

CONTRACT DOCUMENTS AND SPECIFICATIONS

FOR

South Bend One-Way to Two-Way Street Conversion

Project No. 116-001

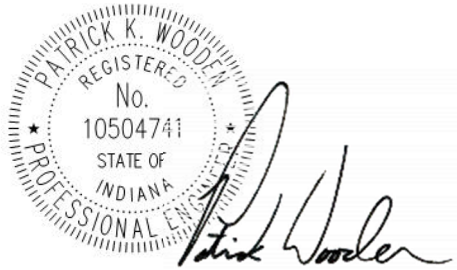
January 8, 2016

Prepared for

CITY OF SOUTH BEND, INDIANA
BOARD OF PUBLIC WORKS

By

American Structurepoint, Inc.



Registered Professional Engineer
State of Indiana No. **10504741**

FOR BIDS DUE: February 9, 2016

**City of South Bend, Indiana
Department of Public Works**

**South Bend One-Way to Two Way Street Conversion
Project No. 116-001**

Notice to Bidders	1 Page
General Conditions	5 Pages
Special Provisions	136 Pages
City of South Bend Contractor's Bid for Public Work Form	30 Pages
Appendices	
Appendix A	Railroad Agreement
Appendix B	Loop Tagging Table
Appendix C	Truss Type Mast Arms
Appendix D	Permits
Appendix E	Street Closure Form
Appendix F	Geotechnical Report

NOTICE TO BIDDERS

Notice is hereby given that the City of South Bend, Indiana, Board of Public Works will receive sealed bids at the Office of the Board of Public Works, County-City Building Room 1316, 227 West Jefferson Blvd, South Bend, Indiana, 46601 until the hour of 9:30 a.m., Local Time, on February 9, 2016 for the following:

South Bend One-Way to Two-Way Street Conversion **Project No. 116-001**

Work includes construction of a roundabout at the intersection of Michigan Street and Chippewa Avenue, all more particularly described in plans and specifications prepared by Lawson-Fisher Associates, P.C., phone 574-234-3167. Work also includes construction of a one-way to two-way street conversion within the downtown South Bend area along Main Street and Michigan Street / St. Joseph Street, including intersection, traffic signal, streetscape, and roadway improvements, all more particularly described in plans and specifications prepared by American Structurepoint, Inc., phone 317-547-5580. Work also includes construction of a roundabout at the intersection of Michigan Street and Marion Street, all more particularly described in plans and specifications prepared by Lawson-Fisher Associates, P.C., phone 574-234-3167. Work also includes construction of a roundabout at the intersection of Michigan Street and Bartlett Street, all more particularly described in plans and specifications prepared by Jones Petrie Rafinski Corp., phone 574-232-4388.

The Contract Documents are on file and available for public inspection commencing on the first advertise date during regular working hours at the Department of Public Works (1316 County-City Building, South Bend, Indiana), and at MACIAF 3215-A Sugar Maple Court, South Bend, IN 46628. Additionally, the Contract Documents will be available that same day for inspection or purchase at American Reprographics Company ("ARC", located at 1303 Northside Blvd., South Bend, Indiana, 46615), <http://www.e-arc.com>, (574) 287-2944, toll free at (800) 783-7231. There will be a non-refundable charge for reproduction as set by ARC for every set of documents for all bidders.

Bids must be on the City of South Bend Contractor's Bid for Public Work Form, accompanied by a Certified Check or Bid Bond in the amount of not less than five percent (5%) of the base bid plus any alternates, in a sealed envelope noting the project name, number and your company's information on the front.

Each bidder or contractor (hereinafter the contractor) must comply with "City of South Bend EEO Contracting Provision Diversity Utilization" included in the specifications as to each construction trade it intends to use on this construction contract and all other construction work (both federal and non-federal) in the St. Joseph County area during the performance of this contract or subcontract. The contractor commits itself to the goals for minority manpower and all other requirements, terms and conditions of these bid conditions by submitting a properly sealed bid. Woman and Minority-Owned Business Enterprises (W/MBE) are encouraged to respond to this notification.

A Mandatory Pre-Bid Conference will be held on January 19, 2016 at 11:00 a.m. Local Time at the Office of the Board of Public Works, County-City Building, 13th Floor Conference Room, 227 West Jefferson Blvd, South Bend, Indiana, 46601. An authorized representative from the interested Bidder must attend in person. Any questions about bidding conditions must be addressed to the Owner in writing no later than February 1, 2016.

The Board reserves the right to reject any or all bids or to accept a full or partial award of the bid or bids which, in its judgment, will be to the best interests of the City of South Bend.

BOARD OF PUBLIC WORKS
Linda M. Martin, Clerk

Publish two (2) times:
January 8, 2016
January 15, 2016

CITY OF SOUTH BEND
STATEMENT OF POLICY

The Board of Public Works of the City of South Bend has adopted the following policy regarding the receipt of sealed bids:

All sealed bids submitted to the Board of Public Works must be received in the Board of Public Works Office, 1316 County-City Building, South Bend, Indiana, no later than the advertised time on the advertised date of the bid opening.

It shall be the responsibility of the bidder to see that his/her bid is received prior to the deadline stipulated in the bid advertisement.

Bids submitted by mail and received after the advertised time deadline will not be considered by the Board.

CITY OF SOUTH BEND
BOARD OF PUBLIC WORKS

Linda M. Martin, Clerk

NOTE: Incoming mail does not reach the Board of Public Works until after 9:30 a.m. Local Time. If you are sending your bid via Federal Express or another overnight source, please confirm that your package will arrive before the bid opening date and time.

CITY OF SOUTH BEND

EQUAL EMPLOYMENT OPPORTUNITY CONTRACTING PROVISIONS DIVERSITY UTILIZATION

It is the policy of the City of South Bend to provide equal employment and business opportunity for all persons, partnerships, companies, and corporations in accordance with the rules, regulations and guidelines of the applicable federal, state and local laws. This policy of equal employment and business opportunity shall apply to every contractor or subcontractor bidding or holding a public contract with the City of South Bend.

In furtherance of this policy, the following Equal Opportunity Clauses are hereby made a part of every construction contract entered into by the City of South Bend and all subcontractors entered into pursuant to any such contract and the bidder hereby certifies that it/he/she will abide by these provisions.

The contractor will not discriminate against any applicant or employee because of race, color, religion, sex, national origin, or handicap. The contractor will take affirmative action to ensure that all applicants or employees are treated fairly and equitably. Such action shall include but not be limited to the following: hiring, upgrading, demotion or transfer, recruitment, advertising, lay-offs or termination, rates of pay or other forms of compensation and selection for training including apprenticeship programs.

The contractor shall agree to post in conspicuous places available to employees and applicants, notices to be provided setting forth the provisions of the Non-Discrimination Clause.

The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

The contractor will send to each labor union or representative of workers with which he has a bargaining agreement or other contract or understanding, a notice to be provided, advising the labor union or worker's representatives of the contractor's commitment under this section, and shall post copies of the notices in conspicuous places available to applicants and employees.

The contractor will comply with all provisions of Executive Order 11246 (as amended by 11375) and of the rules, regulations and relevant orders of the Department of Labor.

Subpart B -- Contractors' Agreements

Sec. 202. Except in contracts exempted in accordance with Section 204 of this Order, all Government contracting agencies shall include in every Government contract hereinafter entered into the following provisions:

"During the performance of this contract, the contractor agrees as follows:"

"(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated equally during employment, without regard to their race, color, religion, sex or national origin. Such action will include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or

recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause."

"(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin."

"(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract of understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment."

"(4) The contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules and regulations, and relevant orders of the Secretary of Labor."

"(5) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders."

"(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, in this contract may be cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked* as provided in Executive Order No 11246 of September 24, 1965, or by rule, regulations, or order of the Secretary of Labor, or as otherwise provided by law."

"(7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States."

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

** Corrected to read "invoked". In the original text the word "involved" was printed in error.*

MINORITY AND WOMEN BUSINESS ENTERPRISE DIVERSITY DEVELOPMENT PROGRAM

The City of South Bend, Indiana has shown its commitment to addressing Minority Business (“MBE”) and Women’s Business Enterprise (“WBE”) participation in public contracting through the adoption of the City of South Bend Ordinance No. 10081-11. Persons, partnerships, corporations, associations, or joint ventures awarded a contract by the City of South Bend through its agencies, boards, or commissions shall not discriminate against any employee or applicant for employment in the performance of a City contract with respect to hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment because of race, sex, religion, color, national origin, ancestry, age or disability that does not affect that person’s ability to perform work.

The goal for MBE/WBE participation for the purchase of work, labor, services, supplies, equipment, materials, or any combination in this project is 7.1% of the total bid amount, whether it be base bid or base bid plus alternate(s). Minority and Women’s Businesses are described on the Indiana Department of Administration website: <http://www.in.gov/idoa/>. It is the bidder’s sole responsibility to verify whether any listed minority or woman business meets the qualifications of a Minority or Women’s owned business. Documentation shall be provided with the bid that states the MBE/WBE that will be contracted, the dollar amount of the work that will be performed on the project and the percentage of the dollar amount as it relates to the total bid amount by using Form MWBE-1.0, Proof of MBE/WBE Participation Goal Form.

In the event the bidder cannot meet the MBE/WBE participation goal set for this project, the award of the contract under public bidding laws or other contracts in which public bids are not required by law, the City, its agencies, boards, or commissions requires the Contractor’s good faith efforts to obtain participation by those Contractors classified as a Minority Business (“MBE”) or as a Women’s Business Enterprise (“WBE”).

Failure to either meet the MBE/WBE participation goal set forth in this project or provide ALL the required evidence of good faith efforts with the bid will be grounds for rejecting a bid as non-responsive.

The requirements that bidders shall supply as good faith efforts to have active participation from MBEs and/or WBEs on this Project is written documentation evidencing the efforts by using Form MWBE-2.0, Evidence of Good Faith Efforts and Form MWBE-2.1, MBE/WBE Contacted. Such documentation shall include but is not limited to the following items:

- a. A listing of all MBE/WBEs contacted including: (1) the name and address of the MBE/WBE; (2) the date of contact; (3) the type of contact (i.e. phone call, written solicitation, etc.); (4) the nature or type services or goods requested; and (5) the result of the contact.
- b. Written evidence of outreach and copies of email exchanges inviting and receiving quotes or other responses from MBE/WBE businesses or other documentations of efforts to encourage and secure competitive quotes from MBE/WBE and local businesses to be included in the benefits of building this Project.
- c. Written documentation of letters of introduction, invitations to forging majority/minority strategic alliances for capacity building including but not limited to mentoring, extensions of assistance on payroll, insurance, bonding, line of credit, technical skills or business skills.

All bidders are actively encouraged to reach out to the MBE/WBE businesses in St. Joseph County, Indiana and other local Indiana counties to utilize a good faith effort to forge constructive and lasting business partnerships.

Notwithstanding the foregoing, the award and performance of all City contracts shall comply with applicable federal, state, and local laws.

DEPARTMENT OF PUBLIC WORKS
CITY OF SOUTH BEND, INDIANA

SPECIAL PROVISIONS

**South Bend One-Way to Two-Way Street Conversion
Project No. 116-001**

INDEX OF PROVISIONS

I.	PROJECT DESCRIPTION	1
II.	PREVAILING SPECIFICATIONS AND DESIGN & CONSTRUCTION STANDARDS	1
III.	DEFINITION OF TERMS	2
IV.	BIDDING REQUIREMENTS	2
V.	TAX EXEMPT	3
VI.	INDEMNIFICATION	3
VII.	INSURANCE	3
VIII.	AWARD OF CONTRACT	4
IX.	BONDING REQUIREMENTS	4
X.	RAILROAD COORDINATION	4
XI.	CONTROL OF WORK	5
XII.	LEGAL RELATIONS	5
XIII.	SUBMITTALS	6
XIV.	PROSECUTION AND PROGRESS	6
XV.	CHANGE OF CONTRACT TIME	7
XVI.	DEFAULT AND TERMINATION	8
XVII.	LIQUIDATED DAMAGES	8
XVIII.	RETAINAGE AND FINAL PAYMENT	9
XIX.	WARRANTY	10
XX.	OTHER UTILITIES	10
XXI.	OTHER UTILITIES – SPECIFIC TO DIVISION A (114-045)	11
XXII.	OTHER UTILITIES – SPECIFIC TO DIVISION B (115-019)	13
XXIII.	OTHER UTILITIES – SPECIFIC TO DIVISION B (114-035)	15
XXIV.	OTHER UTILITIES – SPECIFIC TO DIVISION B (114-032B)	17
XXV.	COORDINATION WITH WI-FI NETWORK	18
XXVI.	CONSTRUCTION ENGINEERING	18
XXVII.	PRE-CONSTRUCTION VIDEO OF SITE CONDITIONS	20
XXVIII.	CONTRACT ALLOWANCES	20
XXIX.	MAINTENANCE OF TRAFFIC	21
XXX.	SEQUENCE OF OPERATIONS – PROJECT 114-032B	23

XXXI.	DESCRIPTION OF WORK	24
XXXII.	PLANS	24
XXXIII.	MUNICIPAL OPERATIONS	25
XXXIV.	UNDISTRIBUTED ITEMS	25
XXXV.	INSPECTION HOLE	26
XXXVI.	GEOTECHNICAL REPORT	27
XXXVII.	REESTABLISH NATIONAL GEODETIC SURVEY (NGS) MONUMENT	27
XXXVIII.	SAMPLING AND TESTING	27
XXXIX.	COMMUNITY OUTREACH PLAN	29
XL.	PUBLIC SAFETY	30
XLI.	STREET CLEANING	30
XLII.	EROSION CONTROL PLAN AND PROOF OF PUBLICATION (SWPPP)	30
XLIII.	CRITICAL PATH SCHEDULE	31
XLIV.	CONTACT DESIGNEES	33
XLV.	PERMITS	33
XLVI.	MOBILIZATION AND DEMOBILIZATION	33
XLVII.	STATEMENTS ABOUT EXISTING CONDITIONS OF ADDITIONAL RIGHT-OF-WAY AND ENCROACHMENTS	34
XLVIII.	CLEARING RIGHT-OF-WAY	35
XLIX.	PAVEMENT REMOVAL	36
L.	POLE FOUNDATION REMOVAL	36
LI.	LIGHT POLE AND FOUNDATION REMOVAL	36
LII.	TREE REMOVAL	37
LIII.	REMOVAL AND ABANDONMENT OF STRUCTURES AND MUNICIPAL UTILITIES	37
LIV.	CONCRETE CURB REMOVAL	38
LV.	CONCRETE SIDEWALK REMOVAL	38
LVI.	REMOVE AND SALVAGE SIGN STRUCTURES	38
LVII.	TRAFFIC SIGNAL SYSTEM REMOVAL	39
LVIII.	REMOVE AND SALVAGE SIGNAL EQUIPMENT	39
LIX.	HOUSES AND BUILDINGS REMOVAL	40
LX.	EARTHWORK	40
LXI.	COMMON EXCAVATION	41
LXII.	TEMPORARY EROSION CONTROL MEASURES	42
LXIII.	TEMPORARY EROSION AND SEDIMENT CONTROL, DROP INLET PROTECTION	43
LXIV.	TEMPORARY EROSION AND SEDIMENT CONTROL, SILT FENCE	43
LXV.	STRUCTURE EXCAVATION	43
LXVI.	BORROW AND BACKFILL	44
LXVII.	COMPACTED AGGREGATE	44
LXVIII.	SURFACE MILLING, ASPHALT	45

LXIX.	PAVEMENT REMOVAL FOR HMA WIDENING	45
LXX.	QC/QC HOT MIX ASPHALT	45
LXXI.	HOT MIX ASPHALT PAVEMENT	46
LXXII.	TACK COAT	46
LXXIII.	QC/QA PLAIN CEMENT CONCRETE PAVEMENT	46
LXXIV.	PCCP, PLAIN	47
LXXV.	PCCP, COLORED	48
LXXVI.	CONCRETE SLEEPER SLAB	49
LXXVII.	MATERIAL TESTING	50
LXXVIII.	CONCRETE SIDEWALKS AND CURB RAMPS	50
LXXIX.	CONCRETE CURBS	51
LXXX.	CONCRETE HEADER	52
LXXXI.	MOW STRIP, CONCRETE	52
LXXXII.	DECORATIVE PERMEABLE BRICK PAVERS	52
LXXXIII.	DECORATIVE BRICK PAVERS (NON-PERMEABLE)	55
LXXXIV.	PCCP FOR APPROACHES	59
LXXXV.	PERMEABLE PAVEMENT	59
LXXXVI.	DECORATIVE FENCE	60
LXXXVII.	GABION RENO MATTRESS	63
LXXXVIII.	LIGHTED BOLLARD	63
LXXXIX.	TRASH RECEPTACLE	63
XC.	TREE GRATE	64
XCI.	DECORATIVE BENCH	64
XCII.	BICYCLE RACK	64
XCIII.	NURSERY SODDING AND TOPSOIL	65
XCIV.	PLANTS	65
XCV.	SHREDDED HARDWOOD MULCH	70
XCVI.	MOBILIZATION AND DEMOBILIZATION FOR SEEDING	71
XCVII.	MULCHED SEEDING, T	71
XCVIII.	LANDSCAPE EDGING	71
XCIX.	BACKFILL MIX FOR PLANTINGS	72
C.	STRUCTURAL WALL DETAILS, WASHINGTON STREET AT MAIN STREET	73
CI.	STORM SEWER PIPE	73
CII.	STRUCTURE CONNECTIONS	75
CIII.	PRECAST CONCRETE HEADWALL	75
CIV.	SANITARY SEWER LATERALS	75
CV.	CASTING, FURNISH, INSTALL AND ADJUST TO GRADE	76
CVI.	CASTING, REMOVE AND RESET	76
CVII.	STANDARD INLETS, MANHOLES, AND CATCH BASINS	76

CVIII.	ADJUST STRUCTURES TO GRADE	77
CIX.	DOGHOUSE MANHOLE	78
CX.	RECONSTRUCTED STRUCTURES	78
CXI.	GEOTEXTILE	78
CXII.	WATER MAIN, VERTICAL RELOCATION W/ DUCTILE IRON FITTINGS, DUCTILE IRON	79
CXIII.	LANDSCAPE IRRIGATION	83
CXIV.	IRRIGATION REPAIR	93
CXV.	IRRIGATION, TREE WATERING SYSTEM	94
CXVI.	WATER SERVICE LINE ADJUSTMENTS	95
CXVII.	SIGN POST, SQUARE, TYPE 2, REINFORCED ANCHOR BASE	96
CXVIII.	SIGN, SHEET, REMOVE AND RESET	96
CXIX.	ILLUMINATED WALL LETTERING	97
CXX.	MISCELLANEOUS EQUIPMENT FOR LIGHTING	97
CXXI.	PORTABLE CHANGEABLE MESSAGE BOARD SIGNS	98
CXXII.	CONSTRUCTION LIGHTING	98
CXXIII.	STREET NAME SIGNS	99
CXXIV.	PROJECT INFORMATION SIGN	99
CXXV.	TRAFFIC SIGNAL – DETECTION AND INTERCONNECTION	101
CXXVI.	FIBER OPTIC	102
CXXVII.	CROSSWALK SYSTEM – FLUSH BI-DIRECTIONAL FIXTURE	103
CXXVIII.	CROSSWALK SYSTEM – FLASHING PEDESTRIAN SIGN	104
CXXIX.	CROSSWALK SYSTEM CONTROLLER	105
CXXX.	CROSSWALK SYSTEM – PEDESTRIAN PUSH-BUTTON SYSTEM	107
CXXXI.	HANDHOLES	108
CXXXII.	WIRE	108
CXXXIII.	CONDUIT, PVC, SCHEDULE 80	108
CXXXIV.	SERVICE PEDESTAL	108
CXXXV.	ELECTRIC SERVICE POINT	109
CXXXVI.	POST MOUNTED RECEPTACLE IN GROUND	109
CXXXVII.	STREET LIGHTING	109
CXXXVIII.	LIGHT STANDARDS	111
CXXXIX.	LIGHT POLE FOUNDATION	113
CXL.	ORNAMENTAL LIGHTING	113
CXLI.	PAVEMENT MARKINGS FOR TRAFFIC MAINTENANCE	115
CXLII.	PAVEMENT MESSAGE MARKINGS FOR CYCLE TRACK	115
CXLIII.	THERMAL DETECTION CAMERA SYSTEM	116
CXLIV.	SERVICE PEDESTAL	117
CXLV.	SIGNAL FIBER OPTIC INTERCONNECT CABLE	117
CXLVI.	CLEAN AND PAINT EXISTING SIGNAL EQUIPMENT	117

CXLVII.	WIRELESS VEHICLE DETECTION SYSTEM	118
CXLVIII.	TRAFFIC SIGNAL EQUIPMENT SALVAGED BY THE DEPARTMENT	120
CXLIX.	ACCESSIBLE PEDESTRIAN SIGNALS	121
CL.	DETECTOR CARD RACK AND DETECTOR MODULES	122
CLI.	ELECTRICAL INSULATION SEALANT	122
CLII.	LOOP DETECTION	123
CLIII.	SIGNAL CANTILEVER STRUCTURE, HAND HOLE COVERS	123
CLIV.	SIGNAL CANTILEVER STRUCTURE, RELOCATE	123
CLV.	SIGNAL CANTILEVER STRUCTURE	123
CLVI.	CONDUIT, HDPE, 3 IN, SCHEDULE 80	124
CLVII.	TRAFFIC SIGNAL HEAD, 3 SECTION, 12" RED AMBER GREEN BIKE SIGNALS	124
CLVIII.	DECORATIVE SIGNAGE FOR CYCLE TRACK	124
CLIX.	INLET REMOVAL AND CATCH BASIN REMOVAL	128
CLX.	PERMANENT TUBULAR MARKERS	128
CLXI.	CURB IDENTIFICATION MARKERS	128
CLXII.	LOOP TESTING TABLE	130
CLXIII.	CABLESPAN SIGN STRUCTURE	130

DEPARTMENT OF PUBLIC WORKS
CITY OF SOUTH BEND, INDIANA

SPECIAL PROVISIONS

**South Bend One-Way to Two-Way Street Conversion
Project No. 116-001**

I. PROJECT DESCRIPTION

Work to be performed shall include furnishing all labor, services, materials, insurance and equipment to provide and install the one-way to two-way street conversion improvements along Main Street and Michigan Street/St Joseph Street, from Chippewa Avenue to Bartlett Street and adjacent areas as detailed in the Plan Drawings and Specifications. Plan Drawings and Bid Proposals are separated into Divisions as follows:

- A. Division A – Michigan Street and Main Street from Chippewa Avenue to Ewing Avenue
 - a. Part 1 of 2, Project 114-045 – Chippewa Street Improvements at the intersections of Michigan Street and Main Street.
 - b. Part 2 of 2, Project 115-019 (Div. A) – Main Street Improvements and Michigan Street Improvements from north of the intersection at Chippewa Avenue to north of the intersection at Ewing Avenue.
- B. Division B – Michigan Street / St. Joseph Street and Main Street from Ewing Avenue to Bartlett Street
 - a. Part 1 of 3, Project 115-019 (Div. B) – Main Street Improvements from north of the intersection at Ewing Avenue to the intersection at LaSalle Avenue, and Michigan Street / St. Joseph Street Improvements from north of the intersection at Ewing Avenue to north of the intersection at LaSalle Avenue.
 - b. Part 2 of 3, Project 114-035 – Main Street Improvements from the intersection at LaSalle Avenue to the intersection at Marion Street, and Michigan Street Improvements from north of the intersection at LaSalle Avenue to the intersection at Marion Street, and Marion Street Improvements at the intersection of Michigan Street.
 - c. Part 3 of 3, Project 114-032B – Bartlett Street Phase II Improvements from the intersection at Main Street to the St. Joseph River, including roundabout construction at the intersection of Michigan Street, and Improvements at the Memorial Hospital Garage Entrance.

II. PREVAILING SPECIFICATIONS AND DESIGN & CONSTRUCTION STANDARDS

The City of South Bend's **PREVAILING SPECIFICATIONS**, most recent version, and **DESIGN & CONSTRUCTION STANDARDS**, most recent version, are to be used on this project.

Each Bid provider is specifically instructed to become completely familiar with the most recent version of the **PREVAILING SPECIFICATIONS** and the **DESIGN & CONSTRUCTION STANDARDS** prior to submitting a Bid.

Wherever the **PREVAILING SPECIFICATIONS** refer to "2016 INDOT Standard Specifications," it shall be understood to include all supplemental specifications in force for lettings effective after September 1, 2015.

These **SPECIAL PROVISIONS** will list only "Additions" or "Deletions" to the **PREVAILING SPECIFICATIONS** and are to be used only in conjunction with the **PREVAILING SPECIFICATIONS**.

In the event of conflict between the **SPECIAL PROVISIONS** and the **PREVAILING SPECIFICATIONS**, the **SPECIAL PROVISIONS** will govern.

III. DEFINITION OF TERMS

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 101

B. Additions:

1. Where the term "or equal" is used in these specifications, the Bid provider deviating from specified item shall file with his/her Bid a letter fully explaining and justifying his/her proposed article or equal. The City of South Bend shall be the sole judge in determining if the "or equal" offered meets the specification.

IV. BIDDING REQUIREMENTS

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 102

B. Additions:

1. Each Bid provider shall completely execute and submit the following documents with the Bid:
 - a. City of South Bend Contractor's Bid for Public Work Form
 - b. Bid Bond stating 5% of the total Bid or Certified Check of 5% of the bid.
 - c. Contractor's Non-Collusion and Non-Debarment Affidavit, Certification Regarding Investment with Iran, Employment Eligibility Verification, Non-Discrimination Commitment and Certification of use of United States Steel Products or Foundry Products.
2. Questions from Bidders regarding the Contract Documents, Plans, and / or Bid Documents will not be accepted after February 1, 2016.
3. An electronic spreadsheet of the itemized proposal may be provided to attendees of the mandatory Pre-Bid Conference for use in completing the Bid Package documents. Any use of electronic files provided by the Owner are for the Bidder's convenience.
 - a. These electronic files are not construction documents. Differences may exist between these electronic files and corresponding hard-copy construction documents. Consultant makes no representation regarding the accuracy or completeness of the electronic files Recipient receives. In the event a conflict arises between the signed or sealed hard-copy construction documents prepared by the Engineer and the electronic files, the signed or sealed hard-copy construction documents shall govern. Recipient is responsible for determining if any conflict exists.

- b. Any use or reuse of electronic files by the Bidder or by others will be at Bidder's sole risk and without liability or legal exposure to the Owner and Engineer. Recipient of electronic files agrees to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against the Owner, Engineer, and its officers, directors, employees, agents, or sub-consultants that may arise out of or in connection with Recipient's use of the electronic files.
- c. Recipient shall, to the fullest extent permitted by law, indemnify and hold Consultant harmless against all damages, liabilities, or costs, including reasonable attorneys' fees and defense costs, arising out of or resulting from Recipient's use of these electronic files.

