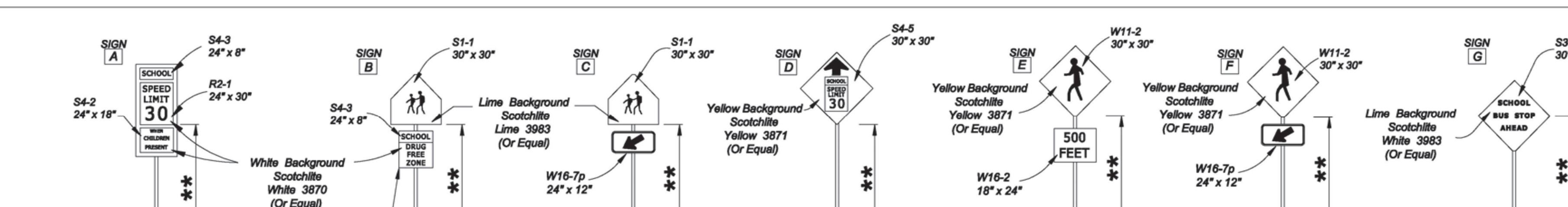
8.) Signs With Panel Widths Greater Than 36" Shall Be Reinforced On The Back Side Of The Panel By An Approved Method.

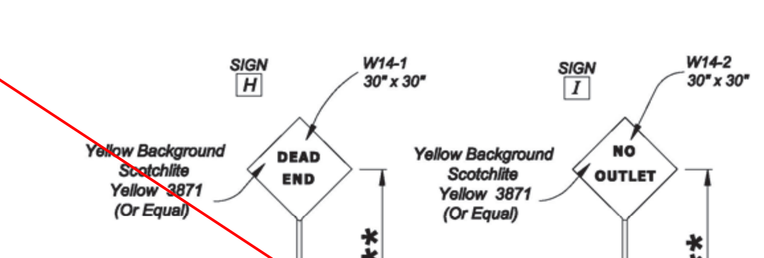
9.) Alternate Custom Posts May Be Used Upon Receiving Expressed Written Permission From The City Of Shelbyville. Custom Posts Shall Be The Financial Responsibility Of Subdivision's Homeowner's Association. In The Event That The City Of Shelbyville Must Replace Custom Sign Posts, The City Reserves The Right To Install Its Standard Steel Post.

10.) All Required Traffic Control (Signs And Markings) Shall Be In Place Prior To The Release Of The First Occupancy Permit.

11.) All Signs Shall Be Compliant With Latest Set Of MUTCD Standards.

12.) The City Of Shelbyville Will Order All Regulatory Signs, Warning Signs, And Street Signs For The Contractor. The Contractor Shall Pay For The Signs.

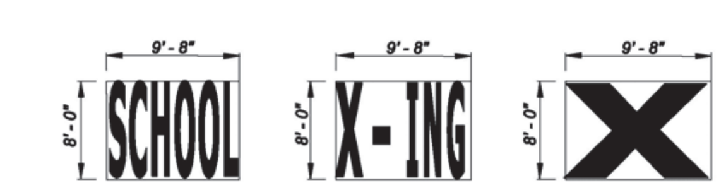




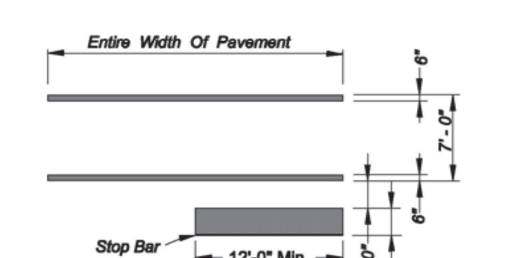
NOTE:
** 7' - 0" Mounting Height From Bottom Of Sign To Roadway Edge Of Pavement. (Typical)

All Black Lettering Is To Be Scotchlite 7720 (Or Equal)

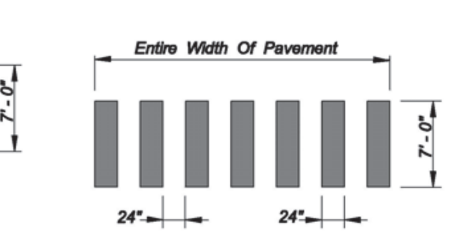
REGULATORY / WARNING SIGN DETAILS
Scale: None



PAVEMENT MARKING DETAIL
Scale: None



INTERSECTION CROSSWALK DETAIL
Scale: None



SPECIAL CROSSWALK DETAIL
Scale: None

GENERAL NOTES:

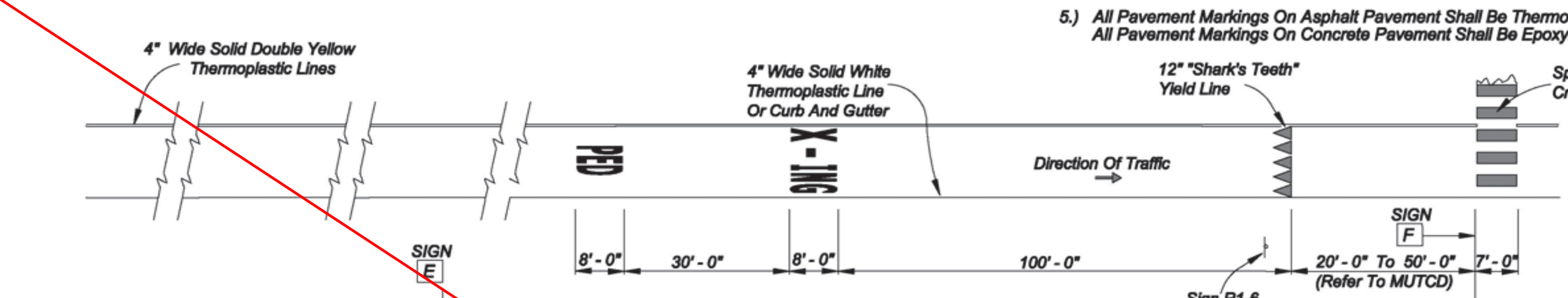
1.) All Regulatory Signs Shall Be High Intensity And In Accordance With The Indiana Manual On Uniform Traffic Control Devices, Most Recent Edition.

2.) Signs S3-1-A, W14-1 & W14-2 To Be Installed When Required By The City Of Shelbyville.

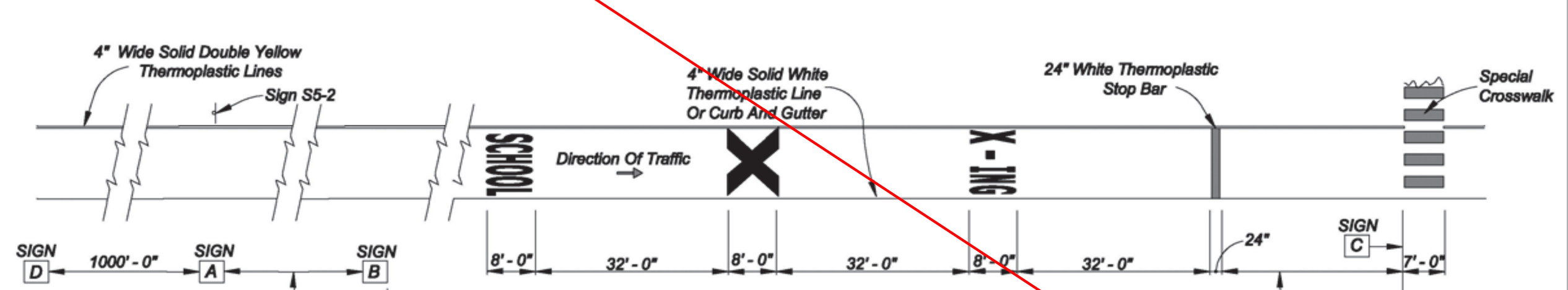
3.) All Pavement Markings Shown In These Details, Except For Double Yellow Lines And Edge Lines, Shall Span Across Approach Lanes.

4.) Where Pedestrian Cross Traffic Is Not Established, School Crossing Pavement Markings And Sign C May Be Omitted At The Discretion Of The City Of Shelbyville.

5.) All Pavement Markings On Asphalt Pavement Shall Be Thermo Plastic. All Pavement Markings On Concrete Pavement Shall Be Epoxy.