V. TAX EXEMPT

- A. Prevailing Specifications: None.
- B. Additions:
 - 1. Materials and properties purchased under contract with the Owner that becomes a permanent part of the structure or facilities constructed are not subject to the Indiana Gross Retail Tax (Sales Tax). The exemption number will be furnished to the Contractor upon award.

VI. INDEMNIFICATION

- A. Prevailing Specifications: None
- B. Additions:
 - 1. Contractor agrees to indemnify, defend and hold harmless the City of South Bend, its agents, officers and employees, from all costs, losses, claims and suits, including court costs, attorney fees, and other expenses, arising from or out of the negligent performance of this Contract by Contractor, or because of arising out of any defect in the goods, materials or equipment supplied by the Bid provider.

VII. INSURANCE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 103
- B. Additions:
 - 1. All Contractors and subcontractors doing business with the City of South Bend shall present a Certificate of Insurance showing coverage in the following minimum amount:
 - a. General Liability: Premises-Completed Operations or Products, Bodily Injury and Property Damage Combined Single Limit - \$5,000,000.
 - b. There shall be no exclusion for explosion, collapse or underground hazard.
 - c. Workmen's Compensation: Statutory State of Indiana Employer's Liability - \$100,000.
 - d. Auto Liability: Bodily Injury and Property Damage Combined Single limit - \$1,000,000
 - e. City of South Bend and Beacon Health System (Memorial Hospital) shall be named as additional insured on the Certificate of Insurance.

VIII. AWARD OF CONTRACT

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 103

B. Additions:

1. A Bidder may submit a Bid for either Division of the Project or for both Divisions. Award will be made to the lowest, responsive, responsible Bidder for each separate Division (A & B), as determined by the Owner.
2. All Bids will remain subject to acceptance for sixty (60) calendar days after the day of the Bid opening, but the City of South Bend may, in its sole discretion, release any Bid and return the Bid security prior to that date.
3. Successful bidder from award notice will have fourteen (14) calendar days to submit a fully executed contract, Certificated of Insurance, and other require documents from either the awarded contactor and/or the subcontractors. Failure to comply within the award period may be cause for the Board of Public Works to rescind the award.
4. The Owner may waive any informalities or minor defects, or may reject any and all bids.
5. A bid will be rejected if an authorized representative from the interested Bidder does not attend in person the mandatory Pre-Bid Conference.
 - a. **The Mandatory Pre-Bid Conference will be held on January 19, 2016 at 11:00 a.m. Local Time** at the Office of the Board of Public Works, County-City Building, 13th Floor Conference Room, 227 West Jefferson Blvd, South Bend, Indiana, 46601.

IX. BONDING REQUIREMENTS

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 103

1. Additions:

a. The successful Bid provider shall supply the following bonds:

- (i) Payment Bond within seven (7) days of Notification of Award for an amount equal to one hundred percent (100%) of the contract amount.
- (ii) Performance Bond within seven (7) days of Notification of Award for an amount equal to one hundred twenty-five percent (125%) of the contract amount.
- (iii) Maintenance bond within ten (10) days of acceptance of the project by the City of South Bend, for an amount equal to ten percent (10%) of the final contract price, guaranteeing for a period of three (3) years after the date of acceptance of the project by the City of South Bend.

X. RAILROAD COORDINATION

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 103.

B. Additions:

1. The Contractor shall carry, with respect to the operations performed and those performed by others, for and in behalf of the Norfolk Southern Railway Company, Railroad Protective

Liability insurance for the traffic signal and pavement work within the Norfolk Southern Railway right-of-way. Requirements for insurance are provided in Appendix A.

2. The Owner will only pay reimbursement for actual charges received towards providing the necessary railroad insurance. The pay request for this item shall include sufficiently detailed invoices, from the actual entity that provided the services, with an incurred cost.
3. The quantity for RAILROAD INSURANCE will be on a lump sum basis.

XI. CONTROL OF WORK

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 105

B. Additions:

1. The complete responsibility for this project lies with the Director of Public Works of the City of South Bend, Indiana acting through his authorized representatives.
2. Construction Engineering - The Contractor shall provide all the necessary, qualified personnel, equipment and supplies to perform all work required under this item. Construction Engineering as specified herein will be paid for at a contract lump sum price.
3. The contractor is responsible to maintain the site which includes but is not limited to; dust control, site security, erosion control, and protecting adjacent properties.
4. Work hours for the Project shall be from 7:00 a.m. through 7:00 p.m., Monday through Saturday. No work shall be permitted on Sundays, Holidays, or after hours unless approved by the City of South Bend Department of Public Works. The Contractor shall provide a minimum 48 hour notice for requests to work outside the specified work hours.
 - a. The following events are scheduled during the anticipated construction period. The Contractor will not be permitted to work on these dates without prior approval from the City of South Bend. All approaches within the project limits shall not be closed during these events:
 - (i) Notre Dame Graduation – May 13-15, 2016
 - (ii) Sunburst – June 6, 2016
 - (iii) Madison Primary Center – June 10, 2016
 - (iv) Leeper Art Fair – June 20-21, 2016
 - (v) Notre Dame Football Events –
 - (i) September 10, 17, and 24, 2016
 - (ii) October 15 and 29, 2016
 - (iii) November 19, 2016

XII. LEGAL RELATIONS

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 107

B. Additions:

1. The Owner, where mentioned in these documents, is the City of South Bend. The Engineer, where mentioned in these documents, is as follows:
 - a. Division A, Part 1 of 2 (Project 114-045) – Lawson-Fisher Associates, P.C.

- b. Division A, Part 2 of 2 (Project 115-019 Div. A) – American Structurepoint, Inc.
 - c. Division B, Part 1 of 3 (Project 115-019 Div. B) – American Structurepoint, Inc.
 - d. Division B, Part 2 of 3 (Project 114-035) – Lawson-Fisher Associates, P.C.
 - e. Division B, Part 3 of 3 (Project 114-032B) – Jones Petrie Rafinski Corp.
2. The Contractor shall apply for and obtain any and all required permits for the work from local, state, and federal agencies and shall comply with permit requirements, including the Indiana Department of Transportation, St. Joseph County / City of South Bend Building Department.
 3. If the Contractor awarded this contract is not a resident of Indiana, within thirty days, the Contractor shall provide the Engineer with proof that the Contractor is duly licensed, qualified and registered with the Secretary of State of Indiana to engage in business within the State of Indiana.

XIII. SUBMITTALS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 106
- B. Additions:
 1. Submit four (4) copies or an electronic version of the submittals for all equipment or materials used in this project to the South Bend Department of Public Works for approval. All submittals must be delivered within 7 calendar days from the notice to proceed.
 2. The Department of Public Works will review and return two (2) copies or an electronic version of the submittals within five (5) working days.
 3. The review of the submittal information by the Department of Public Works is to facilitate the satisfactory acceptance of the equipment. This review shall neither relieve the contractor from the responsibility for deviations from the Specifications, nor from errors and omissions in the shop drawings or literature. Parts found not meeting the requirements of these Specifications shall be removed, repaired or replaced at no cost to the OWNER.
 4. Submittals shall include complete manufacturer's descriptive information and shop drawings for all the parts furnished under this contract.
 5. Upon completion of project, the Contractor will supply one (1) conformed set of all submittals to the City of South Bend.

XIV. PROSECUTION AND PROGRESS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Sec. 108
- B. Additions:
 1. The project will have a completion date of November 15, 2016. The contract time will start when the Notice to Proceed is delivered and signed.
 2. The project will have an intermediate completion date of October 15, 2016 for substantial completion, including all asphalt and concrete work, structures, traffic control devices,

lighting, permanent pavement markings, and landscaping plantings complete and in place, and all travel lanes and pedestrian / non-vehicular facilities open to traffic.

3. The project will have an intermediate completion date of August 24, 2016 for roads open to bi-directional traffic along Main Street between Chippewa Avenue and Marion Street, and along Michigan Street / St. Joseph Street between Chippewa Avenue and Bartlett Street. A minimum of one travel lane in each direction on each corridor street shall be open to traffic on or before the specified date. Once bi-directional traffic is established on each corridor street, bi-directional traffic shall be maintained on each corridor street for the duration of the project.
4. The project will have an intermediate completion date of August 24, 2016 for lane closure along Michigan Street between Monroe Street and LaSalle Avenue. The work specified shall be arranged and prosecuted such that a minimum of two travel lanes are open to traffic on or before the specified date. The identified roads shall maintain a minimum of two travel lanes prior to June 6, 2016. A minimum of one travel lane shall be open to traffic during the specified lane closure period.
5. The project will have an intermediate completion date of August 24, 2016 for road closure along Main Street between LaSalle Avenue and Marion Street, and along Michigan Street between LaSalle Avenue and Bartlett Street. The work specified shall be arranged and prosecuted such that these roads are open to traffic on or before the specified date. The identified roads shall not be closed before June 6, 2016.
6. The project will have an intermediate completion date of August 5, 2016 for road closure along Main Street at Chippewa Avenue, and along Michigan Street at Chippewa Avenue. The work specified shall be arranged and prosecuted such that these roads are open to traffic on or before the specified date. The identified roads shall not be closed before June 6, 2016.
7. The project will have an intermediate completion date of May 27, 2016 for lane closure along Main Street between Sample Street and Monroe Street. The work specified shall be arranged and prosecuted such that a minimum of two travel lanes are open to traffic on or before the specified date. The identified roads shall maintain a minimum of two travel lanes prior to April 18, 2016. A minimum of one travel lane shall be open to traffic during the specified lane closure period.
8. The City, Engineer, and Contractor will hold a pre-construction meeting following award of the contract. The date of the Notice to Proceed will be agreed upon at that meeting.
9. Contractor shall provide a schedule to the Owner prior to beginning any work on the site.

XV. CHANGE OF CONTRACT TIME

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 108
- B. Additions:
 1. The Contract Time may only be changed by Change Order. Any Claim for an extension in the Contract Time shall be based on written notice delivered to the Department of Public Works within seven (7) calendar days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within fourteen (14) calendar days after such occurrence unless an official of the Public Works Department allows an additional period of time to ascertain more accurate data. The Contract Time will be extended in an amount equal to time lost to delays beyond the control of the

Contractor if a claim is made in accordance with this provision. Such delays shall include acts of neglect by the Public Works employees, or to fires, flood, labor disputes, epidemics, abnormal weather conditions, governmental procedures, or acts of God.

2. Unless otherwise provided, the Contract time is based upon normal weather conditions. An extension is granted for weather conditions significantly more severe than normal if the Contractor demonstrates to the satisfaction of the City that the delay in the progress of the work was due to such weather. The basis to define normal weather will be the data compiled by the United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA).
3. No extension of time will be granted if the Contractor, by his/her/its own action or inaction, including fault or negligence of Contractor's subcontractors, caused the delay, or for which any remedies are provided under any other provision of this agreement.
4. The grant of an extension of time under this Section in no way constitutes a waiver by the City of any rights or remedies existing under this contract at law or in equity.

XVI. DEFAULT AND TERMINATION

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 108

B. Additions:

1. Events of Default shall include Contractor's failure to perform any of its obligations under this contract including failure to commence work at the time specified, failure to perform the work in accordance with these specifications, unauthorized discontinuation of the work, failure to carry out the work in a manner acceptable to the City, failure to observe Federal, State, or local laws or regulations, and failure to comply with any other term of this contract.
2. If an Event of Default occurs, the City shall provide Contractor written notice and may permit Contractor ten (10) calendar days after the date of the notice to cure the default. If the default is not cured within the ten (10) day cure period, the City may at any time thereafter terminate this contract in which case the termination shall be final and effective.
3. Upon an Event of Default, the City may invoke the following remedies in addition to those remedies provided under separate provisions of this contract, the right of set-off against any payments due or to become due to the Contractor against the retainage, the right to take over and complete the Work. If the City notifies Contractor that City is invoking its right to complete the Work, all rights that the Contractor has in order under Contractor's subcontracts are assigned to the City, subject to the City's right to take assignment of all or only selected subcontracts at the City's discretion. The sole obligation accepted by the City under such subcontracts is to pay for Work satisfactorily performed after the date of the assignment. In the event a conditional assignment has not been executed, the Contractor shall execute or cause to be executed any assignment, agreement, or other document that may be necessary in the sole opinion of legal counsel to the City's Board of Public Works to evidence compliance with this provision. The Contractor shall promptly deliver such documents upon the City's request. In the case of such assignment, unless otherwise agreed in writing, The Contractor remains liability to subcontractors for any payment already involved, and for any claim, suit or cause of action based upon or resulting from any error, omission, negligence or other breach of contract by the Contractor, its officers, employees, or agents arising prior to the date of assignment to the City.

XVII. LIQUIDATED DAMAGES

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 108

B. Additions:

1. The contractor shall proceed with the work at such rate of progress to insure full completion within the Contract Time. It is expressly understood and agreed, by and between the Contractor and the Owner, that the Contract Time for completion of the work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the work, and excludes the time for unavoidable delays which were beyond the control and without the fault of the Contractor.
2. If the Contractor shall fail to complete the work, including final completion date, substantial completion date, and / or any intermediate completion dates, within the Contract Time, or extension of time granted by the Owner, then the Contractor will pay to the Owner the amount for liquidated damages a sum of two thousand five hundred dollars (\$2,500.00) for each calendar day that the Contractor shall remain in default after the time of completion stipulated in the Contract Documents.
3. The Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due to the following and the Contractor has promptly given written notice of such delay to the Owner and Engineer/Architect.
 - a. To any preference, priority, or allocation order duly issued by the Owner.
 - b. To unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to acts of God, acts of public enemy, acts of the Owner, acts of another Contractor in the performance of a Contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather.
4. The Contractor is hereby alerted that failure to submit shop drawings in a timely manner or failure to order materials in a timely manner, such that material manufacturing and delivery to the project site are delayed, will not be considered as unforeseeable causes in the determination of liquidated damages, extension of time granted by the Owner, or any excess cost.

XVIII. RETAINAGE AND FINAL PAYMENT

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 109

B. Additions:

1. Payments will be made every thirty (30) calendar days.
2. Consistent with provisions of IC 36-1-12-14, the Board of Public Works shall retain a percentage of payments throughout the duration of the project.
3. Before final payment and retainage are released the Contractor must satisfy the following:
 - a. All parts and labor meet requirements stated in the specifications.
 - b. Provide copies of test reports or cut sheets on all materials supplied.
 - c. Provide As-Built drawings in accordance with the City of South Bend Prevailing Specifications for Public Works.

- d. One (1) copy of the City of South Bend Completion Affidavit and one (1) copy of a Final Waiver of Lien.

XIX. WARRANTY

- A. Prevailing Specifications: None
- B. Additions:
 1. All parts shall include the following:
 - (i) Performance specifications;
 - (ii) Bill of materials
 - (iii) Warranties on all parts; and
 - (iv) Installation and safety requirements.

XX. OTHER UTILITIES

- A. Prevailing Specifications: None
- B. Additions:
 1. The Contractor shall verify the locations of all utilities by contacting Holey Moley at 1-800-382-5544 at least two (2) working days, not counting Saturdays, Sundays or federal and state holidays before proceeding with construction. It shall also be the Contractor's responsibility to contact any other utility that is not contacted by Holey Moley and verify the utility locations.
 2. The Contractor shall be responsible for working with the other utilities, i.e., gas, electric, telephone, etc. in order to assure that all utilities that need to be replaced or relocated can be done with a minimum disturbance to service. The Contractor shall also be responsible for coordinating schedules with the various utilities such that they can proceed with their relocation work as efficiently as possible.
 3. If the odor of natural gas is detected in a work area at any time during the course of work, the Contractor shall immediately notify NIPSCO at 1-800-634-3524. The Contractor shall also immediately notify the residents of adjacent properties. The Contractor shall advise the residents to evacuate their homes immediately if the odor is present within the dwelling.
 4. Unless an allowance is specified in the bid tab, the restoration of sprinkler systems damaged by the Contractor's operations shall be repaired at no cost to the City and Owner of the system. If an allowance is provided in the bid tab, the City will reimburse the Contractor up to the allowance amount for sprinkler repairs. Restoration of sprinkler systems damaged by the Contractor's operations exceeding the allowance will be considered incidental to the contract.
 5. The plans show all known utilities located within the limits of the contract according to information obtained from the various utility companies. The accuracy of the plans in this respect is not guaranteed by the Owner or the Engineer. All of the permanent and temporary utility appurtenances in their present or relocated positions as shown on the plans shall have been considered in the bid. These are further described in the respective utility work plans.

6. If work by one or more utilities is contingent on work by the Contractor or a utility, the Contractor shall keep all parties informed of the status and estimated completion date for the advance work in order to give each utility as much notice as possible to schedule crews and material for their relocation work.
7. Damage to any of the existing public utility facilities within the limits of the project caused by the Contractor's operations or equipment shall be repaired by the Contractor or public utility at no expense to the Owner. If such damage is repaired by the public utility, it shall be the responsibility of the Contractor to bear the expenses charged by the public utility performing such repairs. It shall also be the responsibility of the Contractor to coordinate with public utilities affected by such damage.
8. Any gas lines, wire lines, gas meter boxes, gas valve boxes, light standards, cableways, or signals required to be permanently relocated or adjusted are to be moved by the public utility which owns them, at the expense of the respective public utility. Notwithstanding the preceding sentence, the Contractor shall be responsible to relocate or adjust all facilities owned by the City of South Bend and all facilities not owned by public utilities or for which the public utility is not responsible, at the expense of the Contractor.
9. Contractor will support all existing utilities as required to prevent undermining during construction. Except where otherwise provided in the Plans and Specifications, the cost for required support or shoring for existing utilities shall not be paid for directly, but shall be included in the other contract pay items.

XXI. OTHER UTILITIES – SPECIFIC TO DIVISION A (114-045)

A. Prevailing Specifications: None

B. Additions:

1. Utilities: The status of all utility companies and organizations potentially involved with the work to be performed are described below as known at the time the contract was prepared.
 - a. Electric Transmission facilities of American Electric Power (AEP) / Indiana & Michigan Power (I&M) exist within the project limits. A transmission pole located at Sta. 40+06.7, 35.3' Rt., Line "B1" is in conflict with the proposed improvements and will be relocated by AEP. Relocation will be performed between February 15, 2016 and February 28, 2016. If questions arise, Vivian Nguyen of the utility may be contacted at 614-552-2147.
 - b. Electric Distribution facilities of American Electric Power (AEP) / Indiana & Michigan Power (I&M) exist within the project limits and are in conflict with the proposed improvements and will be relocated by AEP. Distribution facilities will be relocated to the north side of Chippewa Avenue between Station 52+88 Line "D" and Station 56+29 Line "D". Along Michigan Street, AEP facilities will be relocated outside the roundabout footprint and within the right-of-way. AEP will complete the relocation of their facilities within the project area by March 15, 2016. If questions arise, Antonio Macias of the utility may be contacted at 574-236-1658.
 - c. The facilities of the South Bend Water Works exist within the project limits. Water mains are not expected to be affected by the proposed construction, but service

laterals may be impacted. The Contractor shall be responsible for the removal of the existing fire hydrant assembly located at 50+68 Lt. "D" and 37+75 Lt. "C1" and installation of a new fire hydrant assembly as shown in the plans. The Contractor shall coordinate service lateral relocations with South Bend Water Works. If questions arise, Ed Herman of the utility may be contacted at 574-245-6109.

- d. Sanitary sewer facilities of the City of South Bend exist within the project limits. A 12" sewer is located east of the east sidewalk along Michigan Street and is not expected to be affected by construction. A 12" sewer is also located underneath the north curb of Chippewa Avenue and is not expected to be affected by construction. Laterals may be impacted by storm sewers. When conflicts are identified, relocation of the sewer lateral shall be coordinated with the utility. If questions arise, Tony Molnar may be contacted as the representative of the City of South Bend at 574-235-9251.
- e. The facilities of AT&T exist within the project limits. A buried conduit duct bank is located approximately beneath the east edge of the west sidewalk along Michigan Street. The AT&T manhole located at 38+80 Lt. Line "C1" is already near the design grade and will not be adjusted by AT&T. AT&T conduit facilities are not expected to be impacted by construction, but may impact construction as minimal cover will exist between the existing conduit bank and the proposed pavement subgrade in the area of 38+00, Line "C1". The Contractor should field verify the depth of AT&T facilities in this area and use caution when preparing the grade for improvements. If questions arise, Dennis Bunch of the utility may be contacted at 574-237-8380.
- f. The facilities of Comcast exist within the project limits. Buried fiber optic line is located along the south side of Chippewa Avenue, from the AEP Distribution pole at 53+10 Rt. Line "D" to the west. East of said pole, fiber optic line is attached overhead to the AEP pole located at 54+83 Rt. Line "D". Extending both north and east from the AEP Distribution pole located at 54+83 Rt. Line "D", Comcast has both coaxial cable and fiber optic line attached overhead to AEP Distribution poles. Comcast will relocate their facilities to AEP's new distribution poles and will perform the work once the new poles are in place. Relocation will be complete by March 31, 2015. Comcast also has facilities attached to the AEP transmission pole along Main Street. Comcast will relocate these facilities to the west side of Main Street by December 18, 2015. If questions arise, Jay Castello of the utility may be contacted at 847-789-1039.
- g. The following active facilities of NIPSCO (gas) exist within the project limits: 6" plastic line along the east right-of-way of South Michigan Street and a 2" plastic gas main along the North R/W of Chippewa at Michigan St. Also, at the Main and Chippewa intersection there is a 2" steel along the east right-of-way of South Main Street north of Chippewa, a 2" plastic along the east right-of-way of South Main Street south of Chippewa, and a 2" steel along the south right-of-way of Chippewa Avenue going both east and west. The following inactive facilities of NIPSCO (gas) exist within the project limits: 6" steel underneath the pavement of the east most northbound lane of South Michigan Street, retired regulator station in the northeast corner of Chippewa Avenue and South Michigan Street. NIPSCO will adjust their existing facilities along the east side of Main Street to the west side of Main Street by February 1, 2016. If questions arise, Phil Griffin of the utility may be contacted at 574-284-2214.
- h. The facilities of St. Joseph County Metronet exist within the project limits. Fiber optic conduit is located along the east side of Michigan Avenue as shown in the plans. St. Joseph County Metronet, or its Contractor, will relocate their handhole located at 37+78 Line "C1" to a point approximately 5 feet north, avoiding the proposed curb and storm sewer, and directionally drilling new fiber optic to the south, approximately

240 feet, at a depth of 8 feet in order to avoid proposed storm facilities. Relocation of these facilities will be complete by December 18, 2015. If questions arise, Ben Hudson of the utility may be contacted at 574-968-5353.

- i. The facilities of City of South Bend Bureau of Signals and Lighting exist within the project limits and will be impacted by construction. Traffic signal fiber optic connects the traffic signal controllers at Main/Chippewa and Michigan/Barbie to the traffic signal controller at Michigan/Chippewa, then north to the remainder of the interconnection network. Traffic signal fiber optic cable will be reconfigured through the Chippewa Avenue roundabout area as part of this contract. If questions arise, Ed Gleckler of the utility may be contacted at 574-245-6001.

XXII. OTHER UTILITIES – SPECIFIC TO DIVISION B (115-019)

A. Prevailing Specifications: None

B. Additions:

1. The status of all utility companies and organizations potentially involved with the work to be performed are described below as known at the time the contract was prepared.

- a. The facilities of American Electric Power (AEP) exist within the project limits. AEP Transmission facilities include overhead facilities along Main Street from Ewing to Bronson. There is also an underground manhole and conduit system located on Main Street South of Bronson and along Bronson from Main to Michigan Street. These facilities are not anticipated to be in conflict with the proposed work. If questions arise, Barb Dunlap of the utility may be contacted at (614) 552-1893.

AEP also has a proposed project by others to install a new underground electric duct bank concurrently with the work of this contract (South Bend Network-Studebaker Improvements, Circuit 2 South). The new duct bank is being installed along Main Street between South Street and Columbus Court, South Street from Lafayette Street to Michigan Street, Western Avenue from William Street to Main Street, and Washington Street from Lafayette Street to Michigan Street. The Contractor shall coordinate construction schedule with AEP so that the duct bank work can be completed in phase with the work of this contract. If questions arise, David Garcia of the utility may be contacted at (574) 236-1666.

- b. The facilities of AT&T Distribution exist within the project limits. AT&T has underground manholes and conduits throughout the project area. It is anticipated that the extent of AT&T's work in this area will be to adjust castings to grade as needed. The Contractor shall notify AT&T within 48 hours of needing the castings adjusted to grade. If questions arise, Dennis Bunch of the utility may be contacted at 574-237-8380.
- c. The facilities of AT&T Transmission exist within the project limits. AT&T Transmission facilities are buried facilities located at the intersections of Main and South, Michigan and South, Michigan and Monroe, Main and Broadway, and Michigan and Broadway. The facilities are not anticipated to be in conflict with the proposed work. If questions arise, Dean Norwich of the utility may be contacted at (574)842-8830.
- d. The facilities of Comcast Cable exist within the project limits. Comcast has aerial facilities on I&M and AEP electric poles. Comcast has underground facilities along Ewing, crossing Michigan and Main. The facilities are not anticipated to be in conflict with the proposed project. If questions arise, Jay Costello of the utility may be contacted at 847-789-1039.