PEDESTRIAN CROSSING APPROACH DETAIL - SINGLE LANE
Scale: None



SCHOOL ZONE APPROACH DETAIL - SINGLE LANE
Scale: None

REVISIONS		
Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Removed Monument Detail	01/10/2014
3	Entire Set	02/11/2020

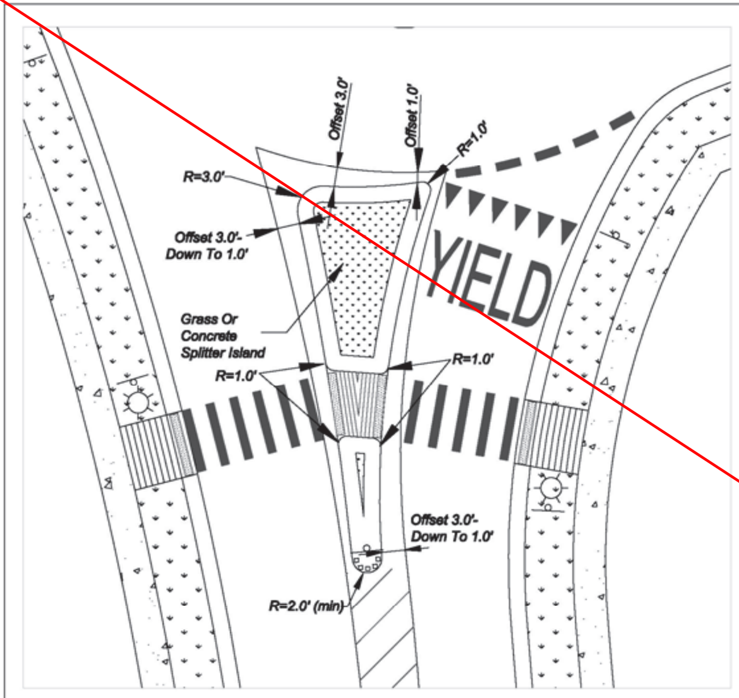
MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