- e. The facilities of the City of South Bend Department of Public Works – Sanitary exist within the project limits. It is anticipated that the extent of sanitary sewer work in this area will be to adjust castings to grade as needed and to restore combined sewer manholes to account for the work of realigning storm sewer pipe; this work shall be completed by the Contractor as shown in the plans. If questions arise, Tony Mulnar of the utility may be contacted at 574-235-9251.
- f. The facilities of the City of South Bend Department of Public Works – Water exist within the project limits. It is anticipated that the extent of Water Works Department work in this area will be to adjust water valves to grade and relocate and reset fire hydrants as needed; this work shall be completed by the Contractor as shown in the plans. If questions arise, Ed Herman of the utility may be contacted at 574-235-5633.
- g. The facilities of Indiana Michigan Power (I&M) exist within the project limits. I&M has existing overhead facilities throughout the project area. I&M has buried facilities along Main from Wayne to LaSalle and crossings at Bronson, South, Monroe, and Western. I&M has buried facilities along Michigan from Bronson to Monroe and crossings at Indiana and Sample. I&M has buried facilities on St. Joseph from Monroe to LaSalle and along Michigan from Western to Colfax. I&M facilities are not expected to be in conflict with the proposed work. If questions arise, Antonio Macias of the utility may be contacted at 574-236-1658.
- h. The facilities of NIPSCO Gas exist within the project limits. NIPSCO gas has an 8” steel gas main along Main Street crossing LaSalle and a 4” steel gas main along LaSalle crossing Main Street. NIPSCO has 2” steel gas mains at the intersections of Main and Washington and Main and Jefferson. NIPSCO Gas facilities are not anticipated to be in conflict with the proposed work. If questions arise, Phil Griffin of the utility may be contacted at (574) 284-2214.
- i. The facilities of MCI/Verizon exist within the project limits. MCI has underground fiber facilities in the railroad right of way crossing Main Street, and along Main Street from Columbus to Bronson. It is anticipated that castings will need to be adjusted to grade. If questions arise, Chris Fowler of the utility may be contacted at 317-685-8050.
- j. The facilities of Level 3 exist within the project limits. Level 3 has underground fiber facilities running north-south on the west side of Main Street from Stull to Bronson and running north-south on the east side of Main Street from West Jefferson Boulevard to Monroe. Level 3 facilities are not anticipated to be in conflict with the proposed work. If questions arise, Tim Boykin of the utility may be contacted at 720-888-0336.
- k. The facilities of Infinity Fiber, LLC exist within the project limits. Infinity Fiber/GAP has underground fiber throughout the project area. Infinity Fiber/GAP facilities are not anticipated to be in conflict with the proposed work. If questions arise, Keith Hamm of the utility may be contacted at (317) 517-2206.
- l. The facilities of St. Joe Valley METRONET exist within the project limits. St. Joe Valley Metronet has underground fiber throughout the project area. St. Joe Valley Metronet facilities are not anticipated to be in conflict with the proposed work.

The Contractor is alerted to the presence of existing Metronet equipment on certain signal poles within the project limits. If Metronet equipment is located on a signal pole to be removed or relocated within the project, the Contractor shall coordinate with Metronet for the removal of said equipment prior to initiating the work.

If questions arise, Ben Hudson of the utility may be contacted at 574-360-7812.

- m. The facilities of US Signal exist within the project limits US Signal has existing underground fiber and overhead fiber throughout the project area. US Signal facilities are not anticipated to be affected by the proposed work. If questions arise, Rick Andricks of the utility may be contacted at 614-483-6350.
- n. The facilities of Centurylink exist within the project limits. Centurylink has underground fiber within the railroad right of way and along Main and Michigan crossing Sample, Broadway, and Lafayette. Centurylink facilities are not anticipated to be affected by the proposed work. If questions arise, Kevin Huff of the utility may be contacted at (708) 837-7927.
- o. The facilities of Sprint exist within the project limits. Sprint has underground fiber facilities located within the railroad right of way. Sprint facilities are not anticipated to be affected by the proposed work. If questions arise, Gerry Crain of the utility may be contacted at 847-318-3010.
- p. The facilities of City of South Bend Bureau of Signals and Lighting exist within the project limits and will be impacted by construction; this work to modify the facilities shall be completed by the Contractor as shown in the plans. The Contractor shall coordinate with the Bureau of Signals and Lighting to provide necessary service to new signals and/or lighting facilities and to maintain signals and lighting service during the progression of the work. If questions arise, Ed Gleckler of the utility may be contacted at 574-245-6001.

XXIII. OTHER UTILITIES – SPECIFIC TO DIVISION B (114-035)

A. Prevailing Specifications: None

B. Additions:

- 1. The status of all utility companies and organizations potentially involved with the work to be performed are described below as known at the time the contract was prepared.
 - a. The facilities of American Electric Power (AEP) / Indiana & Michigan Power (I&M) exist within the project limits. Potential conflicts have not been identified, but may exist. The Contractor shall verify locations of buried AEP facilities at all pipe crossings prior to installation in order to identify required relocations. If questions arise regarding AEP aerial facilities, Bob Strasburg of the utility may be contacted at 574-236-1653. If questions arise regarding AEP buried facilities, Michael Denney of the utility may be contacted at 260-408-3682.
 - b. The facilities of the South Bend Water Works exist within the project limits. Water mains are located along each street within the project area. The Contractor shall be responsible for the relocation of existing 8 inch and 20 inch water mains as shown in the plans. The Contractor shall coordinate water main and service lateral relocations with South Bend Water Works. If questions arise, Ed Herman of the utility may be contacted at 574-245-6109.
 - c. Sanitary sewer facilities of the City of South Bend exist within the project limits. Combined sewers are located along Main Street and Michigan Street, at depths where they should not be impacted by construction. Laterals may be impacted by storm sewers. If conflicts are identified, relocation of the sewer lateral shall be coordinated with the utility. If questions arise, Tony Molnar may be contacted as the representative of the City of South Bend at 574-235-9251.

- d. The facilities of AT&T exist within the project limits. A buried six duct conduit system crosses Main Street / Marion Street at the mid-block alley and continues north and south. Buried cable in a four duct conduit crosses North Michigan Street at approximate Station 38+55 Line "PR-B". Typical bury depths have been used for design to avoid conflicts. The Contractor shall verify the elevation of the facilities prior to excavation in that area in order to confirm conflicts do not exist. If conflicts are present, the Engineer should be notified so adjustments can be made to the plans. If questions arise, Dennis Bunch of the utility may be contacted at 574-237-8380.
- e. The facilities of Comcast exist within the project limits. Buried coaxial cable crosses Main Street approximately 85 feet north of the centerline of Madison Street. Comcast will relocate this crossing to the north right-of-way line of Madison Street, then north along the east right-of-way of Main Street. Relocation will be complete by March 31, 2016. Comcast facilities also exist along the west side of Michigan Street between Navarre Street and Marion Street under the east side of the west sidewalk, but will not be affected by construction. If questions arise, Jay Castello of the utility may be contacted at 847-789-1039.
- f. The following active facilities of NIPSCO (gas) exist within the project limits: gas line along the east right-of-way of Michigan Street from LaSalle Avenue to south right-of-way of Madison Street, then east, gas stub along Marion Street from the east to a point 81 feet east of the centerline of Michigan Street, gas line along the west curb line of Main Street from LaSalle Avenue to Madison Street, then slightly west as the line continues north past Marion Street, gas line crossing Main Street north of Madison Street right-of-way, then continuing east along the south side of the north sidewalk to the alley located mid-block. The following inactive facilities of NIPSCO (gas) exist within the project limits: inactive gas line along the center of Main Street, inactive gas line along the north curb of Marion Street, inactive gas line along the north curb of Madison Street, inactive gas lines along Michigan Street. The standard bury depth for NIPSCO facilities is 30" from existing ground. The Contractor shall field verify the elevation of the existing gas lines and determine if relocation will be required. If questions arise, Phil Griffin of the utility may be contacted at 574-284-2214.
- g. The facilities of Street Joseph County Metronet exist within the project limits. Fiber optic conduit is located along the west side of Main Street, the south side of Madison Street, and the east side of Michigan Street between LaSalle Avenue and Madison Street and north of Marion Street. A manhole in the northwest quadrant of Main Street and Marion Street is the junction point for five different lines. Work in that area should be done with caution. An additional 24" pipe carrying Metronet facilities originates at said manhole and extends east, under the Street Joseph River. This pipe has a minimum of 9 feet of cover and is not expected to be impacted by construction. The Contractor will be responsible for the coordination of the relocation of Metronet facilities crossing Michigan Street to the east as shown in the plans. Metronet will use the proposed traffic signal handhole located in the northeast quadrant of the proposed roundabout, but is unable to cut their facilities. The Contractor shall coordinate installation of the handhole with Metronet and make adjustments to the handhole so that Metronet's fiber optic cable can pass through the handhole without being cut or spliced. If questions arise, Ben Hudson of the utility may be contacted at 574-968-5353.
- h. The facilities of City of South Bend Bureau of Signals and Lighting exist within the project limits and will be impacted by construction. Traffic signal fiber optic cable extends north from the traffic signal controller at LaSalle Avenue to the north side of Madison, then crosses to the east side of Main Street and continues north to the island

at Marion Street. At the Marion Street intersection, the fiber optic cable connects both existing traffic signal controllers, then crosses Marion Street to a handhole, then crosses Michigan Street to a handhole, then continues north along the east side of Michigan Street through the project limits. Traffic signal fiber optic cable will be relocated through the Marion Street roundabout area as part of this contract. If questions arise, Ed Gleckler of the utility may be contacted at 574-245-6001.

XXIV. OTHER UTILITIES – SPECIFIC TO DIVISION B (114-032B)

A. Prevailing Specifications: None

B. Additions:

1. Utilities: The status of all utility companies and organizations potentially involved with the work to be performed are described below as known at the time the contract was prepared.
 - a. Electric Distribution facilities of American Electric Power (AEP) / Indiana & Michigan Power (I&M) exist within the project limits and are in conflict with the proposed improvements and will be relocated by AEP. Distribution facilities will be removed and placed underground crossing Bartlett Street Station 72+00 and Station 73+00 Line "E". AEP facilities will be relocated outside the roundabout footprint from Station 14+50 and Station 17+00 Line "CC" and within the right-of-way. AEP will complete the relocation of their facilities within the project area by March 15, 2016. If questions arise, Antonio Macias of the utility may be contacted at 574-236-1658.
 - b. The facilities of the South Bend Water Works exist within the project limits. Water mains are expected to be affected by the proposed construction. The Contractor shall realign the existing 20" waterline per the plan details by May 31, 2016. It is expected that this work will take approximately 30 days to complete. If questions arise, Ed Herman of the utility may be contacted at 574- 245-6108.
 - c. Sanitary sewer facilities of the City of South Bend exist within the project limits. Combined sewer is located near the center line Michigan Street and within the roadway way of the existing Bartlett Street roadway and is not expected to be affected by construction. Laterals may be impacted by storm sewers. When conflicts are identified, relocation of the sewer lateral shall be coordinated with the utility. If questions arise, Tony Molnar may be contacted as the representative of the City of South Bend at 574-235-9251.
 - d. The facilities of AT&T exist within the project limits. A buried conduit duct bank is located on the west side of Michigan Street with manholes connecting it. The AT&T manholes located at 14+94 Lt. Line "CC" and at 17+00 Lt. Line "CC". AT&T is to remove and replace the two manholes to be out of the road surface and at a lower elevation. The proposed frame and covers are to be relocated out of pavement in grass park lawn area Relocation will be complete by April 30, 2016. If questions arise, Dennis Bunch of the utility may be contacted at 574-237-8380.
 - e. The facilities of Comcast exist within the project limits. Overhead service is located along the the N-S alleyway between Michigan Street and St. Joseph Street and crosses Bartlett Street to the north at 72+18 Line "E", attached to overhead to AEP Distribution poles. Comcast will relocate their facilities under Bartlett Street and along the roundabout R/W north of Bartlett Street and east of Michigan Street to their existing box by March 31, 2015. If questions arise, Jay Castello of the utility may be contacted at 847-789-1039.

- f. The following active facilities of NIPSCO (gas) exist within the project limits: active main locations – 6” steel gas located along west parkway area of N Michigan St., 2” plastic gas located in south r/w of Bartlett St ending at a point 89 ft east of the east r/w line of Michigan St. and extending 241 ft east towards the river. Inactive main locations – 8” cast iron running parallel to the active 6” steel by approx. 9 ft. the other retired mains are running E-W direction approx. 20 ft south of the north r/w of Bartlett St.. NIPSCO will adjust their existing facilities along the west side of Michigan Street through the intersection of Bartlett Street between Station 14+00 and 17+00 by April 1, 2016. If questions arise, Phil Griffin of the utility may be contacted at 574-284-2214.
- g. The facilities of St. Joseph County Metronet exist within the project limits. Fiber optic conduit is located along the east side of Michigan Avenue as shown in the plans. St. Joseph County Metronet, or its Contractor, will remove their handhole located at 15+15 Line “CC” and install a new split conduit around the existing fiber option line. Modifications of these facilities will be complete by March 31, 2016. If questions arise, Ben Hudson of the utility may be contacted at 574-968-5353.

XXV. COORDINATION WITH WI-FI NETWORK

- A. Prevailing Specifications: None.
- B. Additions:
 - 1. The Contractor is alerted to the presence of a separate contract to install a Wi-Fi system within the downtown region of South Bend, including portions within the project limits. This separate Wi-Fi contract will occur concurrent to the work. The Contractor shall coordinate with the City for scheduling the placement of Wi-Fi equipment on signal poles and or lighting poles prior to initiating the work.
 - 2. The City contact for coordinating the Wi-Fi network is Mr. Toy Villa, (574) 235-5920, tvilla@southbendin.gov.

XXVI. CONSTRUCTION ENGINEERING

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Sections 105.08(b), 105.08(c)
- B. Additions:
 - 1. Construction engineering for installation of roadway and utility improvements shall include the layout of design elements by professionally qualified personnel. The frequency of layout and density of layout will be at the discretion of the Contractor, but not in conflict with the Engineer’s ability to verify accuracy of the construction engineering.
 - 2. All construction engineering shall be performed by the Contractor, with all required materials provided by the Contractor at his expense. Construction engineering shall include re-establishing the survey points and survey centerlines; referencing the necessary control points; running a level circuit to confirm plan elevations and to establish elevations on new bench mark tablets; setting stakes for right-of-way, culverts, slopes, subsurface drains, paving, subgrade, curb, headwalls, structures and all other stakes required for control lines and grades; and setting vertical control elevations for such. This information shall be used to verify that the planned alignment and elevations will match existing conditions. Required alignments and elevations will be shown on the plans. Prior to incorporating established grades, the Contractor will be required to determine that all other planned elevations are in accordance with field conditions. The profiling of existing pavements beyond tie-in points for proper ride, profiling of existing ditches for proper flow, and visual observations that driveways or sidewalks may be constructed satisfactorily will

be required. All discrepancies shall be brought to the immediate attention of the Engineer. All changes in the design due to major discrepancies brought to the attention of the Engineer will be provided by the Owner. Field adjustments that do not affect the design shall be made by the Contractor and the Engineer shall be notified. Adequate control stationing shall be maintained throughout the project limits of construction.

3. The Contractor shall be responsible for providing positive drainage for all aspects of this project. The Contractor shall comply with requirements of the Stormwater Pollution Prevention Plan.
4. Field notes shall be kept in field note books in a clear, orderly, and neat manner consistent with standard engineering practices, including titles, number, and indexes. Such notebooks shall adequately document all survey information. Copies of field notes shall be furnished to the Engineer upon request during the contract time. The original field notes shall become the property of the Owner upon completion of the work. Such field notes shall be bound. All pages shall be numbered before submission to the Owner.
5. The Owner or Engineer will make all measurements and surveys that involve the determination of final pay quantities, including original and final cross sections. The accuracy of the construction engineering may be checked as necessary, but responsibility for the accuracy of engineering layout will be the Contractor's.
6. The supervision of the Contractor's construction engineering personnel shall be the responsibility of the Contractor. All errors resulting from the operations of such personnel shall be corrected with no additional payment.
7. As-Built information shall be submitted by the Contractor for the project as follows:
 - a. General Requirements:
 - (i) Deviations from the original construction drawings shall be shown in the same general detail utilized in the original drawings.
 - (ii) A copy of the plans shall be continuously updated (hand marked) on-site as construction proceeds and available for inspection by the City of South Bend Board of Public Works or their authorized representative.
 - (iii) If any significant changes, as deemed so by the City of South Bend or its authorized representative, are made to the plans during construction the as-built drawings shall be re-drafted to reflect the change(s).
 - (iv) Only computer generated corrections will be accepted on the final sets (electronic and hard-copy) of as-built drawings. No handwritten strike-outs or corrections will be accepted. The final set of as-built drawings shall be clearly stamped "AS-BUILT" and dated with the date of production. They shall also be stamped and certified by a professional engineer or professional land surveyor.
 - (v) The City reserves the right to utilize some or all of the retainage held for a project to complete as-built drawings if they are not submitted within twenty-one (21) calendar days of the substantial completion date of a project.
 - (vi) No retainage will be released until the as-built drawings are approved.
 - b. Final hard copy as-built drawing requirements:

- (i) One (1) set of as-built drawings shall be submitted on D size (24" x 36") mylar or vellum.
 - (ii) As-built drawings are to be submitted in black and white only.
- c. Electronic as-built requirements:
 - (i) One (1) set of as-built drawings shall be submitted in AutoCAD (2000 or later versions only) .DWG file format.
 - (ii) As-built drawing format shall meet all requirements set forth in drawing A-3 of the City of South Bend's Design and Construction Standards.
- 8. Construction engineering will be performed by a licensed professional engineer or land surveyor in the State of Indiana.
- 9. This item shall not be measured directly, but shall be paid as a percentage of accepted work completed, based on the Lump Sum Unit Price established in the Pay Items for CONSTRUCTION ENGINEERING. The cost of furnishing all necessary personnel, equipment, and supplies to accomplish the work shall be included in the cost of this work.

XXVII. PRE-CONSTRUCTION VIDEO OF SITE CONDITIONS

A. Prevailing Specifications: None.

B. Additions:

- 1. The Contractor shall be required to submit a professionally completed DVD recording of the project area to clearly show driveways, street pavements, signs, traffic signals, etc., prior to the start of construction to verify before and after conditions. The DVD shall indicate the date of the recording and also include a method to identify the street or area being videotaped such as stationing or some other unique identifier.
- 2. One original and two copies shall be forwarded to the Engineer for review prior to beginning construction and shall become the property of the Owner.
- 3. All DVD's shall be professionally labeled showing the Owner's name, name of project and the name of the Contractor.
- 4. Payment for all costs of providing DVD record shall be paid for on a Lump Sum (LS) basis for VIDEO RECORD.

XXVIII. CONTRACT ALLOWANCES

A. Prevailing Specifications: None.

B. Additions:

- 1. The bidder shall include Allowances in the bid for work that is in addition to and not included in the work shown/noted on the drawings or specified herein.
- 2. The Contractor shall not use any allowance unless directed in writing by the Owner.
- 3. The Owner will only pay reimbursement for actual charges received. The pay request for this item shall include sufficiently detailed invoices, from the actual entity that provided the

services, with an incurred cost.

4. Upon completion of the project, a change order will be issued to decrease the contract amount to account for any remaining (unused) portions of the allowances.
5. Allowances for the project are set as follows:
 - a. The Utility Relocation Allowance shall be \$10,000.
 - b. The Sprinkler Repair Allowance shall be \$5,000.
 - c. The Undistributed Allowance shall be \$35,000.
6. The quantities for these allowances will be in units of dollars. The dollars shown shall be the amount of the allowances of the types specified.

XXIX. MAINTENANCE OF TRAFFIC

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Sections 105 & 801
- B. Additions:
 1. Maintenance of traffic during construction shall conform to the "Indiana Manual on Uniform Traffic Control Devices" and the City of South Bend Design and Construction Standards.
 2. The attached "Traffic Closure Request" form is to be used for any lane restrictions or closures and required to be filled out and sent to the Department of Public Works.
 3. The Contractor shall arrange and prosecute the work specified for this contract. The Engineer shall approve the method of traffic control. The Engineer's approval of the method of traffic control shall not relieve the Contractor of responsibility for providing sufficient effective and safe traffic control. No construction equipment, vehicles, materials, supplies or temporary facilities shall be left unattended in the right-of-way of any street or left parked overnight without proper marking and lighting.
 4. After the award of the contract and before beginning the work, the Contractor shall submit his proposed schedule of operations for the review of the Engineer. The schedule of operations, as approved by the City, shall be maintained at all times.
 5. Any traffic control devices damaged, while being moved or handled, shall be replaced with no additional payment. All other traffic control devices necessary to maintain safe traffic operations and routings shall not be removed, changed, or relocated, except as authorized. Traffic control devices removed without authorization shall be replaced with no additional payment.
 6. Maintenance of Traffic shall be the sole responsibility of the Contractor. Access to all businesses and residences for all postal deliveries and all emergency traffic such as police, fire, medical, etc., within the project limits, shall be maintained at all times. Asphalt base and binder courses shall be completed prior to reopening to traffic. Drive construction in halves may be required to maintain access.
 7. The facilities and operations of Memorial Hospital will be significantly impacted by changes in traffic patterns during maintenance of traffic operations. The Contractor shall communicate closure schedules with the above listed and other adjacent businesses at

least 2 weeks prior to changes in patterns and maintain access to facilities throughout construction.

8. The names and telephone numbers of the Contractor's superintendent and two other responsible employees shall be furnished at the pre-construction conference. These employees shall be on-call and available at nights, weekends, or during other non-working periods to repair or replace all traffic control devices which may become damaged or inoperative.
9. In the event the Contractor desires not to perform traffic maintenance in accordance with the sequence of operations as called for within the Contract Documents, Contractor shall submit his alternate plan in writing to the Engineer and obtain acceptance at least 2 weeks prior to the commencement of any construction activities. Should the Contractor propose a street closure not otherwise identified within the Contract Documents, he shall submit a written request to the Engineer for review and acceptance at least 3 weeks prior to the planned closure.
10. The Engineer will give written notification of the acceptance or denial of any Maintenance of Traffic proposals. The failure to accept the request, as long as the decision is reasonable, shall not entitle the Contractor to an extension in contract time or to an increase in contract price.
11. The Contractor shall be responsible for all traffic signal maintenance including 24-hour emergency repair responsibility at the existing traffic signal locations from the beginning of work until the date of final acceptance of the traffic signal work. Traffic signal maintenance will begin at the onset of construction activities at the intersections until the date of final acceptance. The pay item for MAINTENANCE OF TRAFFIC shall cover all costs of traffic signal maintenance including 24-hour emergency repair.
12. The Contractor shall coordinate his work with the local agencies, including Fire, Police, City of South Bend and adjacent schools. The Contractor shall provide the local agencies with 72 hour notice for changes of maintenance of traffic phasing.
13. All excavations shall be barricaded, fenced, covered, backfilled, or otherwise prepared so as to provide protection to the public. The safety fence shall be bright orange made of high density polyethylene grid or approved equal a minimum of 42 inches high supported and tightly secured to steel posts on 10 foot centers.
14. Regulatory controls shall not be changed by the Contractor without prior approval. Regulatory controls may be relocated in order to permit necessary construction, provided these control devices remain effective and convey the intended meaning after relocation to a position which complies with the requirements of the IMUTCD.
 - a. After completion of construction, regulatory control devices which were relocated to facilitate construction shall be permanently installed as shown on the plans, with no additional payment.
 - b. All traffic control devices damaged while being moved or handled shall be replaced by the Contractor with no additional payment.
 - c. All other traffic control devices necessary to maintain safe traffic operations and routing shall not be removed, changed, or relocated, except as authorized. Traffic control devices moved without prior authorization shall be replaced with no additional

payment.

15. The Contractor shall be responsible for replacing pavement markings to the original, pre-construction condition upon completion of work.
16. The cost of replacing existing pavement markings impacted by Maintenance of Traffic shall be included in the cost of other items.
17. Construction of and maintaining of detours, including the removal of the same in accordance with the INDOT Standard Specification 713.08 shall be considered incidental to the "Maintaining Traffic" pay item.
18. The Lump Sum (LS) Pay Item for MAINTAINING TRAFFIC shall cover all costs of designing, constructing and maintaining traffic control in accordance with MUTCD and INDOT Standard Specification Section 104.04, (latest edition), for all work associated with this project except items specifically identified which shall be measured and paid for in accordance with the items listed in the proposal. The TCP shall incorporate the Maintenance of Traffic notes and details included on the Maintenance of Traffic Plan Sheets in the Project Plans unless revisions are approved by the Engineer and the City of South Bend.

XXX. SEQUENCE OF OPERATIONS – PROJECT 114-032B

A. Prevailing Specifications: None

B. Additions:

1. Sequencing – Bartlett Street Improvements & Memorial Hospital Garage Entrance:

a. Stage 1A

- (i) Stage 1A includes closing Bartlett Street between St. Joseph Street and Riverside Drive for storm sewer and roadway construction, and closing a portion of the hospital parking garage access road for roadway construction. Michigan Street will remain open to traffic, including access to Bartlett Street both east and west of Michigan Street, and to the hospital.

b. Stage 1B

- (i) Stage 1B includes closing Bartlett Street between Michigan Street and St. Joseph Street for storm sewer and roadway construction, and closing Bartlett Street between Michigan Street and N. Main Street for storm sewer and roadway construction.
- (ii) Stage 1B includes the detour for hospital and Bartlett Street traffic access, as Bartlett Street will be closed to access at the existing Michigan Street intersection, both east and west of Michigan Street. The hospital parking garage will be open to hospital garage traffic from west of the garage.
- (iii) During Stage 1B, Michigan Street will be open to traffic at all times, including during traffic control for temporary lane closures for the construction of the Bartlett Street storm sewer and 20" water main realignment open-cut crossing construction.

c. Stage 2

- (i) Stage 2 includes closing Michigan Street between Park Lane and Navarre Street

for the Bartlett Street improvements, along with the concurrent closing of Michigan Street between Navarre Street and LaSalle Avenue (US 20) for the Marion Street intersection improvements.

2. Stage 2 Bartlett Street improvements, along with the concurrent Marion Street intersection improvements, include the detour of Michigan Street and hospital access traffic. The Michigan Street detour between Park Lane and LaSalle Street is intended for local Michigan Street traffic while a separate and larger scale detour for Michigan Street (SR 933) regional thru traffic is also to be in operation to reduce traffic congestion in the downtown South Bend area.

XXXI. DESCRIPTION OF WORK

A. Prevailing Specifications: None

B. Additions:

1. Work to be performed shall include furnishing all labor, services, materials, insurance and equipment to construct the one-way to two-way street conversion improvements along Main Street and Michigan Street/St Joseph Street, from Chippewa Avenue to Bartlett Street, including new roundabouts at the intersections of Chippewa Avenue and Michigan Street, Marion Street and Michigan Street, and Bartlett Street and Michigan Street, according to the intent of the plans and specifications within the City of South Bend. Work elements, which are part of the required construction, include road reconstruction and resurfacing, bituminous and concrete pavement, curb, sidewalk, cycle track, ADA compliant curb ramp, storm sewer improvements, sanitary sewer, water main, common excavation, drive approaches, signing, traffic signal modifications, lighting, streetscape and landscaping, irrigation, pavement markings and all work as described in the Plans and Specifications
2. The **Base Bid** covers the providing and installing of all improvements according to the intent of the Plans and Specifications.
3. The project will be divided into two divisions.
 - a. Division A will consist of all work on Main Street and Michigan Street from south of Chippewa Avenue to north of Ewing Avenue.
 - b. Division B will consist of all work on Main Street and Michigan Street / St. Joseph Street from north of Ewing Avenue to north of Bartlett Street.
4. The Contractor shall preserve and protect all surrounding property, structures, tenants, visitors and their property from damage caused by the Contractor's operations.

XXXII. PLANS

A. Prevailing Specifications: City of South Bend Design and Construction Standards

B. Additions:

1. Division A
 - a. Part 1 of 2 of the plans consist of **97** sheets.
 - b. Part 2 of 2 of the plans consist of **27** sheets.