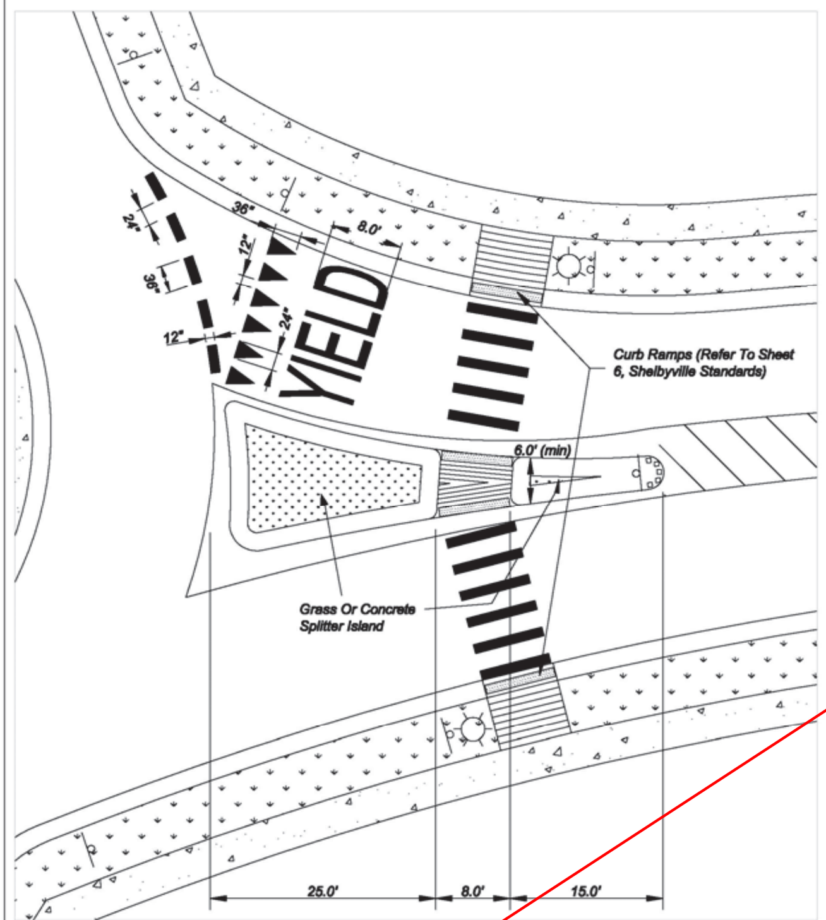
SHELBYVILLE PRIDE IN PROGRESS

CITY OF SHELBYVILLE

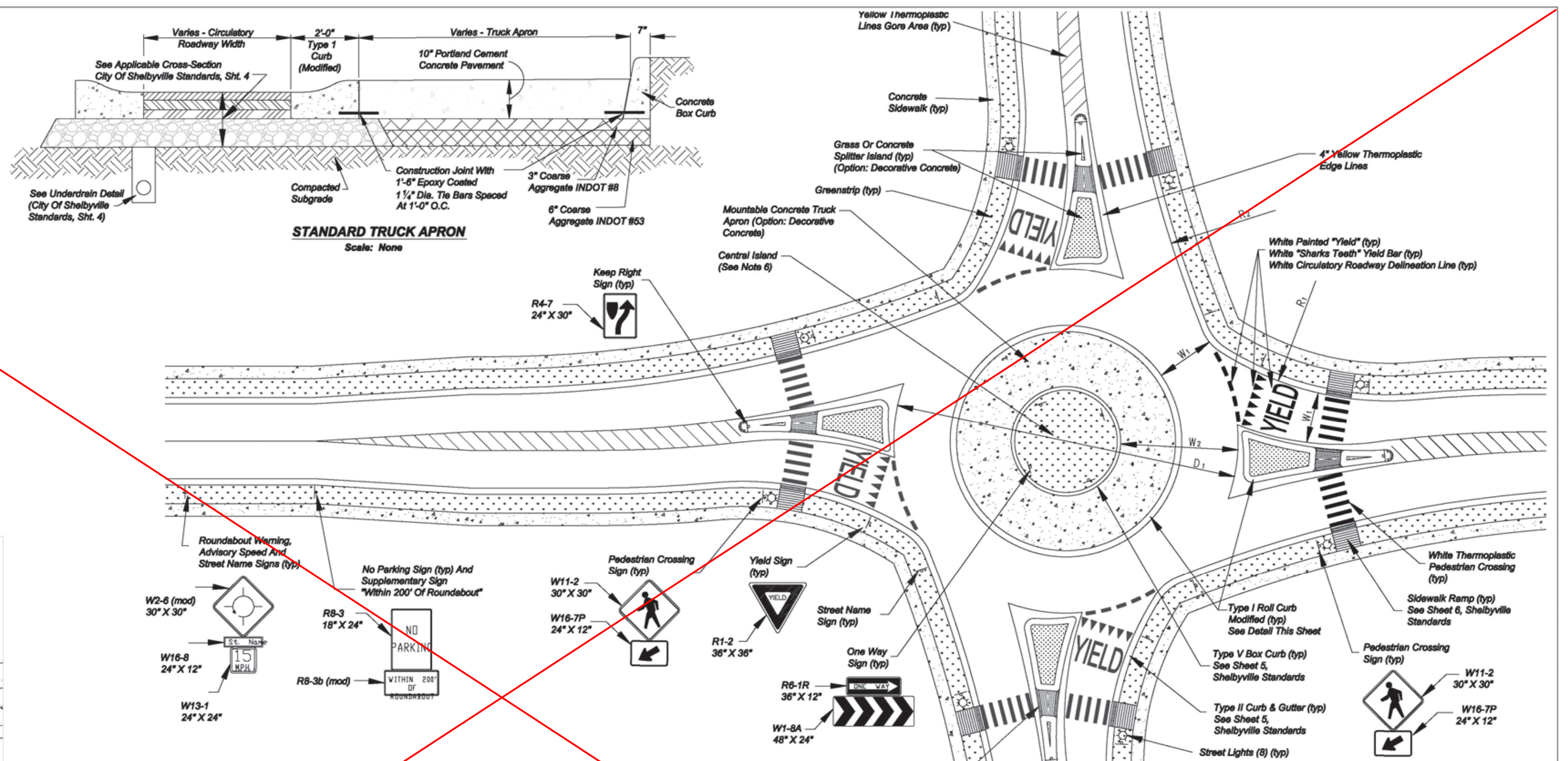
SIGNS AND MARKINGS DETAILS

SHEET 16 OF 18





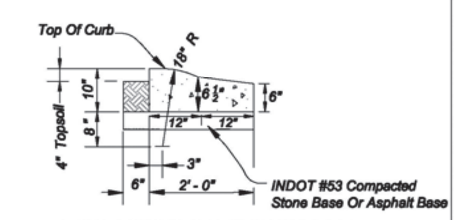
SPLITTER ISLAND AND APPROACH DETAILS
Scale: None