2. Division B
 - a. Part 1 of 3 of the plans consist of **246** sheets.
 - b. Part 2 of 3 of the plans consist of **101** sheets.
 - c. Part 3 of 3 of the plans consist of **55** sheets.
3. The work shall conform to the plans.
4. The drawings are schematic in nature.
5. The CONTRACTOR is responsible for estimating dimensions and quantities of materials.
6. In the event that the Special Provisions and the Plans conflict, the Special Provisions shall govern.

XXXIII. MUNICIPAL OPERATIONS

- A. Prevailing Specifications: None
- B. Additions:
 1. The Contractor shall be responsible for trash, yard waste, and recycling collection within the project limits. The Contractor shall coordinate with the City of South Bend Solid Waste, Waste Management, and other pickup services as requested to ensure collection services are maintained. The Contractor shall be required to collect bins, place them in a common point for easy access by automated truck services, and redistribution after pickup as requested.
 2. The Contractor shall be responsible for snow removal within the project limits and shall coordinate with City of South Bend Public Works. The Contractor is responsible for protecting his project site from excessive wear and tear during snow removal.

XXXIV. UNDISTRIBUTED ITEMS

- A. Prevailing Specifications: None
- B. Additions:
 1. The items which are indicated herein as undistributed shall be used only as directed by the Engineer. All undistributed items will be field measured by the Engineer to determine the quantity for payment. Quantities of undistributed items needed in addition to those indicated will be paid for at the contract unit price as shown on the Itemized Proposal and Declarations.
 2. Undistributed Pay Items and their associated quantity include:
 - a. Division A, Project 114-045

(i)	Inspection Hole	10 EA
(ii)	Adjust Water Service Line, Residential	2 EA
(iii)	Tap, Water Service, 1-Inch (City Tap Fee)	2 EA
(iv)	Cap Existing Water Service Line	2 EA

(v)	Sewer Lateral, Private Building, Reinstatement	2 EA
(vi)	Pavement Removal	100 SYS
(vii)	Water	23 kGAL
(viii)	Structure Backfill, Type 2	200 CYS
(ix)	PVC Schedule 80 Conduit, 3-Inch	300 LFT

b. Division B, Project 115-019

(i)	Road Closure Sign Assembly	20 EA
(ii)	Detour Route Marker Assembly	50 EA
(iii)	Sign, Sheet, Remove and Reset	20 EA
(iv)	PVC Schedule 80 Conduit, 2-Inch	100 LFT
(v)	PVC Schedule 80 Conduit, 3-Inch	1,500 LFT
(vi)	PVC Schedule 80, 4-Inch	400 LFT

c. Division B, Project 114-035

(i)	Inspection Hole	10 EA
(ii)	Adjust Water Service Line, Residential	2 EA
(iii)	Tap, Water Service, 1-Inch (City Tap Fee)	2 EA
(iv)	Cap Existing Water Service Line	2 EA
(v)	Sewer Lateral, Private Building, Reinstatement	2 EA
(vi)	Pavement Removal	100 SYS
(vii)	Water	23 kGAL
(viii)	Structure Backfill, Type 2	200 CYS

d. Division B, Project 114-032B

(i)	Video Inspection for Pipe	100 LFT
(ii)	Casting, Adjust to Grade	2 EA

3. The Itemized Proposal and Declarations include the above noted quantities.

XXXV. INSPECTION HOLE

A. Prevailing Specifications/INDOT Standard Specification Section: 105.03, 105.06, 107.20

B. Additions:

1. This work shall consist of digging inspection holes in accordance with 105.03, to verify the exact location of underground utilities that are in potential conflict with the proposed construction.
2. Materials, tools, equipment, labor and incidentals shall be provided as required.
3. Once utility locates are marked in the field, inspection holes shall be dug at critical locations as agreed upon by the Department along the marked locates where the utility is within 2 feet of the proposed construction. The inspection holes shall be dug to a depth to either the underground utility or to a depth 1 foot below the proposed construction elevation, whichever is shallower. The inspection hole shall be as large as necessary to search for the marked underground utility within 2 feet horizontally of each side of the marked locate. If the utility is found, as directed, outside the 2 feet horizontal distance from the locate mark, then it shall be considered as an additional inspection hole.
4. The results of inspection holes shall be plotted on the plan sheets and provided in .pdf

format to the Engineer within seven calendar days of completing the inspection holes. The results shall include the utility owner, type, size and material of the utility, station, offset and elevation of the top of the utility. If a utility is not found for a particular inspection hole, then the information shall include the station, offset, elevation and dimensions of the inspection hole.

5. Once the Contractor no longer requires the inspection hole to remain open, it shall be backfilled and compacted with B borrow in accordance with 211. If the inspection hole is to remain open beyond the day that it was dug, it shall be marked and protected to provide warning that the hole exists.
6. Payment for the work described above will be made at unit price set forth in the proposal for INSPECTION HOLE (EACH) which will include all digging, backfilling, B borrow, measuring, preparing and submitting results, coordination, and all necessary incidentals.

XXXVI. GEOTECHNICAL REPORT

- A. Prevailing Specifications: None
- B. Additions:
 1. The Geotechnical Report is included in Appendix F.
 2. The Contractor shall not infer any warranty or guarantee regarding the condition of existing soils throughout the project limits based on information provided in the Geotechnical Report.

XXXVII. REESTABLISH NATIONAL GEODETIC SURVEY (NGS) MONUMENT

- A. Prevailing Specifications: None
- B. Additions:
 1. A National Geodetic Survey (NGS) monument exists on the center curb located in the south approach of the intersection of Michigan Street and Chippewa Avenue.
 2. The Contractor shall not disturb the NGS monument until written notification from Lawson-Fisher Associates P.C. (LFA) has been received.
 3. The Contractor shall install a new NGS 3-D Deep Driven Rod Mark monument at a location to be specified by LFA, in accordance with recommended procedures outlined in the NGS Bench Mark Reset Procedures, beginning on page 18. (http://www.ngs.noaa.gov/PUBS_LIB/Benchmark_4_1_2011.pdf)
 4. The Contractor shall report to LFA, in writing, the final depth of the rod and whether it was driven to refusal or met the slow driving rate, as well as a description of any unusual mark setting circumstances.
 5. Reestablishment of the NGS monument will not be measured for payment, but will be paid for at the contract price for NATIONAL GEODETIC SURVEY MONUMENT, REESTABLISH (LS).

XXXVIII. SAMPLING AND TESTING

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Sections 106

B. Additions:

1. Quality control sampling and testing shall be the sole responsibility of Contractor. Quality control sampling and testing will be required for compaction testing of all backfill placed in the pipe trenches and around manhole structure.
2. Concrete sampling and testing for quality control will be required for all concrete. Air content test, slump test, 7-day and 28-day compression cylinders shall be provided for each 25 cubic yards of concrete utilized for driveways, cast-in-place structures, sidewalks, and curb construction.
3. Asphalt testing will be in accordance with City Standard Specifications.

4. Earthwork:

- a. Maximum density shall be determined by AASHTO T-99 as modified by Section 203.24 of the State Specifications using Method A for soil and Method C for granular material.
- b. The minimum soil compaction requirements for backfill material and pavement subgrade will be as follows:

(i) Subgrade under pavement, and curbs (existing and future)	100%
(ii) Topsoil used in all but the top 6-inches of fill in areas specified	90%
(iii) Existing ground receiving fills	100%
(iv) Backfill in pipe and conduit trenches under pavement and curbs (existing and future)	100%
(v) Backfill in pipe and conduit trenches in easement and open areas (existing and future)	95%
(vi) All other areas receiving fill, unless otherwise noted	100%

5. Compaction Testing Frequency:

- a. A minimum of one (1) Compaction Test will be required on the backfill for each sewer or water main pipe transverse run that is under the pavement or concrete curb. A minimum of three (3) Compaction Tests will be required on the backfill for sewer or water main pipe run. A pipe run is the length between structures or valves, not to exceed 400-feet.
 - b. A minimum of one (1) Compaction Test per 1,500 square yards of roadway per lift of earth fill or subgrade.
 - c. Location of the Compaction Tests will be selected by the Engineer.
6. Contractor shall provide copies of each sampling and testing report to Engineer as soon as said samplings and reports are available. Failure to provide these reports in a timely manner shall permit Owner to withhold payment until such time as the reports are received by Engineer.
 7. Neither observations by Engineer nor inspections, tests or approvals by others shall relieve Contractor from Contractor's obligations to perform the Work in accordance with the Contract Documents.
 8. Quality control sampling and testing shall be the sole responsibility of Contractor and will not be paid for directly, but the cost thereof shall be included in the cost of other items of the Contract.

XXXIX. COMMUNITY OUTREACH PLAN

A. Prevailing Specifications: 2016, INDOT Standard Specifications Sections 107.08 and 107.12

B. Additions:

1. The Contractor shall implement a Community Outreach Plan (COP) as a means of communicating the Contractor's work plan and schedule: the implementation of road closures, detours, construction zone signing, the Contractor's scheduled operations, intermediate completions, and overall progress.
2. The COP shall be distributed to all property owners and/or tenants who are adjacent to the project area and to those who are identified to the Contractor. The Contractor shall maintain a of distribution list including the property owners/tenants, local schools, emergency responders, City Utilities and Transportation Departments. The Contractor shall provide a draft distribution list for review at the Pre-Construction Conference. When the distribution list has been approved and before the start of work on the project, the Contractor shall provide copies of the distribution list to the Project Engineer and City's Customer Service Coordinator.
3. Elements of the Community Outreach Plan:
 - a. Business Service Construction Signs: (to be provided at road closed/detour barricades and at the locations of drives under construction) A list of Business Service Construction Signs will be provided and discussed at the Pre-Construction Conference. Sign shop drawings will be provided for fabrication and incorporation into the construction zone sign sequences shown in the plans. The Project Engineer and the Contractor shall determine the specific field location of all Business Service Constructions Signs. Requests for additional and/or different signs will be reviewed by the City Engineering Department and the City's Customer Service Coordinator.
 - b. Notification Letters: Generally, Notification Letters are to be provided to all listed on the distribution list. Notification Letters shall be prepared and distributed prior to construction phase sequence changes, changes in the detours and maintenance of traffic signage, and other times determined jointly by the City Engineering Department, the Contractor and the Project Engineer. The content of the Notification Letters shall be reviewed with the Project Engineer and the City Customer Service Coordinator in advance of delivery. The Contractor shall designate a Point of Contact person who is capable of discussing the work plan and details of schedule. The Contractor's Point of Contact person shall be listed with appropriate contact information on the Notification Letter. Contents of the Notification shall include:
 - (i) Completed Tasks
 - (ii) Updated Project Schedule
 - (iii) Contractor's Work Hours
 - (iv) Causes and Disposition of any Delays
 - (v) Vehicular Access Information
 - (vi) Items of Interest
 - (vii) Point of Contact Information
 - c. City Social Media: The City has established a Facebook page for information and to receive inquiries about City operations. The Notification Letters and the Business Service Construction Signs shall include link information to the City's Facebook page. The Contractor shall also provide updates to the work schedule for inclusion in the Facebook page.

- d. Construction Cameras: The Contractor shall place a webcams near the construction site showing the active construction site, as well as cameras showing current traffic conditions as directed, for a total of four (4) cameras.
 - e. Response to Inquiries: The Contractor shall maintain a log of Community inquiries for all requests at the project level. The log shall include inquiry date and individual, current status and follow-up action required. Anticipated inquiries include: requests for information, requests for changes and claim requests. The Project Engineer will determine the significance of the inquiry and the necessity to document it in the log. The log will be made available to the City Engineering Department, Department of Community Investment and Customer Service Coordinator.
4. Payment of costs of performing the work described above shall be included in the cost of the other contract items. Specific payment for furnishing and installing the Business Service Construction Signs shall be made at the unit price set forth in the proposal on a per each basis for: CONSTRUCTION SIGN, BUSINESS SERVICE, TYPE C.

XL. PUBLIC SAFETY

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Sections 107.08
- B. Additions:
 - 1. It shall be the Contractor's responsibility to secure the construction site against unauthorized entrance by persons and vehicles outside of and during work hours. This includes securing the site against dumping and public safety of the Owner, Owner's representatives, pedestrians, bystanders and neighborhood residents.

XLI. STREET CLEANING

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Sections 107.08(b)
- B. Additions:
 - 1. The Contractor shall provide effective dust control. Loader-mounted pick up, power sweepers, or other types of pull type models shall be used in all phases of street cleaning of streets adjacent to the limits of active construction.
 - 2. Street cleaning will not be paid directly, but shall be included in the cost of various items of the contract.

XLII. EROSION CONTROL PLAN AND PROOF OF PUBLICATION (SWPPP)

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Sections 107.15
- B. Additions:
 - 1. The Owner shall supply all requirements of 327 IAC 15-5 and submit the Stormwater Pollution Prevention Plan (SWPPP) to the St. Joseph County Soil and Water Conservation District (SWCD).

2. Upon approval from the SWCD, the Owner will notify the public of the construction activities through a public notice in the South Bend Tribune and will submit the Rule 5 – Notice of Intent (NOI) to the Indiana Department of Environmental Management (IDEM).
3. See Appendix D for the project SWPP and NOI (Rule 5).

XLIII. CRITICAL PATH SCHEDULE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Sections 108.04
- B. Additions:
 1. In addition to any other progress chart required for this project, the CONTRACTOR shall submit and obtain acceptance, prior to any construction activities commencing on this project, of a network diagram PERT chart schedule utilizing the Critical Path Method of determining a project duration, which indicates how the Contractor will complete the project within the specified Contract Time.
 2. At a minimum, this schedule shall have all project milestones and the general Work activities required to construct the project shown in a logical sequence. The activities shall show the various dependencies and relationships between each activity(s), along with the estimated start dates, finish dates, durations, cost value, and the critical path of the construction of the project.
 - a. Submittal of shop drawings for review and ordering of materials with long lead times, including but not limited to lighting poles, signal poles, and landscaping items, shall be included as work activities within the Critical Path Method schedule.
 - b. The Contractor shall include 5 working days within the schedule for review of submitted shop drawings.
 - c. Notice to Proceed is anticipated to be issued the day of pre-construction meeting.
 3. The ENGINEER will schedule and conduct a Preconstruction Conference to commence development of the required project schedule. At this meeting, the requirements of this Section, as they apply to the Contract, will be reviewed with the CONTRACTOR. The CONTRACTOR shall be prepared to review and discuss methodology for the schedule and sequence of operations plus cost loading methodology. The schedule shall be a CPM schedule using Microsoft Project 2016.
 4. The CONTRACTOR shall prepare and submit to the ENGINEER 5 copies of the CONTRACTOR'S Construction Schedule within five (5) days before the Pre-Construction Meeting. The CONTRACTOR'S Construction Schedule shall show the dates on which each part or division of the Work is expected to be started and completed, and shall show all submittals which constrain any work activity, allowing a minimum five (5) working days for the ENGINEER'S review of each submittal unless a longer period of time is specified elsewhere in these Contract Documents. The CONTRACTOR shall also submit a separate listing of all submittals required under the Contract, showing when each submittal will be submitted. The Work activities making up the schedule shall be of sufficient detail to assure that adequate planning has been done for proper execution of the Work and such that, in the sole judgment of the ENGINEER, it provides an appropriate basis for monitoring and evaluating the progress of the Work. All on- site construction activities shall be cost loaded. The cost value of all on-site construction activities shall equal the Contract value. Submittal and approval of the CONTRACTOR'S

Construction Schedule in accordance with the requirements of this Section is a condition precedent to the receipt of any payments from the CITY under this Contract.

5. An updated schedule shall be submitted by the 5th of each month and shall be based upon the construction progress through the end of the previous month, and shall include revisions due to approved change orders, approved extra Work items, all changes in the character, and/or scope of the Work as determined by the ENGINEER, utility relocations, and mutually agreed to pending change orders.
6. No acceptance will be given to a schedule which indicates construction proceeding beyond a contract completion date or duration, road completion date or opening date, completion duration, or any other milestone dates or durations as set out elsewhere within the Contract Documents.
7. The updated schedule shall reflect, at a minimum, the following:
 - a. Actual start dates
 - b. Actual finish dates
 - c. Actual durations
 - d. Estimated start dates of the remaining activities
 - e. Estimated finish dates of the remaining activities
 - f. Estimated durations of the remaining activities
 - g. Planned dependencies and relationships of each item
 - h. Actual dependencies and relationships of each item
 - i. Activity cost value
8. The CONTRACTOR shall base his schedule on his subcontractor(s) and supplier(s) schedules.
9. In the event the updated schedule indicates that construction is proceeding beyond any established contract dates, durations or milestones, as may have been modified by an approved change order, the CONTRACTOR shall, at no additional cost to the Owner, take any and all steps necessary to ensure compliance with any contract date, duration, or milestone. Such steps may include, but are not limited to, providing additional labor, materials and/or equipment, longer working hours and/or additional shifts, or revising, with the approval of the Engineer, the proposed sequence of Work activities. These steps shall be reflected on each subsequently updated schedule.
10. The CONTRACTOR shall distribute copies of all schedules as follows:
 - a. ENGINEER – Four (4) copies
 - b. All subcontractors and suppliers – One (1) copy each
 - c. All other parties as mutually agreed to by the CONTRACTOR and the ENGINEER – One (1) copy each
 - d. Each utility with facilities within the limits of the project – One (1) copy each
11. The initial cost of supplying this schedule and any Work associated with its development and distribution will be paid for as set out in the Itemized Proposal and Declarations for the Lump Sum (LS) Pay Item CPM SCHEDULE.
12. Cost of development and distribution of monthly updates to the CPM schedule will be paid for as set out in the Itemized Proposal and Declarations for each (EACH) update under the Pay Item CPM SCHEDULE, MONTHLY UPDATE.
13. Failure to provide the schedule by the 5th of each month shall permit the Owner to withhold all outstanding progress payments until such time as the appropriate schedules

are submitted to the satisfaction of the ENGINEER, and may be deemed by the Owner as the basis of Contract default by the Contractor without further justification.

XLIV. CONTACT DESIGNEES

A. Prevailing Specifications: None

B. Additions:

1. The names and contact information for each representative designated by the Contractor for specific areas of authority shall be provided no later than the project Preconstruction meeting. At a minimum, such representatives would include, but not be limited to those responsible for overall project supervision, erosion control, traffic control operations, and project safety and compliance.

XLV. PERMITS

A. Prevailing Specifications: None

B. Additions:

1. The Owner has secured the following permits:
 - a. Rule 5 Erosion Control
2. The Contractor shall be required to observe and obey all requirements of the permits. All permit documents are included in Appendix D.
3. A Street Closure Form shall be submitted by the Contractor prior to each change in access or traffic flow. The Contractor shall submit the enclosed form to the Public Works Customer Service Staff for approval of the change. Street Closure Form is included in Appendix E.
4. Division B, Project 114-032B
 - a. Army Corps of Engineers 404 Permit, IDEM Section 401 Water Quality Certification Permit and Indiana Department of Natural Resources Construction in a Floodway Permit have been submitted for the construction of the outfall structure at the St. Joseph River. Contractor shall be in receipt of such permits prior to initiation of affected work and adhere to all conditions set forth by such permits.

XLVI. MOBILIZATION AND DEMOBILIZATION

A. Prevailing Specifications: 2016, INDOT Standard Specifications Sections 110

B. Additions:

1. The mobilization portion of this pay item will be limited to 75 percent of the Lump Sum price. The balance of the Lump Sum price will be considered demobilization and will be paid for when all work including final cleanup is completed.
2. This work shall be paid for at the Lump Sum (LS) unit price for MOBILIZATION AND DEMOBILIZATION. The cost of all materials, equipment, tools, labor, transportation,

operations, and all other incidentals shall be included in the cost of the item.

XLVII. STATEMENTS ABOUT EXISTING CONDITIONS OF ADDITIONAL RIGHT-OF-WAY AND ENCROACHMENTS

A. Prevailing Specifications: 2016, INDOT Standard Specifications Sections 107 and Recurring Special Provision 107-R-169

B. Additions:

1. Right-of-Way: All additional right-of-way requirements for the contract have been cleared except for the conditions at the parcels described below:

a. Clear Parcels – Clear title to the following properties is anticipated as set out below. The properties listed below shall not be entered until authorized in writing.

(i) Division A, Project 114-045

<u>Parcel Number</u>	<u>Owner</u>	<u>Location</u>	<u>Estimated Clear Date</u>
1	Calvary Temple South Bend Gospel Tabernacle, Inc.	39+40 Line 'B1', Rt. 37+90 Line 'C1', Lt. 52+00 Line 'D', Lt.	4/30/2016
2	Palmer, KR et al.	36+15 Line 'C', Rt. 35+76 Line 'C', Rt.	4/30/2016
3	Palmer Funeral Home	various	4/30/2016
4	Sandra A. Zanka	39+25 Line "B1", Lt.	4/30/2016
5	XB Real Estate, LP	41+00 Line "B1, Lt.	3/30/2016
6	Sandra V. Case	35+50 Line "C", Rt.	4/30/2016

(ii) Division B, Project 115-019

<u>Parcel Number</u>	<u>Owner</u>	<u>Location</u>	<u>Estimated Clear Date</u>
1	First Source Bank	757+00 Line 'MAI', Lt.	5/31/2016

(iii) Division B, Project 114-035

<u>Parcel Number</u>	<u>Owner</u>	<u>Location</u>	<u>Estimated Clear Date</u>
1	Fifth Third Bank	11+85 Line 'A', Lt.	4/30/2016
2	QDI Realty, LLC	11+80 Line 'A', Rt.	4/30/2016

(iv) Division B, Project 114-032B

<u>Parcel Number</u>	<u>Owner</u>	<u>Location</u>	<u>Estimated Clear Date</u>
1	Memorial Hospital of South Bend	22+00 Line 'BO'	5/31/2016

b. Right-of-Entry - The right-of-entry to the following properties is anticipated as set out below. The properties listed below shall not be entered until authorized in writing.

(i) Division B, Project 114-035

<u>Parcel Number</u>	<u>Owner</u>	<u>Location</u>	<u>Estimated Date Right-of-Entry</u>
----------------------	--------------	-----------------	--------------------------------------

3	Memorial Health System, Inc.	various	4/30/2016
4	Memorial Hospital of South Bend, Inc.	various	4/30/2016

2. Encroachments – The City has approved the following encroachments to remain within the Public Right-of-Way.
 - a. Division A, Project 114-045
 - (i) For Parcel No. 4, the Sandra A. Zanka property, an encroachment for an existing billboard has been established along Main Street, Line 'B1' as follows: The existing billboard shall remain in place at approximate Sta. 40+35 Lt.
 - (ii) Existing houses exist on Parcel 2 (K.R. Palmer) and Parcel 6 (Sandra V. Case) which will be demolished as part of this contract. The Contractor shall not enter the parcels or proceed with the demolition without written authority from the Engineer.
 - b. Division B, Project 114-035
 - (i) An existing building exists on Parcel 3 (Memorial Health System, Inc.) which will be demolished as part of this contract. The Contractor shall not enter the parcel or proceed with the demolition without written authority from the Engineer.

XLVIII. CLEARING RIGHT-OF-WAY

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Sections 201, 202
- B. Additions:
 1. Areas to be cleared include all Right-of-Way and Temporary Right-of-Way within the Project Limits.
 2. Disposal of debris resulting from clearing or removal operations shall be at an off-site area licensed to receive such material, provided by the Contractor and approved by the Owner. No debris shall be left overnight.
 3. The Contractor shall provide all barricades, devices, and personnel necessary to control vehicle and pedestrian traffic, both in the right of way and on adjacent private property. Traffic controls in the right of way shall conform to the Indiana Manual for Uniform Traffic Control Devices.
 4. All debris from tree removal operations shall be removed from the site daily. No fires or burning will be allowed. The debris shall be removed in accordance with all applicable Federal, State, and local laws and ordinances to a facility licensed to receive such waste. The Contractor shall inform the Engineer of the name of the facility receiving the waste.
 5. Concrete or other items outside the removal limits damaged by the Contractor or any of his Subcontractors during the removal process will be repaired or replaced to the satisfaction of the Engineer at no additional cost.
 6. Curb and sidewalk to be removed shall be saw cut at the removal limits indicated on the Plans. Saw cutting for removal shall be considered incidental to the Contract.
 7. This item will include the removal of all trees, shrubs, curb, sidewalk, driveways, landscaping, retaining walls, fence, signal foundations, trees, stumps, shrubs, bushes,

brush, guardrail, mailboxes, poles, posts, brick, and any other item to be removed within the construction limits not specifically identified with its own pay item or identified as receiving an alternate treatment. Underground items such as City water, storm and sanitary sewer shall not be removed unless specifically identified in the plans.

8. The Contractor shall not remove any signs not specifically shown for removal on the plans or unless directed by the Engineer
9. Where fence and gates are shown to be removed on the plans, the Contractor shall notify the property owners one (1) week in advance of the removal date to confirm the limits of removal and coordinate the placement of temporary fencing.
10. This work shall not be measured but will be paid for at the Lump Sum (LS) unit price for CLEARING RIGHT-OF-WAY. The cost of all materials, equipment, tools, labor, transportation, operations, and all other incidentals shall be included in the cost of the item. Clearing Right of Way shall include the removal of all items not specifically set out as pay items in the Itemized Proposal.

XLIX. PAVEMENT REMOVAL

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 202
- B. Additions:
 1. The Contractor shall remove and dispose of any concrete pavement areas shown on the plans to be removed or as directed by the Engineer.
 2. An undistributed quantity of Pavement Removal has been included in the Contract for unidentified areas of concrete pavement. See Special Provision **XXXI** for additional details.
 3. All pavement areas to be removed shall be neat line saw cut at removal limits for full depth removal. Saw cutting for removal shall not be measured for pavement but shall be considered incidental to the Contract.
 4. Pavement Removal will be paid for at the contract unit price per square yard for PAVEMENT REMOVAL. Asphalt type pavement removal shall be paid for as Common Excavation in accordance with INDOT Standard Specifications Section 203.

L. POLE FOUNDATION REMOVAL

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 202
- B. Additions:
 1. The site contains existing concrete pole foundations that will be removed, full depth.
 2. Foundation removal will be paid for at the contract unit price for "Pole Foundation, Remove...EACH" as indicated on the itemized proposal sheet.

LI. LIGHT POLE AND FOUNDATION REMOVAL

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 202
- B. Additions:
 - 1. Light pole, foundation and electrical appurtenances removal will be paid for at the contract unit price for "Light Pole and Foundation, Remove...EACH" as indicated on the itemized proposal sheet.

LII. TREE REMOVAL

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 201
- B. Additions:
 - 1. Trees larger than 18" in diameter at a point 36 inches above the surface elevation shall be measured per each tree removed. Trees less than 18" in diameter at a point 36 inches above the surface elevation shall not be measured for payment but shall be included in the cost of Clearing Right-of-Way.
 - 2. Tree Removal will be paid for at the contract unit price for "Tree, Remove...EACH" as indicated on the itemized proposal sheet and shall include the cost to remove the stump and roots as required and disposal off site.

LIII. REMOVAL AND ABANDONMENT OF STRUCTURES AND MUNICIPAL UTILITIES

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 202
- B. Additions:
 - 1. Where indicated on the plans, existing structures: inlets, catch basins, and manholes (storm and sanitary) shall be removed. Void areas shall be backfilled with suitable granular material, incidental to this Pay Item.
 - 2. Where indicated on the Plans, existing water distribution system components (caps and fire hydrants) shall be removed. Void areas shall be backfilled with suitable granular material, incidental to this pay item.
 - 3. Items removed shall be properly disposed of off-site. Structure castings, fire hydrants and any other items of value shall be salvaged to the Owner.
 - 4. Storm Pipes indicated on the Plans for removal or abandonment shall be investigated by the Contractor for indications of existing or recent active discharge. If no such indication is present, the pipe is to be removed or abandoned or plugged. If there is indication of active or recent discharge, Contractor shall contact the Engineer.
 - 5. Where indicated on the Plans the existing storm sewer and manhole structures shall be abandoned. For abandonment, each existing manhole structure shall be removed to a minimum of 3-feet below the existing grade and properly disposed off-site. The annular space shall be filled with flowable mortar to 1-foot below the subgrade elevation, then fill the remaining area with granular material. The existing casting and frames shall be removed and turned over to the Owner. The Contractor shall verify all structure material types, diameters, and depths. For abandonment, the existing sanitary sewer shall be flushed to remove any residual sewage. Then the storm pipe to be abandoned shall be

filled with flowable mortar. Vent pipes shall be provided to expel trapped air. Once the pipe has been filled with flowable mortar, then the vent pipe shall be sealed water tight. The ends of the existing pipes to be abandoned shall be plugged or capped water tight as noted on the Plans. The Contractor shall provide and pay for all water as required to flush the existing sanitary sewer pipes. Contractor shall verify the material type and diameter of each pipe segment. The length of existing pipe and number of existing manholes noted for abandonment are approximate.

6. The flowable mortar shall meet the requirements of INDOT Specification Section 213. The design mix shall be for non-removable flowable mortar and shall be submitted for approval a minimum of two weeks before installation. Field testing of the flowable mortar shall be conducted on each pipe segment or structure to be abandoned. Contractor shall collect representative samples and test per INDOT Specification Section 213.04(b). Testing shall be incidental to the respective work item.
7. Payment for the removal and abandonment items described in this section will be made at the unit price set forth in the proposal for PIPE, REMOVE EXISTING STORM SEWER (LFT); STRUCTURE REMOVE, EXISTING STORM MANHOLE (EACH); ABANDON, EXISTING STORM SEWER (LFT); which price shall constitute all labor, materials and incidentals to complete the work in place.

LIV. CONCRETE CURB REMOVAL

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 202
- B. Additions:
 1. Curb, Concrete, Remove will be paid for at the contract unit price for "Curb, Concrete, Remove...LFT" as indicated on the itemized proposal sheet.

LV. CONCRETE SIDEWALK REMOVAL

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 202
- B. Additions:
 1. Sidewalk, Concrete, Remove including incidental neat line sawcut will be paid for at the contract unit price for "Sidewalk, Concrete, Remove...SYS" as indicated on the itemized proposal sheet.

LVI. REMOVE AND SALVAGE SIGN STRUCTURES

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 200, 802
- B. Additions:
 1. The following sign structures shall be removed, salvaged and delivered to the City of South Bend:
 - a. Division A, Project 114-045
 - (i) Sta. 39+40 Line "B1", 40.4' Rt.
 - (ii) Sta. 51+83.3 Line "D", 42.2' Rt.

- (iii) Sta. 51+54.2 Line "D", 30.9' Lt.
- b. Division B, Project 114-035
 - (i) Sta. 14+04 Line "A", 37.7' Rt.
 - (ii) Sta. 14+06 Line "A", 34.6' Lt.
 - (iii) Sta. 23+43 Line "PR-A", 74.4' Rt.
 - (iv) Sta. 38+95 Line "PR-B"
 - (v) Sta. 43+80 Line "PR-B1"
- 2. Materials to be salvaged shall be removed without damage in sections that can be readily transported. These materials shall be stockpiled neatly at a location as directed by the Engineer.
- 3. The cost of removing the sign structures, removal of existing foundations in accordance with the Standard Specifications, and the delivery and stockpiling of the salvaged materials will not be paid for separately but shall be included in the cost of the salvaged structure.
- 4. Payment will be made at the Unit Prices set forth in the Proposal for SIGN STRUCTURE, SALVAGE (LSUM).

LVII. TRAFFIC SIGNAL SYSTEM REMOVAL

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 200, 802
- B. Additions:
 - 1. All salvageable traffic signal equipment removed from Main Street from south of Sample Street to north of LaSalle Avenue shall be delivered to the INDOT LaPorte District Traffic Division Yard.
 - 2. All salvageable traffic signal equipment removed from Main Street south of Sample Street or from Michigan Street shall be delivered to the City at 731 S Lafayette Boulevard, South Bend, IN.
 - 3. The Contractor shall be responsible for all related coordination with INDOT, the City and the electric power service utility in advance of the work.
 - a. The Contractor shall remove all unused signal conductors and abandon unused signal conduit.

LVIII. REMOVE AND SALVAGE SIGNAL EQUIPMENT

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 200, 802
- B. Additions:
 - 1. All traffic signal equipment shall become the property of the Owner. Delivery shall be coordinated with 48 hours advance notice to a location as directed by the Engineer.
 - 2. Signal strain poles, mast arms, signal heads, controllers, and controller cabinets at the following locations shall be removed, salvaged and delivered to the City of South Bend:
 - a. Division B, Project 114-035
 - (i) Sta. 15+80 Line "A", 36.23' Rt.

- (ii) Sta. 15+79 Line "A", 38 Lt.
 - (iii) Sta. 15+91.21 Line "A", 49' Lt.
 - (iv) Sta. 15+92.72 Line "A", 49' Rt.
 - (v) Sta. 16+64.21 Line "A", 38' Rt.
 - (vi) Sta. 16+66 Line "A", 38' Rt.
 - (vii) Sta. 22+26 Line "PR-A", 16.5' Rt.
 - (viii) Sta. 22+24 Line "PR-A", 4.7' Rt.
 - (ix) Sta. 22+58 Line "PR-A", 31.4' Lt.
 - (x) Sta. 22+75 Line "PR-A", 65.8' Rt.
 - (xi) Sta. 23+16 Line "PR-A", 51.9' Lt.
 - (xii) Sta. 23+37 Line "PR-A", 8.9' Rt.
 - (xiii) Sta. 40+64 Line "PR-B", 7.8' Lt.
 - (xiv) Sta. 40+64 Line "PR-B", 1.7' Lt.
 - (xv) Sta. 40+75 Line "PR-B", 46.4' Rt.
 - (xvi) Sta. 41+09.7 Line "PR-B", 1.8' Lt.
 - (xvii) Sta. 41+55.7 Line "PR-B1", 37.5' Rt.
3. Materials to be salvaged shall be removed without damage in sections that can be readily transported. These materials shall be stockpiled neatly at a location as directed by the Engineer.
 4. The cost of removing the signal equipment, removal of existing foundations in accordance with the Standard Specifications, and the delivery and stockpiling of the salvaged materials will not be paid for separately but shall be included in the cost of the salvaged signal equipment.
 5. Payment will be made at the Unit Prices set forth in the Proposal for SIGNAL EQUIPMENT, SALVAGE (LSUM).

LIX. HOUSES AND BUILDINGS REMOVAL

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 306
- B. Additions:
 1. The removal of houses and buildings shall include the removal and proper abandonment of the basement walls, basement floors, footings, sewer and water connections to the Right-of-Way limit and any necessary backfilling.
 2. The removal and proper abandonment of the basement walls, basement floors, footings, sewer and water connections and any necessary backfilling shall be included in the contract lump sum price for HOUSES AND BUILDINGS, REMOVE.

LX. EARTHWORK

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 203
- B. Additions:
 1. Earthwork includes all excavation of soils, and any other materials within the project limits not paid for elsewhere, to establish the grades required by the work, including undercut required to establish pavement base grades.
 2. Earthwork includes the transportation, hauling and disposal of excess material from the project limits, with the exception of pavement removal, which is to be considered incidental to the PAVEMENT, REMOVE Pay Item.

3. Contractor may not spoil excavated material within the lawn area between the curb and sidewalk if such placement would cause the gradient to be towards the sidewalk without prior written authorization of the Owner for the specific area in question.

LXI. COMMON EXCAVATION

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 203

B. Additions:

1. Excavation and embankment shall be in accordance with the following:
2. The minimum soil compaction requirements for backfill material and pavement subgrade will be as follows:

Subgrade under any roads, pavements, curbs, and drainage structures	100%
Topsoil used in all but the top six inches (6") of fills in areas specified	90%
Existing ground receiving fills	90%
Backfill in pipe and conduit trenches under any roads, pavements, and curbs	95%
Backfill in pipe and conduit trenches not under pavement or curbs	95%
All other areas receiving fill	90%
Compacted Aggregate Base	100%

Maximum density shall be determined by AASHTO T 99 as modified by section 203.24 of the State Specifications using Method "A" for soil and Method "C" for granular material.

3. The Contractor shall keep all public roadways that are used for hauling excavation or borrow material clean and free of any spillage of material. Said public roadways shall be cleaned on a daily basis. The cost of removal of any spillage shall be included in the unit cost of excavation or borrow material and no further compensation will be made. Failure to comply with this requirement will result in cleaning of the spillage by the Local Public Agency with a back charge of two hundred fifty dollars (\$250.00) per occurrence.
4. All excavations and trenches shall be properly braced to furnish safe working conditions in accordance with Federal, State and Local laws, statues and ordinances. The Engineer may order the Contractor to provide additional bracing should there be danger of injury to existing or adjacent structures. Whenever running sand is encountered, close sheeting, well points, or both, shall be used.
5. All grading and compaction of the subgrade under the pavement by a vibratory roller necessary for the completion of this Project including, but not limited to, shaping of subgrade under pavement and sidewalks, shall be incidental to the contract and not paid for separately, but included in the various bid items.
6. If large rocks or boulders are encountered during excavation for this project, these boulders shall be removed. The cost of removing these rocks or boulders will not be paid for directly but shall be included in the cost of Common Excavation.

7. Excavation of flexible type pavement shall be included in the cost of Common Excavation.
8. Excavation of brick pavers shall be included in the cost of Common Excavation. Bricks removed from the Bartlett Street and Main Street intersection, shall be stored in a secure location by the Contractor until they are needed for reuse in the event of existing brick replacement during the installation of the storm sewer at the corner of Park Land and Main Street.
9. Topsoil shall be spread on all slopes and disturbed areas to a depth of 4 inches.
10. All topsoil on the site shall be stockpiled and re-used. The cost for removal, stockpiling and re-use will not be paid for directly but shall be included in the cost of Common Excavation.
11. The Contractor shall field verify the location of all utilities prior to beginning work.
12. Common Excavation will be paid for at the contract unit price for "Excavation, Common...CYS" as indicated on the itemized proposal sheet.

LXII. TEMPORARY EROSION CONTROL MEASURES

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 205
- B. Additions:
 1. The measures outlined in the plans and the Stormwater Pollution Prevention Plan (SWPPP) (See Appendix D.) shall be indicative of the minimal effort required of the Contractor for the work. The Contractor shall make every reasonable effort to protect the site from erosion and sedimentation in storm water runoff from leaving the site or entering storm inlets.
 2. The Contractor shall inspect the site for erosion and perform required maintenance of temporary erosion control measures as indicated on the Plans and in the SWPPP. Inspection and maintenance of such measures shall be considered incidental to the project.
 3. The Contractor shall submit bi-weekly inspection reports to St. Joseph County SWCD and to the Owner. Contractor shall also submit inspection reports after each rain event.
 4. Temporary erosion control measures shall be removed once the upslope areas draining to the temporary erosion control measure have reached final grade and are stabilized.
 5. Maintenance of and sediment removal from erosion control measures shall not be measured directly but shall be included in the cost of the pay items.
 6. The Contractor shall be responsible for contacting any agencies as required by their permit.
 7. The Contractor is responsible to minimize atmospheric pollution and fugitive dust by temporary seeding, mulching, and/or watering. The Contractor is subject to all City of South Bend ordinances, State and Federal laws and fines associated with providing adequate dust control resulting from the work.
 8. Temporary erosion control shall be in accordance with INDOT and local agency standard specifications and details. The Contractor shall maintain a gravel base at all proposed

entrances to the construction site in order to keep mud and soil from reaching the existing roadways and storm inlets. The Contractor shall erect and maintain silt fencing along key areas of perimeter of the construction site. Wind erosion protection shall be provided and maintained for all stockpiles and mounds. Remove existing vegetation and stockpile native soils onsite.

9. The Contractor shall schedule excavation and grading efforts/activities to allow for proper re-vegetation/seeding prior to the winter months.
10. Prior to commencing work, the Contractor shall prepare and submit to the Engineer for approval a Storm Water Pollution Plan that includes, at a minimum, the following items:
 - a. Locations of all proposed soil stockpiles, borrow areas, or disposal areas.
 - b. Locations of all proposed vehicle and equipment parking areas, vehicle and equipment fueling locations, placement of the site construction trailers, location of all onsite batch plants, and designated concrete truck washout areas.
 - c. Location of all construction entrances where vehicles and equipment will enter and exit the site.
 - d. Material handling and spill prevention plan, which shall include a list of expected materials that may be present on the site during construction operations, as well as a written description of how these materials will be handled to minimize the potential that the materials may enter storm water runoff from the site.
 - e. Statement that the erosion control measures for the project will, at a minimum, be inspected on a weekly basis and within 24-hours of every ½ inch rain event.

LXIII. TEMPORARY EROSION AND SEDIMENT CONTROL, DROP INLET PROTECTION

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 205
- B. Additions:
 1. Product for temporary drop inlet protection for erosion and sediment control shall be FlexStorm Inlet Filter by Inlet & Pipe Protection, Inc. or approved equal.
 2. The cost of Temporary Erosion and Sediment Control, Drop Inlet Protection shall include the removal and disposal of sediment, as directed by the project representative. If the FlexStorm Inlet Filter is damaged during construction of this project either by normal use, remaining sediment or vandalism, it shall be replaced at no cost to the city.
 3. Temporary Erosion and Sediment Control, Drop Inlet Protection will be paid for at the contract unit price for "Temporary Erosion and Sediment Control, Drop Inlet Protection ...EACH" as indicated on the itemized proposal sheet.

LXIV. TEMPORARY EROSION AND SEDIMENT CONTROL, SILT FENCE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 205
- B. Additions:
 1. Temporary Silt Fence will be paid for at the contract unit price for "Temporary Silt Fence...LFT" as indicated on the itemized proposal sheet.

LXV. STRUCTURE EXCAVATION

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 206

B. Additions:

1. Structure excavation shall not be measured directly, but shall be included in the cost of the various other pay items.

LXVI. BORROW AND BACKFILL

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 211

B. Additions:

1. The Contractor shall furnish all the necessary equipment, labor and materials to complete backfill of excavations with approved Borrow material.
2. The Contractor shall test the existing material and document that it is acceptable for use as structure backfill. Once satisfactory test results have been received, the Engineer may visually approve excavated material for use as structure backfill, or request additional analyses. It is anticipated that there will be enough excavated soil that meets the specified requirements for structure backfill (904.05) and that additional structure backfill will not be required; however an undistributed quantity for Structure Backfill has been included in the Contract. See Special Provision **XXXI** for additional details.
3. The cost of providing Borrow for backfill and Structure Backfill, wasting or stockpiling excavated materials testing or excavated materials and the compaction of the backfill material shall not be paid for separately but shall be included in the cost of various other pay items. Payment for structure backfill obtained from an off-site source will be made at the Unit Price set forth in the Proposal for STRUCTURE BACKFILL, TYPE ____ (CYS).

LXVII. COMPACTED AGGREGATE

A. Prevailing Specifications: City of South Bend Design and Construction Standards / 2016, INDOT Standard Specifications Section 301

B. Additions:

1. All coarse aggregate shall be Class D or higher of the specified size. The cost of placing, compacting, water and necessary incidentals shall be included in the cost of the compacted aggregate.
2. The use of slag and local aggregate shall not be allowed.
3. The depth of compacted aggregate shall be 6-inches below proposed pavement and drives. Quantity shall be based on plan neat lines.
4. Plan quantities are based on an assumed compacted density of 1.9 tons/cubic yard.
5. Payment for compacted aggregate for construction entrance, pipe and structure bedding will be considered incidental to furnishing and installing the respective Pay Item.
6. The condition of the subgrade at the time paving material is placed is required to be in accordance with INDOT Standard Specifications 105.03 and 207.03.
7. Prior to placing the base course of asphalt on the prepared aggregate subgrade, proof rolling in accordance with INDOT Standard Specifications 203.09 and 203.26 is required.

LXVIII. SURFACE MILLING, ASPHALT

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 306
- B. Additions:
 - 1. The minimum depth of surface milling shall be according to the plans or as directed by the Engineer.
 - 2. All areas of surface milling shall be established by the Engineer and the Contractor prior to the commencement of work.
 - 3. Surface Milling, Asphalt will be paid for at the contract unit price for "Surface Milling, Asphalt...SYS" as indicated on the itemized proposal sheet.
 - 4. Profile milling and Approach Milling will not be measured for payment separately and shall be included in the cost of other pavement milling items.

LXIX. PAVEMENT REMOVAL FOR HMA WIDENING

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 304
- B. Additions:
 - 1. Pavement to be removed as shown on the plans shall be saw cut in neat lines at removal limits for full depth prior to removal. Saw cutting for removal shall not be measured for pavement but shall be considered incidental to the Contract.
 - 2. The cost of excavation and disposal of existing materials, including existing composite or asphalt pavement, required for the compacted aggregate or HMA widening material shall be included in the cost of the HMA widening material.
 - 3. Replacement of pavement damaged by the Contractor's operations shall be at no additional payment.

LXX. QC/QC HOT MIX ASPHALT

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 401
- B. Additions:
 - 1. The HMA Surface course shall not be placed until all new pavement areas within the project limits, including mainline, approaches, and areas of incidental construction, have been completed and are ready, in the opinion of the Engineer, for the HMA Surface course.
 - 2. The additional cost of coordinating the placement of the surface shall be included in the unit cost for HMA Surface as set out in the Itemized Proposal and Declarations.
 - 3. For each day that 25 tons or more of hot asphaltic material is used, the Contractor must have gradation and bituminous content tests for each kind of mix used. Copies of INDOT plant mix inspection reports will be acceptable. Also, Compaction Tests will be required to be run daily in which there will be a minimum of three (3) field density determinations for each kind of material by Nuclear Density Testing. The average of these three density

determinations should be equal to or greater than 96 percent of the average test section density and no individual determination shall be lower than 95 percent. When compaction of any course of bituminous mixtures is controlled by density, two test strips shall be constructed in accordance with Indiana Test Method No. 577.

4. HMA Patching shall be installed at the direction of the Engineer in order to address deteriorated pavement conditions prior to or resulting from detour routes along lower classification streets. An undistributed quantity of HMA Patching has been included in the Contract. See Special Provision **XXXI** for additional details.
5. Original weight tickets shall be provided to the Owner for each day on which asphalt is placed. The Owner reserves the right to require certified scales be used to measure the above noted Pay Items at no additional cost to the Contract.

LXXI. HOT MIX ASPHALT PAVEMENT

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 402
- B. Additions:
 1. No vehicular traffic of any kind shall be permitted on any lift until the mixture has hardened sufficiently to not be unduly distorted.
 2. Only coarse limestone will be used for the course aggregate.
 3. The use of rap or asphalt shingles will not be allowed.

LXXII. TACK COAT

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 406
- B. Additions:
 1. Previously laid HMA courses, as well as any pavement that has become dirty, shall be cleaned and tacked prior to the placement of additional HMA courses.
 2. The accepted quantities of ASPHALT FOR TACK COAT will be paid for at the contract unit price per ton (TON), complete in place. If the Contractor exceeds the restoration/pavement limits shown on the Plans, the associated costs of the overrun will be absorbed by the Contractor.

LXXIII. QC/QA PLAIN CEMENT CONCRETE PAVEMENT

- A. Prevailing Specifications: City of South Bend Design and Construction Standards / 2016, INDOT Standard Specifications Section 500
- B. Additions:
 1. The Contractor shall furnish all necessary equipment, labor and materials required to complete the QC/QA plain cement concrete pavement for the thickness specified as shown on the Plans.
 2. Construction joints shall be placed and sealed in accordance with the City of South Bend Standards, incidental to concrete pavement work item.

LXXIV. PCCP, PLAIN

- A. Prevailing Specifications: INDOT 2014 Standard Specifications Section 502
- B. Additions:
 - 1. The use of slag or local aggregate will not be permitted.
 - 2. The bid item shall include, but not be limited to, all cost for labor, materials, tools, equipment, excavation, backfilling, compaction, forming, saw cutting, joint construction, curing, smoothness, tining, etc. per current INDOT standard details for 9" & 10" concrete pavement.
 - 3. Incidental concrete pavement transverse and longitudinal joint construction shall be performed in accordance with current INDOT Standard Detail Drawings E 503-CCPJ-OI thru E 503-CCPJ-08.
 - 4. The bidder is responsible for obtaining these Standard Detail Drawings prior to bidding. The Standard Detail Drawings are available from the Engineer prior to the bid and on the INDOT website.
 - 5. Transverse and longitudinal joint spacing shall be as per the plan drawings.
 - 6. Concrete pavement joints shall be placed as approved by the City. Additional pavement joints shall be incidental to the work as directed by the City to match into curb joints, drive approach pavement joints, castings, etc. Joints for separate pavement construction around castings shall be incidental as directed by the City.
 - 7. The mainline concrete pavement (PCCP) section shall consist of nine (9) inches and ten (10) inches of plain concrete over six (6) inches of No. 53, aggregate over compacted subgrade. The concrete mix shall be developed from crushed limestone aggregate. The concrete shall have a minimum of 6 bags of cement per cubic yard of concrete, and shall reach 4000 psi in 28 days as verified by the Contractor's testing of cylinders or flex beams from each individual pour (a minimum 3 test samples per pour).
 - 8. The subbase material shall be adequately pre-moistened immediately before the pour to reduce the amount of moisture drawn from the concrete.
 - 9. The Contractor shall provide job mix formula information including admixtures to the City for approval sufficiently in advance of the work.
 - 10. Concrete mixing and transportation shall be completed transit mixed methods. Discharge from a truck agitator or a truck mixer shall be completed within 90 min of mixing the water, cement, and aggregates. Concrete shall be uniformly mixed when delivered to the job site. Batch tickets for each load of concrete shall indicate the weight of cement and aggregates, volume of water, and the type and amount of any approved admixtures. When concrete is delivered in transit mixers, additional water to increase the workability of a load may be added within 45 minutes of initial mixing only as approved in each case by the City. Following any and all adding of water at the site, the concrete shall be thoroughly mixed and tested for slump before being incorporated into the work. Any addition of water shall be noted on the batch ticket and shall not occur as a continuing operation. Concrete with water added after leaving the plant must have a slump of less than or equal to 4.0 inches to be incorporated into the work. Concrete exceeding 4" slump shall not be used for pavement on the project.
 - 11. Contraction joints shall be neatly sawed as per INDOT standards at spacing as directed.

12. The Contractor shall be responsible for correcting any surface smoothness defects as deemed necessary by the City at the Contractor's expense.
13. The Contractor shall take steps to avoid vandalism of the work, including the timing of pours, providing of a night watchman, etc. There will be no direct payment for this work.
14. The Contractor shall be responsible for repair and/or replacement of cracked or vandalized pavement at locations and by methods as deemed appropriate by the City.
15. Concrete approach pavement shall be as per INDOT Standard Specifications and Standard Detail Drawings, including joints, curing, etc., and as otherwise directed by the City.
16. Longitudinal slopes on approaches shall be no greater than 8.33%.
17. PCCP, Plain, will be paid for at the contract unit price for "PCCP, Plain, (thickness) in...SYS" as indicated on the itemized proposal sheet.

LXXV. PCCP, COLORED

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 502
- B. Additions:
 1. This work shall consist of placing concrete and applying color and pattern to the surface of the roundabout truck apron, splitter islands, and other concrete pavement areas, in reasonably close conformance with the lines and grades shown on the plans or as directed.
 2. The use of slag or local aggregate will not be permitted.
 3. The bid item shall include, but not be limited to, all cost for labor, materials, tools, equipment, excavation, backfilling, compaction, forming, saw cutting, joint construction, curing, smoothness, finish, etc. per current INDOT standard details for 6", 8" & 10" concrete pavement.
 4. Incidental concrete pavement transverse and longitudinal joint construction shall be performed in accordance with current INDOT Standard Detail Drawings E 503-CCPJ-OI thru E 503-CCPJ-08.
 5. The coloring material shall be applied at full depth of PCCP, and shall be Chromix Admixture by Scofield, or approved equal.
 - a. Color shall be "Brownstone" (#1010) for crosswalks and truck aprons, "Chicory Spice" (#1078) for upper concrete aprons in center of roundabout.
 - b. Curing compound shall be as recommended by color material manufacturer.
 6. The Contractor shall provide color samples with specified finish for approval by the Owner in advance of ordering the material. All work shall be done in accordance with the color material manufacturer's recommendations.
 7. The work shall be done in accordance with the typical pavement section detail on the plans. The pour for crosswalks shall be the 10" thick, 8" thick for truck apron and 6" thick for the upper concrete apron located above the truck apron, poured monolithically. The pavement shall include full depth colored concrete.