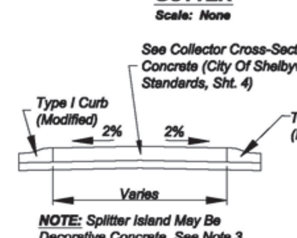
ARTERIAL/COLLECTOR ROUNDABOUT NOTES

1. This Sheet Applies To Single Lane Arterial/Collector Roundabouts.
2. Design Elements:
   - 2.1. D1: Inscribed Circle Diameter = 110' (minimum)
   - 2.2. R1: Entry Radius
   - 2.3. R2: Exit Radius
   - 2.4. W1: Entry Width And Circular Traveled Way = Wheelpath Of S-BUS 36 = 16.5' min, 20' max.
   - 2.5. W2: Traveled Way Plus Truck Apron = Wheelpath Of WB-67
3. Design Vehicle Shall Be S-BUS 36 And WB-67 Truck, W1 And W2 Respectively Unless Otherwise Approved By The Department Of Engineering. Turning Templates Shall Be Depicted On The Drawing To Verify Satisfaction Of Design Vehicle Criterion. A Mountable Concrete Truck Apron Shall Be Provided, If Necessary. Truck Apron And Concrete Splitter Islands Shall Be Doweled Into Adjacent Curb. Decorative Concrete May Be Used For Truck Apron And Concrete Splitter Islands. Color And Patterns Shall Be Subject To Engineering And Plan Commission Approval. See This Sheet For Detail.
4. The Width Of Roundabout Traveling Lane, W1, Shall Be Dependent On Width Required For Passage By A S-BUS 36, At The Given Radius Without Use Of Truck Apron. This Width Shall Be A Minimum Of 16.5'. Entry Width Shall Be The Same As The Width Of Circular Traveling Lane.
5. Cross Walk Shall Be Located 25' From The Inscribed Circle. A 6' Wide Refuge Area, Measured At Its Midpoint, Shall Be Provided For Pedestrians In The Splitter Island. No Pedestrian Crossings Shall Be Allowed Into The Roundabout Central Island.
6. Any Landscaping Or Objects Located In The Middle Of The Central Island Shall Be Less Than 24" In Height, Provide Appropriate Sight Distance For Given Approaching Roadway Design Speed, And Be Approved By The Department Of Engineering.
7. All Signage And Pavement Markings Shown Shall Be Used As Minimums. Multi-Lane Roundabouts Shall Use "Fish-Hook" Markings At Entries, To Delineate Lane Usage As Well As Advance Signage For Driver Instruction. All Signage And Pavement Markings Shall Be In Accordance With The Most Recent Version Of The Indiana MUTCD And Are Subject To Approval By The Department Of Engineering.
8. Use Of "Radial Design" For Roundabout Is Discouraged. Off-Set Right Design Is Not Acceptable.
9. No Drainage Structures Shall Be Located Within Circumference Of Inscribed Circle Of Single-Lane Roundabouts.
10. All Pavement Markings Shall Be Thermoplastic.
11. Snowplowable Raised Pavement Markers (RPM) Shall Be Placed At Each Gore Area Entering The Roundabout, Prior To Pedestrian Crossings In A V-Shaped Pattern. One RPM Shall Be Placed At The Point Of The Gore Area, With Two More Placed On Either Side Of The Perimeter Of The Gore Area At Equal Distances Up To The Crossing Location, For A Total Of Five (5) RPM's.
12. All Signs Shall Be High Intensity, High Reflectivity And In Accordance With The Most Recent INDIANA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. See This Sheet For Sign Codes And Sizes.
13. For Cross-Sections For Which Curb Is Poured On Asphalt, Asphalt Is To Be Paved Through Entire Splitter Island.
14. All Other Appropriate City Of Shelbyville Standards Apply.
15. Street Lighting Is Required On The Approach Side Of All Pedestrian Crossings At The Roundabout Intersection.
16. All Roundabout Designs Must Be Approved By The Departments Of Engineering And Plan Commission.

ARTERIAL/COLLECTOR ROUNDABOUT DETAIL
Scale: None



TYPE I MODIFIED 2' CONCRETE ROLL CURB & REVERSE GUTTER
Scale: None



NOTE: Splitter Island May Be Decorative Concrete. See Note 3.

TYPICAL SPLITTER ISLAND CROSS-SECTION DETAIL
Scale: None

NOTICE:
CERTIFICATION IS LIMITED TO THOSE STANDARDS AND GUIDELINES PER THIS SHEET. CONSTRUCTION IS SUBJECT TO CONSTRUCTION DRAWINGS, SHOP DRAWINGS, AND DESIGN ENGINEER'S CERTIFICATION SHEET .