8. The Contractor shall be responsible for providing sufficient support material for approval by the City in advance of the work for any proposed alternate colored concrete product. All work including but not limited to surface preparation, mixing of coloring materials, bonding agent, weather conditions, curing, etc. shall be done in accordance with the manufacturer's recommendations. The Contractor shall provide copies of the manufacturer's recommendations to the City prior to the work.
9. The established pay item shall include all incidental items as shown on the typical detail, including, but not limited to reinforcing steel, all concrete work, finishing, curing, protection of concrete, and clear coat per manufacturers recommendations for high traffic applications.
10. The colored concrete work shall be constructed by a foreman and skilled labor with experience in completing at least 3 colored and stamped installations of high quality, using the specific products, and of similar or larger scope as compared to this project.
11. The Contractor shall be responsible for providing uniform coloring of concrete within portions of individual pours and within separate pours throughout the project. Any colored concrete portions deemed to not be uniform by the City shall be removed and replaced promptly at the Contractor's expense.
12. The Contractor shall provide consistent, uniform PCCP coloring to the Owner's satisfaction throughout the project limits. The Contractor shall be responsible for all costs associated with removal and reconstruction of the work as deemed by the Owner to be inaccurately or inconsistently colored.
13. The Contractor shall The Contractor shall construct a mock-up sample for the Engineer's approval of each pattern at least 2 weeks prior to beginning the colored concrete work. At a location on the project site selected by the Engineer, the Contractor shall place and finish a 4 foot by 4 foot area sufficient to demonstrate typical joints, joint sealer, surface finish, texture, pattern and color using the processes and techniques intended for use on the permanent work, including curing procedures. If the Engineer determines the sample does not meet requirements, the Contractor shall demolish and remove it from the site and repeat until a sample is approved. The sample shall be produced by the workers who will be performing the work for this project. The approved mock-up sample will provide a visual standard for the work and shall remain in place through the completion of the work for use as a quality standard for finished work.
14. PCCP, Colored, will be paid for at the contract unit price for PCCP, COLORED, (thickness) IN (SYS) as indicated on the itemized proposal sheet.
15. The cost of the mock-up sample, concrete, colored hardener, curing agents, joint sealants, and all other materials and work necessary to complete this work shall be included in the cost of the pay item.

LXXVI. CONCRETE SLEEPER SLAB

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 503
- B. Additions:
 1. Sleeper slab will be measured by the lineal foot, complete and in place.
 2. Furnishing and installing all materials, including but not limited to concrete, reinforcing steel, bond breaker and all appurtenances necessary for a complete installation will not be

paid for separately but shall be included in the cost of the sleeper slab.

3. Payment for sleeper slab will be made at the Unit Prices set forth in the Proposal for SLEEPER SLAB (LFT).

LXXVII. MATERIAL TESTING

- A. Prevailing Specifications: none
- B. Additions:
 1. The Contractor will be responsible for meeting the City's requirements for all Material Testing.
 2. Contractor shall provide copies of all testing reports to Owner and/or Owner's Representative.
 3. Material Testing shall not be measured for pavement but shall be included in the cost of the pay items being tested.

LXXVIII. CONCRETE SIDEWALKS AND CURB RAMPS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 604
- B. Additions:
 1. Expansion joints shall be placed at a maximum spacing of forty (40) feet and at any additional places as shown on the City of South Bend "Design and Construction Standards". Payment for joint material for sidewalk and curb ramps will be included in the unit price for the respective Pay Item.
 2. Transverse control joints shall be placed at equal intervals not to exceed five (5) feet or as shown on the plans.
 3. Any existing walks on private property that lead to the City's sidewalk shall match the grade of the replaced sidewalk. The method of grade equalization will be determined by the Engineer.
 4. The use of slag or local aggregate will not be permitted.
 5. Curb ramps shall include "EZ-Set" ceramic composite detectable warning panels, or approved equal. The cost of the detectable warning panels shall be included with this item.
 6. Transverse grooving as shown on INDOT Standard Drawings shall not be applied to concrete curb ramps installed as part of the Project.
 7. Modified concrete curb ramps shall be constructed in accordance with the INDOT Standard Drawings expect as modified as shown on the plans or as noted herein.
 8. Curb ramp pay limits will be behind the curb and will include the 12:1 ramp(s), the 2% landing, and optional curb at back of ramp, Curb ramp pay limits will include flared sides only if the flared sides are to be constructed in concrete as shown on the plans. No additional payment will be made for the depressed curb, but will be paid for as the adjacent type of curb.
 9. The accepted quantities of concrete curb ramps will be paid for at the contract unit price

per square yard for CURB RAMP, CONCRETE, TYPE as indicated on the itemized proposal sheet, complete in place.

10. The accepted quantities of modified concrete curb ramps will be paid for at the contract unit price per square yard for CURB RAMP, CONCRETE, TYPE as indicated on the itemized proposal sheet, complete in place.
11. The accepted quantities of concrete curb ramps which do not conform to types designated by INDOT will be paid for at the contract unit price per square yard for CURB RAMP, CONCRETE, OTHER as indicated on the itemized proposal sheet, complete in place.
12. The accepted quantity of decorative 5 inch concrete sidewalk will be paid for at the contract unit price per square yard for CONCRETE SIDEWALK, 5", DECORATIVE as indicated on the itemized proposal sheet, complete in place.

LXXIX. CONCRETE CURBS

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 605

B. Additions:

1. The use of slag or local aggregate will not be permitted.
2. Expansion material is required at all cold joints.
3. Transverse control joints shall be placed at equal intervals not to exceed ten (10) feet in standard curb.
4. The new curb height will be adjusted during the last ten (10) feet to match the existing curb profile.
5. Curb, as a pay item, stops at the commencement of any concrete approach. For a concrete approach with a wing, this is at the beginning of the wing. For an approach with a radius, the approach ends and the curb begins at the tangent point of the radius of the approach and the curb line.
 - a. Running a curb slip forming machine through a concrete approach will not be considered in the quantity for curb.
6. Any areas disturbed not designated for sod or outside of the construction limits during the removal or replacement of the curb shall be restored to original or better condition. All costs associated with restoration should be included in the unit price for the concrete curb.
7. See the plans for the curb details to be used on this project.
8. The Contractor shall backfill with topsoil an excavated area behind the curb, required to install the curb.
9. All curb shall be placed with a maximum allowable horizontal tolerance of 0.25 inch. Any curb that exceeds this tolerance shall be removed and replaced at the Contractor's expense.
10. Concrete Curb will be paid for at the contract unit price for "Curb, Concrete...LFT" as indicated on the itemized proposal sheet.
11. Concrete Curb and Gutter B will be paid for at the contract unit price for "Curb and Gutter,

B, Concrete...LFT” as indicated on the itemized proposal sheet.

12. Modified Integral Concrete Curb, Type B (Mountable) will be paid at the contract unit price per linear foot for CURB, INTEGRAL, B, CONCRETE, MODIFIED as indicated on the itemized proposal sheet, complete in place.

LXXX. CONCRETE HEADER

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 605

B. Additions:

1. This work shall consist of constructing a cast in place cement concrete header flush to the surface of adjacent pavement in reasonably close conformance with the lines, grades and details shown on the plans and in accordance with the requirements set out herein.
2. Materials shall be in accordance with 605.02 of the INDOT Standard Specifications. Concrete, Class A shall be used. The use of slag or local aggregate will not be permitted.
3. Excavation, forms, mixing, placement, joints, and curing shall be in accordance with 605.04 of the INDOT Standard Specifications, except without curbing above the upper surface elevation of the adjoining pavement.
4. The accepted quantities of concrete header work will be measured by the linear foot along the front face of the header at the finished grade elevation and will be paid for at the contract unit price per linear foot for HEADER, CONCRETE as indicated on the itemized proposal sheet.

LXXXI. MOW STRIP, CONCRETE

A. Prevailing Specifications: None

B. Additions:

1. Shall be Class A Concrete
2. The use of slag or local aggregate will not be permitted.
3. Mow Strip, Concrete will be paid for at the contract unit price per linear foot for MOW STRIP, CONCRETE as indicated on the itemized proposal sheet.

LXXXII. DECORATIVE PERMEABLE BRICK PAVERS

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 610

B. Additions:

1. This work shall consist of constructing a paver inlay in reasonably close conformance with the lines, grades and details shown on the plans and in accordance with manufacturer specifications and the requirements set out herein.
2. Materials shall be in accordance with the following:
 - a. Permeable Paver Type 'A'

- (i) Paver units shall be Eco-Priora, Permeable brick pavers by Unilock or approved substitute
 - (ii) Size: 9.45" x 4.72" x 3.15"
 - (iii) Color: Heritage Brown
 - (iv) Finish: 3000 Exposed Aggregate Finish
- b. Permeable Paver Type 'B'
- (i) Paver units shall be Eco-Priora, Permeable brick pavers by Unilock or approved substitute
 - (ii) Size: 9.45" x 9.45" x 3.15"
 - (iii) Color: Heritage Brown
 - (iv) Finish: 3000 Exposed Aggregate Finish
- c. Where partial bricks are needed to complete a pattern, said partial bricks shall be cut in conformance with manufacturer recommendations.
- d. Partial bricks of less than 2 inches in length or 2 inches in width shall not be used, but the contractor shall utilize a "double" brick size of either twice the nominal length or width and cut as needed. Double bricks shall match the appearance of two single bricks laid end-to-end in pattern, finish, and color.
- e. Permeable Joint Opening Aggregate
- (i) Provide Permeable Joint Opening Aggregate materials conforming to ASTM C 33 and gradation requirements of ASTM D 448 No. 8 as follows:

**ECO-OPTILOC
PERMEABLE JOINT OPENING AGGREGATE
GRADATION REQUIREMENTS
(CRUSHED LIMESTONE)**

ASTM No. 8	
Sieve Size	Percent Passing
1/2 in (12.5 mm)	100
3/8 in (9.5 mm)	85 to 100
No. 4 (4.75 mm)	10 to 30
No. 8 (2.36 mm)	0 to 10
No. 16 (1.18 mm)	0 to 5

- a. Permeable Setting Bed Aggregate
- (i) Provide Permeable Setting Bed Aggregate materials conforming to ASTM C 33 and gradation requirements of ASTM D 448 No. 8 as follows:

**PERMEABLE SETTING BED AGGREGATE
GRADATION REQUIREMENTS**

ASTM No. 8	
Sieve Size	Percent Passing
½ in (12.5 mm)	100
3/8 in (9.5 mm)	85 to 100
No. 4 (4.75 mm)	10 to 30
No. 8 (2.36 mm)	0 to 10

No. 16 (1.18 mm)	0 to 5
------------------	--------

- b. Geo-textile fabric: As supplied by Unilock or approved equal.
3. 5"x10" pavers shall be laid in a herringbone pattern with 10"x10" soldier course borders as shown on the plans. 5"x10" soldier course borders shall be laid around tree grates as shown on the plans. The pavers shall be laid in such a manner that the observed pattern is maintained and the joints between the pavers do not exceed 0.32 cm. The gaps at the edge of the paved surface shall be filled with standard edge pieces or with pavers cut to fit. The pavers shall be cut to a straight, even surface without cracks or chips.
4. Installation shall be in accordance with the following:
- a. Mix pavers from a minimum of three (3) bundles simultaneously drawing the paver vertically rather than horizontally, as they are placed, to produce uniform blend of colors and textures.
 - b. Provide Permeable Concrete Pavers using joint pattern as indicated on plans. Adjust joint pattern at pavement edges such that cutting of edge pavers is minimized. Cut all pavers no smaller than one-third of a whole paver.
 - c. Fill gaps between units or at edges of the paved area that exceed 3/8 inch (10 mm) with pieces cut to fit from full-size unit pavers.
 - d. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
 - e. Use string lines or chalk lines on Permeable Setting Bed aggregate to hold all pattern lines true.
 - f. Place units hand tight against spacer bars. Adjust horizontal placement of laid pavers to align straight.
 - g. All cutting of pavers or special paver placement to fit with castings or other features as directed by the City shall be incidental to the cost of the work.
 - h. Vibrate pavers into leveling course with a low-amplitude plate vibrator capable of a to 5000-lbf (22-kN) compaction force at 80 to 90 Hz. Perform at least three passes across paving with vibrator. Vibrate under the following conditions:
 - (i) After edge pavers are installed and there is a completed surface.
 - (ii) Compact installed concrete pavers to within 6 feet (1,800 mm) of the laying face before ending each day's work. Cover pavers that have not been compacted and leveling course on which pavers have not been placed, with nonstaining plastic sheets to prevent Permeable Setting Bed Aggregate from becoming disturbed.
 - i. Remove any cracked or structurally damaged pavers and replace with new units prior to installing Permeable Joint Opening Aggregate material.
 - j. Provide, spread and sweep Permeable Joint Opening Aggregate into joints immediately after vibrating pavers into Permeable Setting Bed course until full. Vibrate pavers and add Permeable Joint Aggregate material until joints are

completely filled, then remove excess material. This will require at least 4 passes with a plate compactor.

- k. After the final vibrating, the surface shall be true to grade and shall not vary by more than 1/4 inch when tested with a 3-foot straight edge at any location on the surface.
 - l. Remove all debris from joints and provide additional Permeable Joint Aggregate material after 120 days and before 150 days after date of Substantial Completion.
5. Decorative permeable brick pavers system will be measured by the square yard, complete in place.
 6. Excavation, backfill, subgrade preparation, furnishing and installing the completed aggregate base, pervious concrete pavement, filter fabric, leveling course, labor, materials, and all necessary incidentals shall be included in the cost of brick pavers.
 7. All cutting of pavers or special paver placement to fit with castings or other features as directed by the City shall be incidental to the cost of the work.
 8. The accepted quantity of decorative brick will be paid for at the contract unit price per square yard for DECORATIVE BRICK, PERMEABLE as indicated on the itemized proposal sheet.

LXXXIII. DECORATIVE BRICK PAVERS (NON-PERMEABLE)

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 610
- B. Additions:
 1. This work shall consist of constructing a paver inlay in reasonably close conformance with the lines, grades and details shown on the plans and in accordance with manufacturer specifications and the requirements set out herein.
 2. Materials shall be in accordance with the following:
 - a. Decorative Paver Type 'A'
 - (i) Paver units shall be Il Campo, Concrete pavers by Unilock or approved substitute
 - (ii) Size: 11.81" x 11.81" x 2.76"
 - (iii) Color: Heritage Brown
 - (iv) Finish: 3000 Exposed Aggregate Finish
 - b. Permeable Paver Type 'B'
 - (i) Paver units shall be Il Campo, Concrete pavers by Unilock or approved substitute
 - (ii) Size: 7.87"x3.94"x 2.76"
 - (iii) Color: Heritage Brown
 - (iv) Finish: 3000 Exposed Aggregate Finish
 - c. Where partial bricks are needed to complete a pattern, said partial bricks shall be cut in conformance with manufacturer recommendations.
 - d. Partial bricks of less than 2 inches in length or 2 inches in width shall not be used, but the contractor shall utilize a "double" brick size of either twice the nominal length or width and cut as needed. Double bricks shall match the appearance of two single bricks laid end-to-end in pattern, finish, and color.
 - e. Joint Sand

- (i) Provide natural Joint Sand as follows:
 - (i) Washed, clean, non-plastic, free from deleterious or foreign matter, symmetrically shaped, natural or manufactured from crushed rock.
 - (ii) Reject limestone screenings, stone dust, or sand for the Joint Sand material that does not conform to the grading requirements of ASTM C 33.
 - (iii) Utilize sands that are as hard as practically available where concrete pavers are subject to vehicular traffic. Gradation as follows:

GRADATION REQUIREMENTS FOR JOINT SAND

ASTM C 144		
Sieve Size	Natural Sand Percent Passing	Manufactured Sand Percent Passing
No. 4 (4.75 mm)	100	100
No. 8 (2.36 mm)	95 to 100	95 to 100
No. 16 (1.18 mm)	70 to 100	70 to 100
No. 30 (0.600 mm)	40 to 75	40 to 75
No. 50 (0.300 mm)	10 to 30	20 to 40
No. 100 (0.150 mm)	2 to 15	10 to 25
No. 200 (0.075)	0 to 1	0 to 10

f. Neoprene Tack Coat

- (i) Karnak 230 2% neo-asphalt paving block adhesive
 - (i) Only apply enough Neoprene Tack Coat to completely cover the Bitumen Setting Bed. Applying an excessive amount of Neoprene Tack Coat can cause the material to expand during summer months and ooze up through the paver joint damaging the paver surface. Damage to the paver surface will be replaced to the Owner's satisfaction at Contractor's expense.

g. Bituminous Setting Bed Materials

- (i) Sand for asphalt bed:
 - (i) Clean, non-plastic, free from deleterious or foreign matter, symmetrically shaped, natural or manufactured from crushed rock.
 - (ii) Graded according to ASTM C 136.
- (ii) Asphalt Cement:
 - (i) Provide Asphalt Cement used in the bituminous setting bed conforming to ASTM D 946 with a penetration at 77 degrees F. 100G., 5 sec of minimum 85 millimetres and a maximum of 100 millimetres.
 - (ii) Combine the dried fine aggregate with hot asphalt cement, and heat the mix to approximately 300 degrees Fahrenheit (150° C), at an asphalt plant. Mix

the approximated proportion of materials including 7% asphalt cement and 93% fine aggregate. Proportioned by weight each ton of the batch in the approximate ratio of 145 lbs (66 kg) asphalt to 1,855 lbs (840 kg) sand.

- (iii) Primer for base:
 - (i) Anionic asphalt emulsion SS-1h, per ASTM D 977.
- h. Metal Edge Restraints:
 - (i) Permaloc, Aluminum edge restraints
- 3. 4"x8" pavers shall be laid in a herringbone pattern with 12"x12" soldier course borders as shown on the plans. The pavers shall be laid in such a manner that the observed pattern is maintained and the joints between the pavers do not exceed 0.32 cm. The gaps at the edge of the paved surface shall be filled with standard edge pieces or with pavers cut to fit. The pavers shall be cut to a straight, even surface without cracks or chips.
- 4. Installation shall be in accordance with the following:
 - a. Apply Bitumen Setting Bed Asphalt primer to Cast-in-Place Concrete Underlayment to bond the bituminous bedding material to the concrete base.
 - b. Place bituminous setting bed in panels between 3/4 inch (20 mm) high screed rails spaced approximately 12 ft (4 m). Set the depth screed rails carefully to bring the Bitumen Bedding material to proper grade, to insure proper Concrete Paver finished height. Place Bitumen Bedding material between the parallel screed rails. Rake and screed smooth with strike board. Fill any depressions with fresh bituminous material to produce a smooth, firm and even setting bed after each pass.
 - c. Use screed rails to achieve a level setting bed conforming to elevations and slope shown on the drawings. After one panel is completed, advance screed rails to the next position in readiness for screeding adjacent panels with strike board. Fill depressions left from removed screed rails and smooth to height consistent with panel.
 - d. Place an area in size that will remain at least 270° F (130° C) during compaction.
 - e. Compact the Bitumen Setting Bed with a powered roller compactor to an even, nominal thickness of 3/4 inch (20 mm) after compaction while still hot. Adjust the Bitumen Setting Bed to accommodate the required finished grade of the Concrete Pavers. Proper attention to elevations during the construction of the concrete base material will insure maintaining the required nominal 3/4 inch thick Bitumen Setting Bed.
 - f. Re-heat, fill, and compact low areas with Bitumen Setting Bed materials to conform to slope and elevation shown on the drawings.
 - g. Re-heat, remove, level, and compact Bitumen Setting Bed in high areas to conform to slope and elevation shown on the drawings.
 - h. Correct irregularities or evenness in the grade of the concrete base surface with Setting Bed materials only.
 - i. Apply neoprene asphalt adhesive to cold asphalt setting bed with notched trowel with serrations not exceeding 1/16 inch (2 mm). Do not apply pavers to adhesive until dry

skin forms on surface of adhesive, approximately 2-3 hours depending on air temperature.

- j. Provide metal edge restraints as indicated:
 - (i) Provide plastic or metal edge restraints along the perimeter of all paving as indicated and supported on a minimum of 6 inches (150 mm) of Base Aggregate.
 - (ii) Provide 10" spiral galvanized or stainless steel spike to fasten edge restraint at 24 inches on center for straight sections and 12 inches on center for curved sections.
- k. Mix Pavers from a minimum of three (3) bundles simultaneously drawing the paver vertically rather than horizontally, as they are placed, to produce uniform blend of colors and textures.
- l. Provide Decorative Pavers using joint pattern as indicated on plans. Adjust joint pattern at pavement edges such that cutting of edge pavers is minimized. Cut all pavers no smaller than one-third of a whole paver.
- m. Fill gaps between units or at edges of the paved area that exceed 3/8 inch (10 mm) with pieces cut to fit from full-size unit pavers.
- n. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
- o. Use string lines or chalk lines on Setting Bed sand to hold all pattern lines true.
- p. Place units hand tight against spacer bars. Adjust horizontal placement of laid pavers to align straight.
- q. All cutting of pavers or special paver placement to fit with castings or other features as directed by the City shall be incidental to the cost of the work.
- r. Vibrate pavers into leveling course with a low-amplitude plate vibrator capable of a to 5000-lbf (22-kN) compaction force at 80 to 90 Hz. Perform at least three passes across paving with vibrator. Vibrate under the following conditions:
 - (i) After edge pavers are installed and there is a completed surface.
 - (ii) Compact installed concrete pavers to within 6 feet (1,800 mm) of the laying face before ending each day's work. Cover pavers that have not been compacted and leveling course on which pavers have not been placed, with non-staining plastic sheets to prevent Permeable Setting Bed Aggregate from becoming disturbed.
- s. Remove any cracked or structurally damaged pavers and replace with new units prior to installing Permeable Joint Opening Aggregate material.
- t. Provide, spread and sweep dry Joint Sand into joints immediately after vibrating pavers into Tack Coat and Bitumen Setting Bed course until full. Vibrate pavers and add Joint Sand material until joints are completely filled, then remove excess material. This will require at least 4 passes with a plate compactor.
- u. After the final vibrating, the surface shall be true to grade and shall not vary by more than 1/4 inch when tested with a 3-foot straight edge at any location on the surface.

5. Decorative brick pavers system will be measured by the square yard, complete in place.
6. Excavation, backfill, subgrade preparation, furnishing and installing the completed base, leveling course, edge restraints, labor, materials, and all necessary incidentals shall be included in the cost of brick pavers.
7. All cutting of pavers or special paver placement to fit with castings or other features as directed by the City shall be incidental to the cost of the work.
8. The accepted quantity of decorative brick will be paid for at the contract unit price per square yard for DECORATIVE BRICK as indicated on the itemized proposal sheet.

LXXXIV. PCCP FOR APPROACHES

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 610
- B. Additions:
 1. All driveway approaches shall be built according to the details as shown on City of South Bend's "Design and Construction Standards" and as shown on the Plans.
 2. The use of slag or local aggregate will not be permitted.
 3. Tooled joints shall be placed in all driveways to match the sidewalk jointing pattern as shown on the plans or as directed. The cost of providing the tooled joint pattern will not be paid for separately but shall be included in the cost of the driveway.
 4. The accepted quantities of PCCP for approaches will be paid for at the contract unit price per square yard for PCCP FOR APPROACHES, (thickness) IN as indicated on the itemized proposal sheet.

LXXXV. PERMEABLE PAVEMENT

- A. Prevailing Specifications: none
- B. Additions:
 1. This work includes all labor, materials, equipment, and incidentals required and perform all operations in connection with the installation of the permeable pavement in accordance with the lines, grades, design and dimensions shown on the plans, as specified herein, and as directed.
 2. The permeable pavement shall be PaveDrain® as represented by:

LOCAL
 D2 Land & Water Resources
info@d2lwr.com
 PH. (800) 597-2180
www.d2lwr.com

NATIONAL
 PaveDrain, LLC
info@pavedrain.com
 PH. (888) 575-5339
www.pavedrain.com

3. Subgrade shall be prepared in accordance with the plans and Standard Specifications.
4. Geotextile separator material shall be in accordance with the Standard Specifications.
5. No. 8 aggregate material shall be in accordance with the Standard Specifications.

6. Underdrains shall be Type 4 Pipe and installed in accordance with the details shown on the plans and in accordance with the Standard Specifications.
7. Geogrid separator material shall be in accordance with the manufacturer's recommendations.
8. Immediately prior to placing mats, the prepared area shall be inspected by the Engineer. No mats shall be placed thereon until that area has been approved.
9. The mats shall be placed on the geogrid separator so as to produce a smooth plane surface. No individual block within the plane of placed articulating concrete mats shall protrude more than one-quarter of an inch or as otherwise specified by the Engineer.
10. Mats shall be attached to a spreader bar or other conventional device to aid in the lifting and placing of the mats in their proper position by the use of a large, tracked excavator or other appropriate equipment. The equipment used shall be adequate capacity to place the mats without bumping, dragging, or otherwise damaging the aggregate bedding layer. The mats shall be "zippered" together forming a seamless mat to mat connection.
11. Joints do not require backfilling with smaller aggregates or sand in order to function properly. The joints are meant to be left open.
12. Upon completion of the permeable pavement installation, the surface infiltration rate of the pavement shall be verified by ASTM C1701M-09 to confirm the required infiltration rate of the pavement. If the system fails to perform as recommended by the manufacturer, it shall be removed and replaced at no cost to the Owner.
13. The manufacturer's representative shall provide a minimum 36 month maintenance program; including a visual inspection report with photos and a recommended cleaning schedule with the PaveDrain® Vac Head and associated combination sanitation vac truck. Maintenance shall be required when either of the following are reached:
 - a. The surface infiltration rates of more than 75% of the surface area fall below 10% of the rate required by the manufacturer.
 - b. Surface ponding remains for 24 hours in an area larger than 10 square feet.
14. Subgrade treatment will be measured and paid in accordance with the Standard Specifications.
15. The cost of supplying and installing geotextile separator, no. 8 aggregate, underdrains, geogrid separator, permeable pavement mats, 36 month maintenance program and all appurtenances necessary for a complete installation will not be paid for separately, but shall be included in the cost of the permeable pavement.
16. Payment will be made at the Unit Prices set forth in the Proposal for PERMEABLE PAVEMENT (SYS).

LXXXVI. DECORATIVE FENCE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 603.
- B. Additions:
 1. Description:

- a. Work shall include, but shall not be limited to all necessary posts, rails, post caps, and fasteners required to complete the job as described in the plans and specifications.
 - b. Work shall be coordinated with the installation of the modular block retaining walls and cast-in-place concrete retaining walls.
2. Submittals:
- a. Contractor shall submit Manufacturer's catalogue cuts indicating material compliance and specified options.
3. Special Warranty:
- a. Contractor shall provide Manufacturer's standard limited warranty that its ornamental fence system is free from defects in material and workmanship including cracking, peeling, blistering and corroding for a period of twenty (20) years from the date of purchase.
4. Approved Manufacturer:
- a. AMERISTAR FENCE PRODUCTS, or approved equal
1555 N. MINGO ROAD
TULSA, OK 74116
PHONE: 888-333-3422
5. Fence Style:
- a. Fence system to be Montage II Welded and Rackable Ornamental Steel 4' Ht. Majestic 3-rail design. The system shall include all components (i.e., panels, posts and hardware) required.
6. Fence Materials and Finish:
- a. Pickets: Material for pickets shall be 1" square x 14 Ga. Tubing.
 - b. Rails shall be steel channel, 1.75" x 1.75" x .105". Picket holes in the rail shall be spaced 4.715" o.c.
 - c. Posts: Galvanized square steel tubular members manufactured per ASTM A653 having a 45,000 psi yield strength and G90 zinc coating, 0.90 oz/sq.ft. Zinc coating is inside and outside. Posts zinc coated outside and painted inside is unacceptable. Minimum post size is 3" square having 12 gauge wall thickness weighing 4.286 lb/sq.ft.
 - d. Fabrication: Pickets, rails and posts shall be pre-cut to specified lengths. Rails shall be pre-punched to accept pickets. Pickets shall be inserted into the pre-punched holes in the rails and shall be aligned to standard spacing using a specially calibrated alignment fixture. The aligned pickets and rails shall be joined at each picket-to-rail intersection by a fusion welding process.
 - e. Finish: The manufactured panels and posts shall be subjected to an inline electrode position coating process consisting of a multi-stage pretreatment/wash (with zinc phosphate), followed by a duplex application of an epoxy primer and an acrylic topcoat. The minimum cumulative coating thickness of epoxy and acrylic shall be 2 mils (0.058 mm). The color shall be Black.
 - f. The manufactured fence system shall be capable of meeting the vertical load, horizontal

load, and infill performance requirements for Industrial weight fences under ASTM F2408.

7. Examination:

- a. Verify areas to receive fencing are completed to final grades and elevations.
- b. Ensure property lines and legal boundaries of work are clearly established.

8. Installation:

- a. Install fence in accordance with manufacturer's instructions.
- b. Space posts uniformly at 7'8-3/4" (2356 mm) maximum face to face unless otherwise indicated.
- c. Concrete Set Posts: Drill hole in firm, undisturbed or compacted soil. Holes shall have diameter 4 times greater than nominal outside dimension of post, and depths approximately 6" (152 mm) deeper than post bottom. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads. Set post bottom 36" (914 mm) below surface when in firm, undisturbed soil. Place concrete around post in a continuous pour. Trowel finish around posts and slope to direct water away from posts.
- d. Gate Posts and Hardware: Set keepers, stops, sleeves and other accessories into concrete.
- e. Surface mount (wall mount) posts with mounting plates where indicated. Fasten with lag bolts and shields.
- f. Check each post for vertical and top alignment, and maintain in position during placement and finishing operation.
- g. Align fence panels between posts. Firmly attach rail brackets to posts with 1/4" (6 mm) bolt and lock nut, ensuring panels and posts remain plumb.

9. Accessories:

- a. Install post caps and other accessories to complete fence.

10. Cleaning:

- a. Clean up debris and unused material, and remove from site.

11. Method of Measurement:

- a. Decorative Picket Fence for railing or ground mounted fence will be measured by the linear foot of rail or fence provided and installed.

12. Basis of Payment:

- a. The cost of all materials, anchor systems for fence mounted on retaining walls, concrete encasement for ground mounted fence posts, labor, and incidentals will not be paid for separately but shall be included in the cost of Decorative Picket Fence.
- b. Decorative Picket Fence for railing and ground mounted will be paid for at the contract

unit price for DECORATIVE PICKET FENCE (LFT) as indicated in the itemized proposal.

LXXXVII. GABION RENO MATTRESS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 616
- B. Additions:
 - 1. The work shall include all incidentals for materials, labor, grading and placement.
 - 2. The materials shall be in accordance with plan details and notes.
 - 3. The work shall be measured and paid by the SYS completed in place at the contract unit price for "Gabion Reno Mattress....SYS" as indicated on the itemized proposal sheet.

LXXXVIII. LIGHTED BOLLARD

- A. Prevailing Specifications: None.
- B. Additions:
 - 1. This work shall consist of furnishing, and installing decorative, illuminated bollards and all necessary incidentals in in accordance with 105.03.
 - 2. Lighted bollard shall be Sternberg Lighting Parkside Lighted Bollard, 4555LED/3S45TLCA/ML/FHD/BK, black powder coated finish, or approved equal. Foundation for the bollard shall be in accordance with manufacturer recommendations.
 - 3. Power to lighted bollard shall be provided by decorative lighting circuits as shown on the lighting details in the plans.
 - 4. The accepted quantity will be paid for at the contract unit price per each for BOLLARD, DECORATIVE, ILLUMINATED.
 - 5. The cost of furnishing and supplying the material, labor, equipment, foundation, and necessary incidentals shall be included in the cost of this pay item.

LXXXIX. TRASH RECEPTACLE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 622.
- B. Additions:
 - 1. This work shall consist of furnishing, and installing trash receptacles and all necessary incidentals in locations as shown on the plans and in accordance with 105.03.
 - 2. Trash Receptacle shall be Forms and Surfaces Dispatch Litter Receptacle, SLDIS-136, black powdercoat finish or approved equal.
 - 3. Trash receptacles shall be surfaced mounted in accordance with manufacturer's installation specifications.
 - 4. Trash receptacle will be measured by each furnished and installed complete in place.
 - 5. The accepted quantity of benches will be paid for at the contract unit price per each for

TRASH RECEPTACLE.

6. The cost of furnishing and supplying the material, labor, equipment, foundation, and necessary incidentals shall be included in the cost of this pay item.

XC. TREE GRATE

A. Prevailing Specifications: None.

B. Additions:

1. This work shall consist of furnishing, and installing tree grates and all necessary incidentals in locations as shown on the plans and in accordance with 105.03.
2. Tree grates shall be 5'x5', Neenah R-8713, foundry finish or approved equal in accordance with ASTM A-48, Class 35 or better.
3. Grates shall be installed with Neenah frame R-8500-P, or approved equal. The cost of the frame shall be included in the cost of the item 'Tree Grate'.
4. Tree grates will be measured by each furnished and installed complete in place.
5. The accepted quantity of tree grates will be paid for at the contract unit price per each for TREE GRATE.
6. The cost of furnishing and supplying the material, labor, equipment, foundation, and necessary incidentals shall be included in the cost of this pay item.

XCI. DECORATIVE BENCH

A. Prevailing Specifications: None.

B. Additions:

1. This work shall consist of furnishing, and installing decorative benches and all necessary incidentals in locations as shown on the plans and in accordance with 105.03.
2. Benches shall be Forms and Surfaces Copenhagen bench, SBCOP-78S, standard finish or approved equal.
3. Benches shall be surfaced mounted in accordance with manufacturer's installation specifications.
4. Benches will be measured by each furnished and installed complete in place.
5. The accepted quantity of benches will be paid for at the contract unit price per each for BENCH, DECORATIVE.
6. The cost of furnishing and supplying the material, labor, equipment, foundation, and necessary incidentals shall be included in the cost of this pay item.

XCII. BICYCLE RACK

A. Prevailing Specifications: None.

B. Additions:

1. This work shall consist of furnishing, and installing bicycle racks and all necessary incidentals in locations as shown on the plans and in accordance with 105.03.
2. Bicycle rack shall be Dero Bike Hitch, black powdercoat finish or approved equal.
3. Bicycle racks shall be surfaced mounted in accordance with manufacturer's installation specifications.
4. Bicycle will be measured by each furnished and installed complete in place.
5. The accepted quantity of benches will be paid for at the contract unit price per each for BICYCLE RACK.
6. The cost of furnishing and supplying the material, labor, equipment, foundation, and necessary incidentals shall be included in the cost of this pay item.

XCIII. NURSERY SODDING AND TOPSOIL

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 621.
- B. Additions:
 1. Fertilizer Turfgrass Sod: Certified Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with TPI's "Specifications for Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.
 2. Turfgrass Species: Sod of grass species as follows: with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:
 - a. Full Sun: Kentucky Bluegrass, a minimum of three cultivars.
 3. The Contractor shall place top soil to a depth of 4 inches in all areas called for sodded lawn.
 - a. A pH test is required to be run before top soil is brought on site.
 4. Sodding, Nursery and Topsoil will be paid for at the contract unit price for "Sodding, Nursery and Topsoil...SYS" as indicated on the itemized proposal sheet and shall include the cost of the topsoil, sod, materials, equipment and appurtenances complete and in place.

XCIV. PLANTS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 622.
- B. Additions:
 1. Materials:
 - a. Antidesiccant:
 - (i) Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.
 - b. Trunk-Wrap Tape:

- (i) Two layers of crinkled paper cemented together with bituminous material, 4-inch- (100-mm-) wide minimum, with stretch factor of 33 percent.
 - c. Water management gel polymer:
 - (i) Horta-Sorb or approved equal. Apply per manufacturers recommendations based on planting types. Available through: Hort Enterprises, P.O. Box 2448, Pompano Beach, FL 33061, (800) 966-4678.
- 2. Construction Requirements:
 - a. Submittals:
 - (i) Product Data:
 - (i) For each type of product indicated
 - (ii) Plant Availability Verification:
 - (i) Contractor shall provide Owner or Owner's representative proof of purchase from supplier and scheduled delivery date for all specified plant material no more than 30 days from the award of contract. Proof of purchase shall include botanical and common names for all plant material, sizes of all plant material, and source(s) of all plant material. This is to ensure that all specified plant material will be ready for installation as required to meet construction schedule and authorized planting periods.
 - b. Product Certificates:
 - (i) For each type of manufactured product, signed by product manufacturer, and complying with the following:
 - (i) Manufacturer's certified analysis for standard products.
 - (ii) Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
 - c. Qualification Data:
 - (i) For landscape Installer.
 - d. Planting Schedule:
 - (i) Indicating anticipated planting dates for exterior plants.
 - e. Maintenance Instructions:
 - (i) Recommended procedures to be established by Owner for maintenance of exterior plants during a calendar year. Submit before expiration of required maintenance periods. Notify Owner of expiration of Contractor maintenance period.
- 3. Quality Assurance:
 - a. Installer Qualifications: A qualified landscape installer whose work has resulted in

successful establishment of exterior plants.

- b. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when exterior planting is in progress.
 - c. Tree and Shrub Measurements: Measure according to ANSI Z60.1 with branches and trunks or canes in their normal position. Do not prune to obtain required sizes. Take caliper measurements 6 inches (150 mm) above ground for trees up to 4-inch (100-mm) caliper size, and 12 inches (300 mm) above ground for larger sizes. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip-to-tip.
4. Delivery, Storage, and Handling:
- a. Deliver exterior plants freshly dug.
 - b. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of exterior plants during delivery. Do not drop exterior plants during delivery.
 - c. Handle planting stock by root ball.
 - d. Deliver exterior plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set exterior plants trees in shade, protect from weather and mechanical damage, and keep roots moist.
 - e. Coordination: Plant trees and shrubs after finish grades are established and before planting lawns, unless otherwise acceptable to Owner.
5. Coordination:
- a. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
 - (i) Spring Planting: April 1 to June 15
 - (ii) Fall Planting: September 1 to October 1
 - (iii) Woody material may be planted earlier or later than these dates if stock is dug during dormancy.
 - b. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.
 - c. Coordination with Lawns: Plant trees and shrubs after finish grades are established and before planting lawns, unless otherwise acceptable to Landscape Architect.
 - (i) When planting trees and shrubs after lawns, protect lawn areas and promptly repair damage caused by planting operations.
6. Preparation:

- a. Protect structures, utilities, sidewalks, pavements, and other facilities, and lawns and existing exterior plants from damage caused by planting operations.
 - b. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
 - c. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks, branches, stems, twigs, and foliage to protect during digging, handling, and transportation. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.
7. Plant Excavation:
- a. Pits and Trenches:
 - (i) Excavate circular pits with sides sloped inward. Trim base leaving center area slightly raised to support root ball and assist in drainage. Do not further disturb base. Scarify sides of plant pit smeared or smoothed during excavation.
 - (ii) Excavate approximately three times as wide as ball diameter for balled and burlapped or container-grown stock.
 - b. Obstructions:
 - (i) Notify Engineer if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
 - c. Drainage:
 - (i) Notify Engineer if subsoil conditions evidence unexpected water seepage or retention in tree or shrub pits.
 - (ii) Fill excavations with water and allow water to percolate away before positioning trees and shrubs.
8. Tree and Shrub Planting:
- a. Set balled and burlapped stock plumb and in center of pit or trench with top of root ball 2 inch (50 mm) above adjacent finish grades.
 - (i) Remove burlap and wire baskets from tops of root balls and partially from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
 - (ii) Place planting soil mix and water management gel polymer around root ball in layers, tamping to settle mix and eliminate voids and air pockets. When pit is approximately one-half backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed. Water again after placing and tamping final layer of planting soil mix.
 - b. Set container-grown stock plumb and in center of pit or trench with top of root ball 2 inch (50 mm) above adjacent finish grades.
 - (i) Carefully remove root ball from container without damaging root ball or plant.

- (ii) Place planting soil mix and water management gel polymer around root ball in layers, tamping to settle mix and eliminate voids and air pockets. When pit is approximately one-half backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed. Water again after placing and tamping final layer of planting soil mix.
 - c. Mulching:
 - (i) Apply 3-inch (101-mm) average thickness of organic shredded hardwood bark mulch extending 12 inches (300 mm) beyond edge of planting pit or trench. Do not place mulch within 2 inches (50 mm) of trunks or stems.
9. Perennial Planting:
- a. Set out and space plants as indicated.
 - b. Dig holes large enough to allow spreading of roots, and backfill with planting soil and water management gel polymer.
 - c. Work soil and water management gel polymer around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.
 - d. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.
10. Planting Bed Mulching:
- a. Mulch backfilled surfaces of planting beds and other areas as indicated. Apply 3-inch (101-mm) average thickness of organic mulch, and finish level with adjacent finish grades. Do not place mulch against plant stems.
11. Cleanup and Protection:
- a. During exterior planting, keep adjacent pavement and construction clean and work area in an orderly condition.
 - b. Protect exterior plants from damage due to landscape operations, operations by other contractors and trades, and others. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged exterior planting.
12. Maintenance:
- a. Provide maintenance by skilled employees of landscape Installer. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than one month from date of Substantial Completion.
 - b. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
 - c. Submit maintenance manual and letter of notification to the Owner at end of maintenance period per Submittals section of this special provision.

13. Plant Guarantee:

- a. Trees and Shrubs shall be guaranteed for the duration of one (1) year after the end of the required maintenance period. Grasses and perennials shall be guaranteed for six (6) months. Notify Owner of expiration of Contractor maintenance period in writing.
- b. Failures include, but are not limited to, the following:
 - (i) Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner, or incidents that are beyond Contractor's control.
 - (ii) Structural failures including plantings falling or blowing over.
 - (iii) Faulty performance of tree stabilization or edgings.
 - (iv) Deterioration of metals, metal finishes, and other materials beyond normal weathering.
- c. Replace plant material that is more than 25% dead or in an unhealthy condition at the end of the warranty period.
- d. The replacement shall be of the same variety, size, and character as specified for original planting. A limit of one replacement of each plant will be required, except for losses or replacements due to failure to comply with requirements.
- e. Repair any damage to the site or project incurred during the planting operations, including any removal and/or replacement of materials. Make replacement immediately and at no additional cost to the Owner.

14. Basis of Payment:

- a. The accepted quantity of plants will be paid for at the contract unit price per each or the following:

(i) OVERSTORY TREE, 2" CALIPER	EACH
(ii) DECIDUOUS TREE, 2" CALIPER	EACH
(iii) ORNAMENTAL TREE, 2" CALIPER	EACH
(iv) EVERGREEN TREE, 6'-8" CALIPER	EACH
(v) SHRUB, NO. 3 CONTAINER	EACH
(vi) PERENNIAL, NO. 1 CONTAINER	EACH
(vii) ORNAMENTAL GRASS, NO 1 CONTAINER	EACH
(viii) GROUNDCOVER, PLUG	EACH
- b. The cost of furnishing and supplying the material, labor, equipment, foundation, plant guarantee, and necessary incidentals shall be included in the cost of this pay item. Shredded Hardwood Mulch will be paid for under separate unit pricing.

XCV. SHREDDED HARDWOOD MULCH

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 622, 914.

B. Additions:

- 1. Materials: Organic mulch free from deleterious materials and suitable as a top dressing of trees and shrubs consisting of shredded hardwood bark. Size range 3" maximum, 1/2"

minimum.

2. Construction Requirements

- a. Tree Planting: Apply 3-inch (101-mm) average thickness of organic mulch in 5' diameter tree ring. Do not place mulch within 2 inches (50 mm) of trunks or stems.
 - b. Planting Bed Mulching: Mulch backfilled surfaces of planting beds and other areas as indicated. Apply 3-inch (101-mm) average thickness of organic mulch, and finish level with adjacent finish grades. Do not place mulch against plant stems.
3. The Contractor shall place top soil to a depth of 4 inches in all areas called for shredded hardwood mulch.
- a. A PH test is required to be run before top soil is brought on site.
4. The accepted quantity of shredded hardwood bark mulch will be paid for at the contract unit price per cubic yard for SHREDDED HARDWOOD MULCH.
5. The cost of furnishing and supplying the material, labor, equipment, and necessary incidentals shall be included in the cost of this pay item.

XCVI. MOBILIZATION AND DEMOBILIZATION FOR SEEDING

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 621.

B. Additions:

1. Mobilization and Demobilization for Seeding will be paid for at the contract unit price for "Mobilization and Demobilization for Seeding...EA" as indicated on the itemized proposal sheet.

XCVII. MULCHED SEEDING, T

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 621.

B. Additions:

1. Incidental to sodding shall also include the delivery and placement of top soil to a depth of 4 inches in all areas designated to receive sod.
2. Seeding shall be place via Hydro-mulch. No straw mulch shall be applied.
3. Mulched Seeding, T, Conventional Mix will be paid for at the contract unit price for "Hydro-Mulched Seeding, T, Conventional Mix...SYS" as indicated on the itemized proposal sheet.

XCVIII. LANDSCAPE EDGING

A. Prevailing Specifications: None.

B. Additions:

1. Aluminum Edging: Standard-profile extruded-aluminum edging, ASTM B 221, Alloy 6063-T6, fabricated in standard lengths with interlocking sections with loops stamped from face of sections to receive stakes.

- a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - (i) Curv-Rite, Inc.
 - (ii) Permaloc Corporation
 - (iii) Russell, J. D. Company (The)
 - (iv) Sure-Loc Edging Corporation
 - b. Edging Size: 3/16 inch wide by 4 inches deep
 - c. Stakes: Aluminum, ASTM B 221, Alloy 6061-T6, approximately 1-1/2 inches wide by 12 inches long.
 - d. Finish: Black anodized.
2. Landscape Edging will be paid for at the contract unit price for "Landscape Edging...LFT" as indicated on the itemized proposal sheet.

XCIX. BACKFILL MIX FOR PLANTINGS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 621.
- B. Additions:
 - 1. Materials
 - a. Topsoil Source: Import topsoil or manufactured topsoil from off-site sources. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches (100 mm) deep; do not obtain from agricultural land, bogs or marshes. Topsoil should be friable organic loam.
 - 2. Construction Requirements
 - a. All landscape shrub beds and tree pits shall be backfilled with a planting mixture described below. All soil mixtures shall be mixed with amendments and other materials by hand or mechanical methods prior to placement. All topsoil shall be tested and amended per test results.
 - (i) Shrub Beds: one thirds topsoil and one third peat moss and one third sand.
 - b. Thoroughly mix planting soil prior to placing.
 - c. Spread approximately one-half the thickness of planting soil mix as shown on details.
 - d. Thoroughly wet first layer and allow to percolate before placing remaining soil. Water thoroughly and fill in any depressions to meet proposed finish grade.
 - 3. The accepted quantity will be paid for at the contract unit price per cubic yard of BACKFILL MIX FOR PLANTING.
 - 4. The cost of furnishing and supplying the material, labor, equipment, and necessary incidentals shall be included in the cost of this pay item.

C. STRUCTURAL WALL DETAILS, WASHINGTON STREET AT MAIN STREET

A. Prevailing Specifications: None.

B. Additions:

1. The work shall be completed in accordance with the details and notes as shown on plans.
2. The accepted quantity of structural wall will be paid for at the contract unit price per cubic yard for MASONRY WALL. Flowable fill will be paid for at the contract unit price per cubic yard for STRUCTURAL BACKFILL, TYPE 1. Compacted drainage fill will be paid for at the contract unit price per cubic yard for BORROW.
3. The cost of furnishing and supplying the material, labor, equipment, concrete, shoring, reinforcing steel, adhesive anchors, grout, and all other necessary incidentals shall be included in the cost of the pay items.

CI. STORM SEWER PIPE

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 715

B. Additions:

1. Pipe, Type 2, shall be one of the following material, unless otherwise noted on the plans:
 - a. Reinforced Concrete Pipe, Class III, min.
 - b. ADS SaniTite HP Pipe
 - c. AWWA C900 PVC Pipe
 - d. SDR 35 or 26 PVC Pipe (Not to be used for circular pipe 21" and larger)
2. Pipe with material thickness, strength classification, or protective coatings in excess of the minimum required as specified herein or noted on the Plans may be used, if such additional thickness does not cause further conflict with existing utilities.
3. Only Rubber O-Ring Joints are to be used.
4. Corrugated PE pipe may be used for the smaller diameter (i.e. pipes with a nominal diameter of less than 24-inches) storm sewers. The corrugated PE pipe shall conform to AASHTO M294, Type S. The Type S pipe shall have a smooth wall interior and annular exterior corrugations. Pipe joints shall be water tight conforming to AASHTO M-294 and ASTM F-477. The PE Type S pipe shall be installed per ASTM D-2321 and the manufacturer's written instructions.
5. In accordance with 327 IAC 8-3.2-9, storm sewer pipe constructed within 10 feet of water mains shall comply with the following:
 - a. Resilient connectors between reinforced concrete structures shall be in accordance with ASTM C923.
 - b. Pipe and fittings shall have an integral bell without solvent cement joints. No saddles or clamps will be allowed.
 - c. Joint performance shall be in accordance with ASTM D3139 under both pressure and 22" Hg vacuum.
 - (i) No solvent cement joints shall be allowed.

- d. Water quality pipe shall be one of the following pipe types:
 - (i) PVC Pipe: Plastic shall have a cell classification of 12454-B as defined in ASTM D1784. SDR Series Water Quality Pipe shall conform to ASTM D2241, SDR-21, or SDR-17. Fittings for SDR Series Water Quality Pipe shall meet the same standards applicable to the pipe. Joints shall be flexible gasket compression-type conforming to ASTM F477.
 - (ii) AWWA Series Pipe: Pipe sizes greater than 12" shall conform to AWWA C-905, DR 32.5.
 - (iii) Ductile Iron Pipe: Pipe shall conform to AWWA C151. Pipe sizes greater than 12" shall be 250 psi pressure class in accordance with AWWA C150. Mechanical joints shall be in accordance with AWWA C110 and AWWA C111. Push-on type joints shall be in accordance with AWWA C111. Gaskets shall be in accordance with AWWA C111. Interior cement mortar lining and bituminous seal coat shall be in accordance with AWWA C104. Outside coating shall be in accordance with AWWA C151. Interior and exterior coatings shall be provided for all pipe, fittings, and adapters.
 - (iv) HDPE SEWER PIPE: HDPE pipe (PE 3408) shall be in accordance with ASTM D3350 and ASTM F714. Cell classifications shall be 345444C. Pipe shall be DI or IPS OD pipe size. Pressure class shall be 130 psi (128). Standard Dimension Ratios (SDR) shall be DR 13.5. Joints shall be Fusion butt-welded.
 - e. All sewer pipe joints located within a minimum distance of ten (10) feet of a water main as measured from the outside edge of the water main to the outside edge of the sewers shall be constructed of water quality pipe. These pipes are denoted as "Water Quality" in the Pipe Materials Table on the plans.
 - f. Water quality pipes shall be connected to manholes and inlets with resilient connectors.
6. All trenches shall be kept free from water until any joint filling material has hardened sufficiently not to be harmed. Work associated with pipe trench dewatering should be in conformance with the special provision noted elsewhere for Dewatering.
 7. Pipe installations shall be backfilled as shown on the plans or as directed. Prior to and during placement of bedding material and backfill, all standing water shall be removed from the trench.
 8. An adequate earth cover shall be placed over the structure before heavy equipment is driven over it.
 9. This work will be measured in accordance with Section 715.13 of the INDOT Specifications, except trench excavation, backfill material, trench backfilling, pipe bedding, aggregate for pipe bedding, and excavation trench safety systems shall not be measured directly, but shall be included in the unit cost of the various other pay items.
 10. Payment for Storm Sewers will be made at the unit price set forth in the proposal per linear foot (LFT) which price shall constitute all labor, materials and incidentals to complete the work in place.
 11. Where indicated on the plans or as required, a concrete saddle shall be provided for support of utility lines that have a clearance of 0.5-foot or less. Payment for the concrete saddles, as required, shall be incidental to the project.

12. The cost of connecting to downstream existing manholes, inlets, or catch basins will be included in the cost of the pay items.

CII. STRUCTURE CONNECTIONS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 715, 720
- B. Additions:
 1. Pipe connections to existing structures shall be made by coring a circular hole of the appropriate size to accept the new pipe connection and boot. Oversized holes and grouting shall not be used.
 2. The cost of coring, boot installation, pipe installation and all appurtenances necessary for a complete installation will not be paid for separately but shall be included in the cost of the pipe.

CIII. PRECAST CONCRETE HEADWALL

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 715
- B. Additions:
 1. Precast Concrete Headwall will be paid for at the contract unit price for "Precast Concrete Headwall....LSUM" as indicated on the itemized proposal sheet.

CIV. SANITARY SEWER LATERALS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 715 & City Standard Drawings, Sheets WW-1 through WW-8
- B. Additions:
 1. This work shall entail the removal of conflicting portions of existing sanitary laterals and the reinstatement of said laterals encountered in the progress and prosecution of the work.
 2. Where proposed work conflicts with existing private building sewer laterals, a segment of the existing sewer lateral, in conflict, shall be removed and replaced/reinstated. Removal of existing sanitary laterals shall be limited to the first joint upstream and downstream of the portion of work in conflict with the proposed improvements, or as required to tie into existing lateral locations. This work will be measured on a per instance basis for conflicting laterals encountered during the course of the Work and shall include all labor, equipment and materials (including pipe, fittings and couplings).
 3. Replacement work materials shall be PVC SDR 35 per ASTM D3034. New sanitary laterals and fittings shall be 6-inch diameter PVC SDR 35 per ASTM D3034 unless otherwise directed by the Owner.
 4. The work performed with this Pay Item shall conform to the current City Standards and IDEM's requirements.
 5. Watertight joints shall be provided at all connections.
 6. Installation of the sanitary sewer pipe shall be in accordance with the pipe manufacturer's

recommendations, ASTM D2321, the City of South Bend's requirements and IDEM's requirements. Pipe installations shall be backfilled as shown on the Plans or as directed.