REVISIONS

Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Reformatted Sheet	01/10/2014
3	Updated Entire Set	02/11/2020

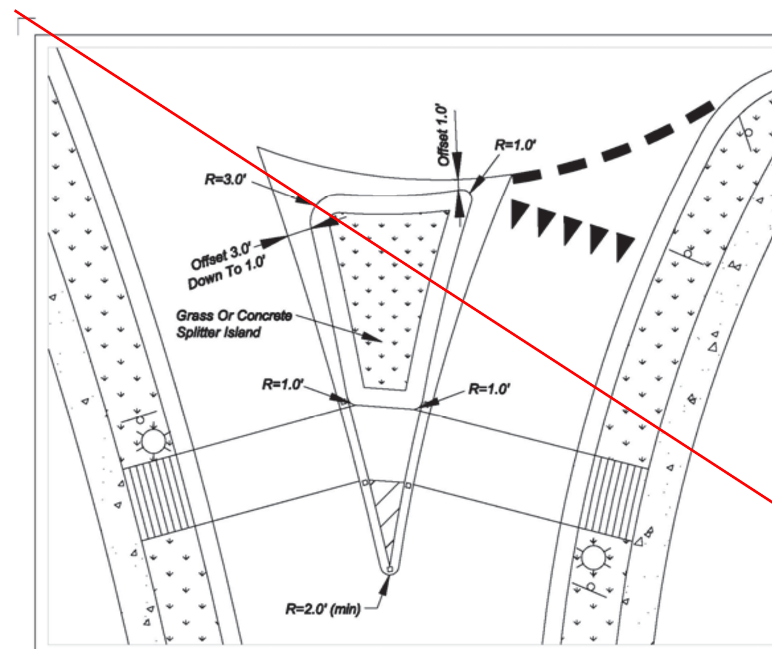
MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

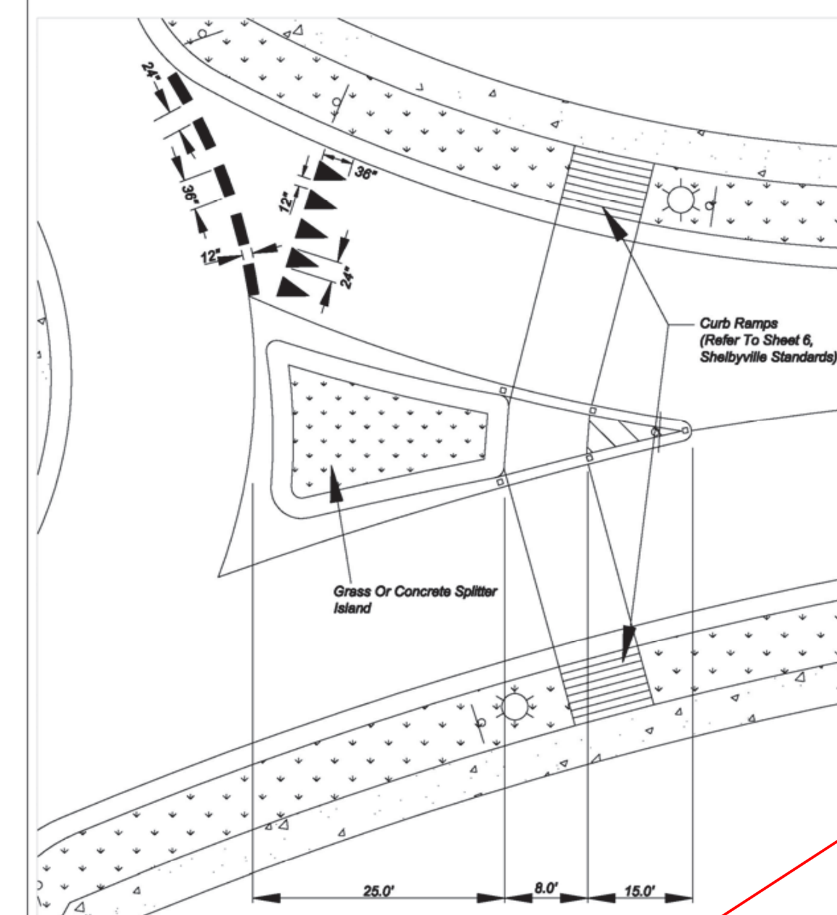
SHELBYVILLE PRIDE IN PROGRESS

CITY OF SHELBYVILLE

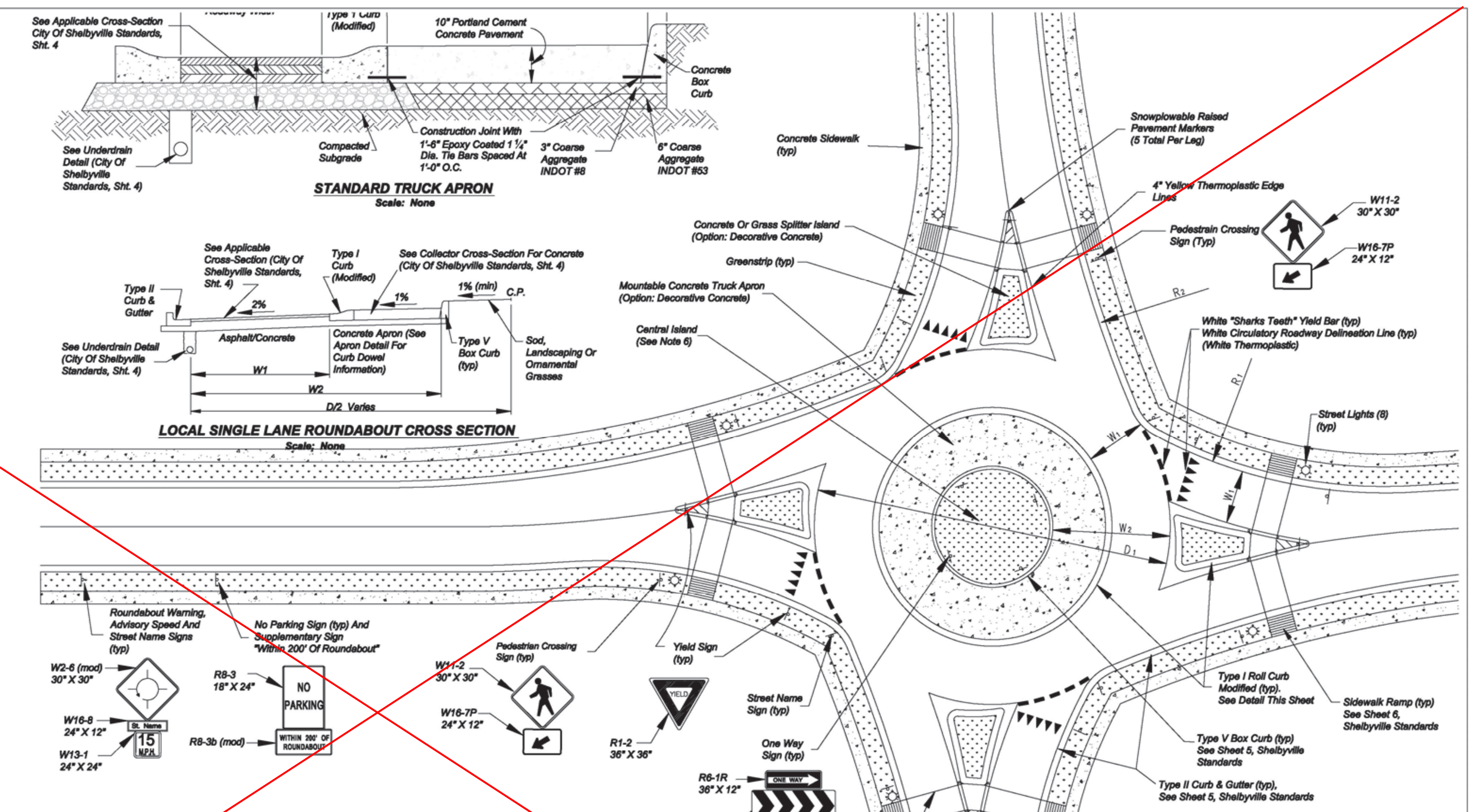
ARTERIAL/COLLECTOR ROUNDABOUT STANDARDS & DETAILS

SHEET 17 OF 18





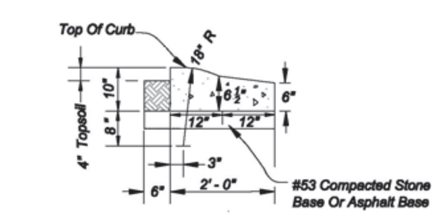
SPLITTER ISLAND AND APPROACH DETAILS
Scale: None



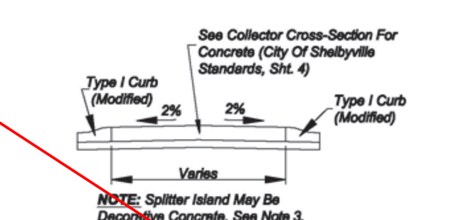
LOCAL ROUNDABOUT NOTES:

1. This Sheet Applies To Single Lane Arterial/Collector Roundabouts.
2. Design Elements:
   - 2.1. D1: Inscribed Circle Diameter = 95' (minimum)
   - 2.2. R1: Entry Radius
   - 2.3. R2: Exit Radius
   - 2.4. W1: Entry Width And Circular Traveled Way = Wheelpath Of S-BUS 36 = 16.5' min, 20' max
   - 2.5. W2: Traveled Way Plus Truck Apron = Wheelpath Of WB-50
3. Design Vehicle Shall Be S-BUS 36 And WB-50 Truck, W1 And W2 Respectively Unless Otherwise Approved By The Department Of Engineering. Turning Templates Shall Be Depicted On The Drawing To Verify Satisfaction Of Design Vehicle Criterion. A Mountable Concrete Truck Apron Shall Be Provided, If Necessary. Truck Apron And Concrete Splitter Islands Shall Be Doweled Into Adjacent Curb. Decorative Concrete May Be Used For Truck Apron And Concrete Splitter Islands. Color And Patterns Shall Be Subject To Engineering And Plan Commission Approval. See This Sheet For Detail.
4. The Width Of Roundabout Traveling Lane, W1, Shall Be Dependent On Width Required For Passage By A S-BUS 36, At The Given Radius Without Use Of Truck Apron. This Width Shall Be A Minimum Of 16.5'. Entry Width Shall Be The Same As The Width Of Circular Traveling Lane.
5. Cross Walk Shall Be Located 25' From The Inscribed Circle. A 6' Wide Refuge Area, Measured At Its Midpoint, Shall Be Provided For Pedestrians In The Splitter Island. No Pedestrian Crossings Shall Be Allowed Into The Roundabout Central Island.
6. Any Landscaping Or Objects Located In The Middle Of The Central Island Shall Be Less Than 24" In Height, Provide Appropriate Sight Distance For Given Approaching Roadway Design Speed, And Be Approved By The Department Of Engineering.
7. All Signage And Pavement Markings Shown Shall Be Used As Minimum Control. All Signage And Pavement Markings Shall Be In Accordance With The Most Recent Version Of The Indiana MUTCD And Are Subject To Approval By The Department Of Engineering.
8. Use Of "Radial Design" For Roundabout Is Discouraged. Off-Set Right Design Is Not Acceptable.
9. No Drainage Structures Shall Be Located Within Circumference Of Inscribed Circle Of Single-Lane Roundabouts.
10. All Pavement Markings Shall Be Thermoplastic.
11. Snowplowable Raised Pavement Markers (RPM) Shall Be Placed At Each Gore Area Entering The Roundabout, Prior To Pedestrian Crossings In A V-Shaped Pattern. One RPM Shall Be Placed At The Point Of The Gore Area, With Two More Placed On Either Side Of The Perimeter Of The Gore Area At Equal Distances Up To The Crossing Location, For A Total Of Five (5) RPM's.
12. All Signs Shall Be High Intensity, High Reflectivity And In Accordance With The Most Recent INDIANA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. See This Sheet For Sign Codes And Sizes.
13. All Other Appropriate City Of Shelbyville Standards Apply.
14. Street Lighting Is Required On The Approach Side Of All Pedestrian Crossings At The Roundabout Intersection.
15. All Roundabout Designs Must Be Approved By The Departments Of Engineering And Plan Commission.

LOCAL ROUNDABOUT DETAIL
Scale: None



TYPE I MODIFIED 2' CONCRETE ROLL CURB & REVERSE GUTTER
Scale: None



NOTE: Splitter Island May Be Decorative Concrete. See Note 3.

TYPICAL SPLITTER ISLAND CROSS-SECTION DETAIL
Scale: None

NOTICE:
CERTIFICATION IS LIMITED TO THOSE STANDARDS AND GUIDELINES PER THIS SHEET. CONSTRUCTION IS SUBJECT TO CONSTRUCTION DRAWINGS, SHOP DRAWINGS, AND DESIGN ENGINEER'S CERTIFICATION SHEET .

REVISIONS

Rev. No.	Description	Date
1	Entire Set	07/26/2011
2	Reformatted Sheet	01/10/2014
3	Updated Entire Set	02/11/2020

MATTHEW J. HOUSE REGISTERED No. PE11100675 STATE OF INDIANA PROFESSIONAL ENGINEER

SHELBYVILLE PRIDE IN PROGRESS

CITY OF SHELBYVILLE

LOCAL ROUNDABOUT STANDARDS & DETAILS

SHEET 18 OF 18