7. Leakage tests of the sanitary sewer shall be conducted by the Contractor for infiltration or exfiltration using a hydrostatic test. The hydrostatic test shall be performed with a minimum positive head of 2-feet. The rate of infiltration or exfiltration shall not exceed 100 gallons per inch diameter per mile per day for any section of the system. In lieu of the hydrostatic test, all sanitary sewer piping shall be subject to a low pressure air test per ASTM F1417. The City and Engineer shall be advised 48-hours prior to conducting all tests.
8. Trench excavation, pipe material, backfill material, trench backfilling, pipe bedding, compaction, testing and all incidentals shall not be measured directly, but shall be included in the unit cost of these Pay Items.
9. Material for pipe bedding shall not be measured or paid for directly, but shall be considered incidental to the project.

CV. CASTING, FURNISH, INSTALL AND ADJUST TO GRADE

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 720

B. Additions:

1. Casting, Furnish, Install and Adjust to Grade will be paid for at the contract unit price for "Casting, Furnish, Install and Adjust to Grade...EA" as indicated on the itemized proposal sheet.

CVI. CASTING, REMOVE AND RESET

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 720

B. Additions:

1. Remove and Reset Casting will be paid for at the contract unit price for "Casting, Remove and Reset...EA" as indicated on the itemized proposal sheet.

CVII. STANDARD INLETS, MANHOLES, AND CATCH BASINS

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 720 & City Standard Drawings, Sheets D-3 & WW-1

B. Additions:

1. Structures and castings shall be of the size and type as identified on the Structure Data Table, or approved equal, unless otherwise approved by the Engineer.
2. Structures shall be provided with flexible watertight connections for all pipe connections of size 30-inch diameter or less without exceptions, per current City of South Bend policy.
3. The Contractor shall submit dimensioned scalable shop drawings for all manhole and inlet structures which clearly indicate the base elevation of the structure, inverts of all incoming and outgoing pipes, top of slab, and casting elevations.
4. No brick or block shall be used in the construction of a new manhole or when adjusting the elevation of the frame and cover.

5. All pipe connections shall be made with integral resilient fittings complying with ASTM C-923 (30" or less).
6. Where one solid riser or barrel section cannot be used, the final adjustments in elevation of the frame and cover shall only be accomplished by the use of precast concrete adjusting rings of a nominal thickness of not less than 2-inches, or greater than 12-inches conforming to ASTM C-478. Not more than 12-inches of total adjusting rings shall be allowed per structure.
7. Precast concrete sections shall conform to ASTM C-478 for round structures and ASTM C-913 for rectangular/square structures.
8. The Contractor is directed to review the Prevailing Specifications of Section 2100.
9. Prior to manhole construction, the existing pipe ends shall be cleaned of all foreign materials. Existing anchors, toe walls, end sections, or headwalls shall be removed as shown on the plans or as directed. Such obstruction removal shall be considered incidental to the work, and shall not be paid for directly but shall be included in the cost of other pay items. In addition, cutting of existing pipe ends required to provide a flush connection with the inside wall of a proposed manhole shall also be considered incidental to the project.
10. Furnishing and adjusting frames and castings to grade is to be included in the cost of the manhole, catch basin, drywell or inlet, rather than being measured as a separate pay item.
11. The costs of excavation, backfill, reinforcing steel, B borrow or other Engineer-approved or required material for structure backfill, concrete collar required for pipe connection to structures, geotextile, removal, disposal and replacement of pavement, or surface material, and necessary incidentals shall be included in the costs of the pay items. Bedding for manhole structures shall be incidental.
12. Structures shall be provided with flexible watertight connectors for all pipe connections of size 30" diameter (inside nominal diameter) or less without exception, per current City of South Bend policy.
13. Standard Manhole will be paid for at the contract unit price for "Standard Manhole...EACH" as indicated on the itemized proposal sheet.
14. Standard Inlet will be paid for at the contract unit price for "Standard Inlet...EACH" as indicated on the itemized proposal sheet.
15. Benching of structures without a sump shall be considered incidental to the Pay Item for the structure, rather than paid as a separate pay item.
16. Costs associated with plugging existing pipes at manholes as noted in the Plans, shall be incidental to the respective manhole item.

CVIII. ADJUST STRUCTURES TO GRADE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 720
- B. Additions:
 1. Any existing structures, including water valves and gas valves, in the construction area that require adjustment shall be adjusted to match the finished grade. This includes all structures in the project limits.

2. Sanitary and storm manholes requiring grade adjustment have been indicated on the Plans.
3. The Contractor is directed to City Prevailing Specification 2100 for additional requirements related to chimney seal requirements.
4. Payment for such sanitary and storm and manhole structural and casting elevation adjustments shall include all labor, materials and incidentals to perform the work as specified herein and to meet the requirements of the City.
5. Adjustments to water valves and gas valves shall not be measured or paid for directly but shall be considered incidental to the remaining work, included in the cost of various other Pay Items.

CIX. DOGHOUSE MANHOLE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 702, 720
- B. Additions:
 1. Casting Type shall be as identified on the Pre-Cast Doghouse Manhole detail, or approved equal.
 2. Doghouse Manhole will be paid for at the contract unit price for "Doghouse Manhole...EACH" as indicated on the itemized proposal sheet.

CX. RECONSTRUCTED STRUCTURES

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 720.04
- B. Additions:
 1. The work shall include all incidentals for materials, labor and installation.
 2. The work shall be measured and paid by the LFT completed in place at the contract unit price for "Structure, Inlet, Reconstructed" or "Structure, Manhole, Reconstructed" as indicated on the itemized proposal sheet.

CXI. GEOTEXTILE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 918
- B. Additions:
 1. The geotextile material will be in accordance with the physical requirements as follows:

TEST	METHOD	REQUIREMENTS (2)
Grab Strength	ASTM D 4632	80 lb.
Seam Strength (1)	ASTM D 4632	70 lb.
Puncture Strength	ASTM D 4833	25 lb.
Trapezoid Tear	ASTM D 4533	25 lb.
Apparent Opening Size, AOS	ASTM D 4751	Sieve No. 50 or Smaller Opening
Permeability	ASTM D 4491	0.1 mm/sec

Ultraviolet Degradation at 150	ASTM D 4355	70% Strength Retained
(1) Values will apply to both filed and manufactured seams.		
(2) The value in the weaker principal direction shall be used. All numerical values will represent the minimum average roll value. Test results from a sampled roll in a lot shall be in accordance with or shall exceed the minimum values shown in the table. Lots shall be sampled in accordance with ASTM D 4354.		

2. Geotextile will be paid for at the contract unit price for “Geotextile ...SYS” as indicated on the itemized proposal sheet.

CXII. WATER MAIN, VERTICAL RELOCATION W/ DUCTILE IRON FITTINGS, DUCTILE IRON

A. Prevailing Specifications: none

B. Additions:

1. General Requirements:

- a. Contractor shall coordinate the connection to the existing water main with the City of South Bend and the South Bend Water Works. The cost for the connection to the existing water main shall be included in the cost of the pipe.
- b. Contractor shall field verify all locations and elevations of the existing water mains.

2. Submittals:

- a. Contractor shall supply shop drawings and manufacturer’s product data for the piping.
- b. As-Builts:
 - (i) Contractor shall provide one (1) set of As-Built drawings to the City of South Bend.

3. Materials:

- a. Ductile Iron Pipe
 - (i) Pipe shall meet requirements of ANSI 21.50 (AWWA C150) for thickness Class 50.
 - (ii) Push-on joints and rubber gaskets shall meet the requirements of ANSI/AWWA C111/21.11. Cement mortar lining with bituminous seal coat for pipe and fittings shall meet the requirements of ANSI/AWWA C104/21.4. Exterior bituminous coating for fittings and pipe shall meet the requirements of ANSI/AWWA C106/21.6 or ANSI/AWWA C151/21.51 as applicable. Mechanical joints shall be used at all fittings.
 - (iii) Exterior coating for pipe and fittings shall be a minimum of 1 mil of an asphalt coating per AWWA C151.

4. Installation:

- a. Water Main
 - (i) Pipe and accessories shall be handled so as to ensure delivery to the trench in

sound, undamaged condition. Particular care shall be taken not to injure the pipe coating or lining. If the coating or lining of any pipe or fitting is damaged, the repair shall be made by the Contractor at his expense in a satisfactory manner.

- (ii) No other pipe or material of any kind shall be placed inside a pipe or fitting after the coating has been applied. Pipe shall be carried into position and not dragged. Use of pinch bars and tongs for aligning or tuning pipe will be permitted only on the bare ends of the pipe.
- (iii) The interior of pipe and accessories shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations by plugging or other approved method.
- (iv) Before installation, the pipe shall be inspected for defects. Material found to be defective before or after laying shall be replaced with sound material without additional expense to the Owner.
- (v) Rubber gaskets that are not to be installed immediately shall be stored in a cool dark place.
- (vi) Pipe and accessories shall be carefully lowered into the trench by means of derrick, ropes, belts, slings or other authorized equipment. Under no circumstance shall any water-line materials be dropped or dumped into the trench. Care shall be taken to avoid abrasion of the pipe coating.
- (vii) Except where necessary in making connections with other lines or as authorized by the Engineer, pipe shall be laid with the bells facing in the direction of laying.
- (viii) The full length of each section of pipe shall rest solidly upon the pipe bed, with recesses excavated to accommodate bells, couplings, and joints. Pipe that has the grade or joint disturbed after laying shall be taken up and relaid. Pipe shall not be laid in water or when trench conditions are unsuitable for the work.
- (ix) Water shall be kept out of the trench until joining is completed. When work is not in progress, open ends, or pipe, fittings, and valves shall be securely closed so that no trench water, earth, or other substance will enter the pipes or fittings. Where any part of the coating or lining is damaged, the repair shall be made by the Contractor at his expense in a satisfactory manner.
- (x) Mechanical and push-on joints shall be installed in accordance with AWWA C600 for buried lines or AWWA C606 for grooved and flanged pipe above ground or in pits.
- (xi) The maximum allowable deflection is equal to 2 of the deflection allowed in AWWA C600. If the alignment requires deflection in excess of the above limitations, special bends or a sufficient number of shorter lengths of pipe shall be furnished to provide angular deflections within the limits set forth.
- (xii) Cutting of pipe: Cutting of pipe shall be done in a neat and workmanlike manner without damage to the pipe. Unless otherwise recommended by the manufacturer and authorized by the Engineer/Architect, cutting shall be done with an approved type of mechanical cutter. A wheel cutter shall be used when practicable. Squeeze type mechanical cutters shall not be used for ductile iron.

b. Bracing

- (i) Restrained joints shall be placed at fittings, upstream and downstream of the fitting per the details on the Plans.

5. Quality Assurance

a. Testing Requirements

- (i) Examine each piece of pipe before installing. Remove all defective material from the site. Ductile iron pipe is to be rung with a light hammer to detect cracks.
- (ii) A South Bend Water Works employee must witness all static pressure tests and collect all bacteria samples. No other results will be accepted. The South Bend Water Works requires three (3) working days prior notice before any test. Each step must be completed before a bacteria test can be taken. The water mains must be ready for static and bacteriological testing at the time specified. No bacteria samples will be collected or static pressure tests started after noon on the designated day of testing. During the inspection process, if any material needs to be replaced, the static pressure test must be performed again to include the new material.
- (iii) Prior to performing a static pressure test, the Contractor shall do the following:
 - (i) As-Built drawings must be on file at the South Bend Water Works drafting office at least three (3) working days prior to the static pressure test. These drawings must include all fire hydrants, main line valves, hydrant valves, and curb stops. The Contractor must provide proper documentation on official letterhead including a detailed list of material and total lengths installed. The drafting office is located at 830 North Michigan Street and the phone number is 235-9279.
 - (ii) All hydrants will be live during a static pressure test. Table 6A from the AWWA standard C600-99 will be used to determine testing allowances.
- (iv) Pressure pipe shall be subjected to 150 pounds per square inch hydrostatic pressure test. Test each section by means of a pump connected thereto. All air shall be expelled from the pipe by satisfactory means. The pump, connections, fittings, and all necessary labor and materials for conducting the tests, shall be furnished by the Contractor.
- (v) Test all pipe after backfilling and prior to pavement placement. Pressure test shall not be less than 2 hours duration. Leakage is defined as the quantity of water required to maintain a pressure within 5 PSI of the specified test pressure, after air has been expelled and the pipe filled with water. Leakage permitted shall not exceed 10 gallons per inch of diameter per mile of pipe per day at the specified pressure.
- (vi) After a static pressure test, the Contractor shall do the following:
 - (i) The Contractor shall have a form on official letterhead with the start time and pressure along with the end time and pressure. The static pressure test is not official unless it is signed by a Water utility representative.
 - (ii) All hydrants, main line valves, and hydrant valves will be operated by the Contractor and witnessed by a South Bend Water Works representative. Any installed material that is not functioning properly will result in a failed test. The accuracy of the As-Built drawings will be checked at this time.
- (vii) All visible leaks shall be repaired and retested. All pipe, fittings, and other materials

found to be defective under test pressure shall be removed and replaced by the Contractor at his own expense.

(viii) Deviation from the above test procedure shall not be permitted.

b. Disinfection

- (i) Furnish all labor and equipment, corporation stops, water, chlorine, and materials for chlorination.
- (ii) The water main must be flushed so that the chlorine residual is representative of the South Bend Water Works distribution system. No bacteria samples will be taken until the free chlorine residual in the water main is at least 0.50 mg/L. After the flushing is complete and before a sample is taken, the newly installed water main must be isolated from existing potable water mains by closing valve(s).
- (iii) The form of chlorine, concentration and points of application and sampling shall be as directed by the Owner. The chlorination procedure shall be in accordance with AWWA Standard C601 – Disinfecting Water Mains, and as outlined herein.
- (iv) As per AWWA standard C651-99, a sample will be taken every 1000 feet of installed water main and at all dead end water mains. The samples will be collected at the appropriate fire hydrants.
- (v) Tests shall indicate the water to be completely free from the members of the coliform group.
- (vi) In the event of a failed bacteria test, the Contractor is responsible for flushing the system again.

6. Inspection:

- a. All pipe installations are subject to inspection by the Project Representative and civil authorities having jurisdiction.
- b. Pipe Joint: Preparatory to making pipe joints on water main and manholes, clean and dry all surfaces of pipe joints and jointing material. Use lubricants, primers, adhesives and similar materials as recommended by the manufacturers. Place, fit, joint and adjust the jointing materials or factory fabricated joints as recommended by the manufacturer to obtain the degree of water tightness required. As soon as possible after the joint is made, place sufficient backfill material along each side of the pipe to resist forces that might tend to move the pipe off line and grade.
- c. Separation of sanitary sewer and water lines:
 - (i) Follow the Indiana Department of Environmental Management (IDEM) Standards for separation of sanitary sewer and water distribution systems.
 - (ii) Parallel Installation
 - (i) Normal Conditions: Water mains shall be constructed at least 10-feet horizontally from any existing or proposed sanitary sewer or manhole whenever possible. The distance shall be measured edge-to-edge.
 - (ii) Unusual Conditions: When local conditions prevent a horizontal separation of at least 10-feet, then maximum horizontal separation shall be provided with

vertical separation of bottom of water line at least 18- inches above top of sewer. Where this vertical separation cannot be obtained, the sewer shall be constructed of AWWA approved ductile iron pipe with mechanical joints or PVC pipe (SDR 26 or SDR21) with compression seals. The pipe should be pressure tested in place at 150 PSI without leakage before backfilling.

(iii) Crossing

(i) Normal Conditions: Water mains crossing any existing or proposed sewer shall be laid to provide a separation of at least 18-inches between the outside of the water line and the outside of the sewer whenever possible.

(ii) Unusual Conditions: When local conditions prevent a vertical separation described in crossing, normal condition, paragraph above, the following construction shall be used.

1. Sanitary sewers passing over or under water mains shall be constructed of ductile iron pipe with mechanical joints or PVC pipe (SDR 26 or SDR 21) as described in parallel installation, unusual conditions.

2. Water mains passing over sewer lines shall be laid to provide:

a. Vertical separation of at least 18-inches between top of sewer and bottom of water lines.

b. Adequate structural support for the sewers to prevent excessive deflection of the joints, resulting in the breaking of the water line.

c. Maximum separation of water and sewer line joints.

(iv) Sanitary and/or Combined Sewers or Sewer Manholes: No water pipes shall pass through or come in contact with any part of a sewer or sewer manhole.

7. Method of Measurement:

a. This work will be measured by the length of pipe, size of pipe and material of pipe installed.

8. Basis of Payment:

a. The accepted quantity of pipe, per size and material, will be paid for at the contract unit price per linear foot installed.

b. The costs of all equipment, labor, materials, testing, disinfection and incidentals will not be paid for directly but shall be included in the cost of pipe.

c. Ductile Iron Water Main will be paid for at the contract unit price per linear foot for WATER MAIN, DUCTILE IRON of the size as indicated on the itemized proposal sheet.

CXIII. LANDSCAPE IRRIGATION

A. Prevailing Specifications: none

B. Additions:

1. This work includes all labor, materials, equipment, and incidentals required and perform all

operations in connection with the furnishing and installation of an irrigation system along the route in accordance with the lines, grades, design and dimensions shown on the plans, as specified herein, and as directed by the Engineer.

2. Materials shall be in accordance with 715.02 and as follows:

a. General:

(i) The materials chosen for the design of the sprinkler system have been specifically referred to by the manufacturer so as to enable the Owner to establish the level of quality and performance required by the system design. After award of contract and prior to beginning work, the Contractor shall submit for approval three copies of the complete list of materials which he proposes to install.

(ii) Standard of Quality Acceptable Manufacturers:

- (i) Rain Bird Sales, Inc. - Glendora, CA
- (ii) K-Rain- Riviera Beach, FL
- (iii) Hydro-Rain- North Salt Lake, UT
- (iv) Walla Walla Sprinkler Co. – Walla Walla, WA
- (v) Wilkins Division - Paso Robles, CA
- (vi) Cresline - Evansville, IN
- (vii) Lasco - Brownsville, TN
- (viii) Leemco, Inc.- Mount Vernon, CA
- (ix) Nibco - Elkhart, IN
- (x) Sta-Rite – Delavan, WI
- (xi) Regency- Sikeston, MO
- (xii) Baseline- Meridian, ID

b. Substitutions:

(i) Proposed substitutions for materials or equipment shall be submitted for approval within ten days of the project bid date with complete drawing documents for consideration as approved equals. Otherwise, such substitutions will not be allowed. Proposals for substitutions shall be made only by the prime bidders. Manufacturers, distributors, and Sub-Contractors shall not make proposals to the Engineer for substitutions.

(ii) No substitution shall be made unless authorized in writing by the Engineer. Should a substitution be accepted, and should the substitute material prove defective or otherwise unsatisfactory for the service intended, and within the guarantee period, the Contractor shall replace this material or equipment with material or equipment specified, at his own expense, and to the satisfaction of the Engineer.

(iii) Contractors submitting bids with substitute materials and equipment shall also provide a written performance guarantee certifying that the substitute materials and equipment will provide the specified irrigation requirements.

c. Backflow Preventer

(i) The backflow preventer shall be a pressure vacuum assembly, with a cast bronze, ASTM B584, main valve body, stainless steel 300 series, fasteners and springs, and shall meet or exceed specifications and standards set by the State and USC Foundation for Cross-Connection Control and Hydraulic Research. The Contractor shall check with local authorities for code compliance. The backflow shall be sized as shown on drawings. All exposed standpipe and fittings shall be copper or

galvanized pipe to 18 in. below grade. The backflow preventer shall be mounted inside a weatherproof cover on a concrete pad. It shall have a metal enclosure of appropriate size, installed per detail and manufacturers recommendations.

d. Main Line Piping

- (i) All main line piping shall be CI 160 PVC SDR 26 standard weight. All mainline 1– in. to 2 1/2 in. shall be solvent weld. All mainline 3 in. and larger shall be PVC gasketed type. Pipe shall carry the N.S.F. seal of approval and meet the following specifications: ASTM 1120/1220, C.S. 256-63, or latest revisions. Size shall be as indicated on drawings.

e. Lateral Line Piping

- (i) All lateral lines downstream of the valves shall be CL 200 PVC SDR 21 for 1” pipe, CI 160 PVC SDR 26 for 1 1/4” and larger pipe, standard weight. Pipe shall carry the N.S.F. seal of approval and meet the following specifications: ASTM 1120/1220, C.S. 256-63, SDR 26 or latest revision. Size as indicated on drawings.

f. Pipe Fittings

- (i) All PVC fittings 1” - 3” shall be solvent weld schedule 40 standard weight. Attachment shall be made with both a primer and solvent cement as approved by the manufacturer. Glue type saddles may be used so long as they are 3/4 round type units which grip the pipe. Saddles are to be bored or cut with appropriate equipment and holes are not to be burned into the pipe. All fittings 4” and larger shall be ductile iron with PVC gasket and hub configuration and retaining rings. Provide joint restraints or concrete thrust blocks on all 3” and larger fittings. Install per manufactures recommendations.

g. Automatic Valves

- (i) The remote control valves shall be a plastic globe/angle valves, normally closed, 24 VAC 50/60 cycle solenoid actuated globe design capable of having a flow rate of the gallons per minute (GPM) indicated in the drawings. The valve pressure rating shall not be less than 150 psi.

h. Valve - Controller Communication

- (i) Communication between the controller and the valves shall be accomplished with copper wire with an exterior jacket which is U.L. listed for direct burial and sprinkler control. The Contractor shall be responsible for correct wire sizing for distance and voltage loss.
- (ii) A minimum of 14 gauge wire will be used and larger gauges used where voltage loss dictates. Common wire color shall be white. Station wires shall be all the same color for the entire run and number marked at all splices and connections. All field connections will be accomplished with wire nuts and will be made water tight and oxidation resistant through the use of DBY electrical insulating resin packs. Use of sealant without container package is not permissible.

i. Valve Enclosures

- (i) All single automatic valves shall be enclosed in a 10” round, commercial grade, fiberglass valve box with locking cover. All valve boxes are to be filled with a minimum of 6” of washed pea gravel below pipe level to ensure adequate drainage.

Controller station numbers shall be marked on the valve box cover in a permanent manner.

j. Isolation Valves

- (i) All isolation valves shall be brass, threaded gate valves. Line size. Enclose in 10" round, commercial grade, fiberglass valve box with locking cover.

k. Automatic Controller

- (i) The automatic controller shall be a commercial controller with the number of stations as indicated on the drawing. The controller shall be an eight-station base model, expandable to 32 stations with hot-swappable modules in four or eight station increments without powering down. The cabinet shall be a heavy-duty key-locking cabinet (NEMA 3R rated) with internal junction box. Flexible programming shall include cycle/soak, programmable valve delay, sensor override by station, master valve by station, calendar day off and total program and valve run times. Other options shall include Contractor programming default, seasonal adjust and battery back-up protection. All 120 VAC power to the controllers will be extended by the Owners. Confirm a ground of 15 OHMS or less. Lightning protection devices are to be installed on the primary, secondary and two wire path as required by the manufacturer. Place in the approximate area as shown on the drawings, with final location to be determined by the Owner at time of installation.

l. Rain Sensor

- (i) The wireless rain sensor shall have a transmitter. The rain sensor shall send a signal to the controller during a rain event, allowing it to stop any zones from operating. Install per manufacturer's instructions.

m. Landscape Dripline

- (i) Combination distribution/emission dripline shall be used. Refer to the irrigation legend on the plans for specific flow and spacing requirements. All buried dripline application shall utilize air relief valves, unless the product contains emitters with individual check valves. Installation of the air relief valve in a 6" valve box is to occur at all highpoints of individual zones (there may be more than one depending upon layout and topography) to avoid siphoning of particulate matter into emitters. Flush caps (manual) should be installed at ends of all drip zones for the initial clearing/ flushing of the zone, and for periodic maintenance/ winterization or flushing if upstream breaks occur. Use a 6" valve box with gravel at the bottom for each flush valve.

n. Planting Beds

- (i) Install tubing under a 3" mulch bed and stake every 18" with galvanized tie down stakes. Individual plant material requiring more water may be supplemented using additional emitters with 1/4" distribution tubing. Refer to the Landscape Dripline detail for specific installation procedures and additional components. Install a manual drain valve at the end points of the drip zone in a valve box.

o. Quick Coupling Valves

- (i) Quick coupling valves (QCV) shall have all brass construction with rubber covers. All quick coupling valves are to be enclosed in a 10" round fiberglass valve box with locking cover. Secure quick coupler by mounting on a 1" brass insert and

swing joint with stabilizer elbow. Provide one (1) matching valve key and swivel adapter for every ten QCV. The quick couplers are to be set at such height that the valve box will not interfere with the operation of the valve key.

p. Sprinkler Risers

- (i) Sprinkler risers tapped 3/4" and smaller shall consist of a flexible riser pipe. Compatible "no-clamp" insert fittings shall be employed if using this type of pipe.

3. Installation shall be in accordance with 715 and as follows:

a. Related Documents:

- (i) The site plan, draining plan, grading plan, utility plan and landscaping plan will affect the installation of the irrigation system. Coordinate to avoid conflicts.

b. Inspection of Site:

- (i) All prospective Bidders are urged to visit the project site and to examine existing conditions and make note of any conditions which may pertain to his class of work. Failure to do so will not relieve bidder of responsibility in connection with his work.

c. Description of Work:

(i) General:

- (i) The extent of base landscape irrigation as shown on the drawings.

- (ii) The system shall provide 100% coverage and uniformly irrigate all areas and perform as required by these plans and specifications:

- (i) Provide an underground irrigation system as shown on the drawings and specifications and as required by these plans and specifications. Contractor shall provide drawings with final irrigation design for approval prior to installation.

1. Automatic irrigation system including piping, fittings, sprinkler heads, control wire, quick coupler valves, controllers, and accessories.
2. Excavating and backfilling irrigation system work.
3. Testing and adjusting of system.
4. "As-Built" drawings.
5. Winterization - shutdown - spring start-up.

- (ii) All work required by the plans and specifications shall be accomplished by the Contractor even though minor items required may not be specifically mentioned in the above listing.

(iii) Drawings:

- (i) The system layout is diagrammatic. Exact locations of piping, sprinkler heads, valves, and other components may need to be modified by the Contractor in the field at time of installation to allow for actual on site conditions. Proper

spacing of sprinkler heads shall be required to obtain satisfactory coverage. Minor adjustments in the system layout will be permitted to clear fixed obstructions. Any major revisions to the irrigation system shall be submitted in writing to the owner for approval. The final system layout must be acceptable to the owner.

(iv) Verification of Plans and Specifications:

- (i) It shall be the responsibility of the Contractor to carefully examine the plans and specifications relating to this work for completeness, accuracy, and clarity. It is the Contractor's responsibility to obtain the most current site survey, utility plans, landscape plans and any other document necessary to complete the installation of the irrigation system in cooperation with the site improvements. These documents may be obtained through contact with the owner's authorized representative. Any conflict, errors or clarifications request shall be immediately brought to the attention of the Engineer for written interpretation or instructions. No claim for increased compensation for additions, changes, or alterations will be considered unless written authorization is granted by Owner's representative. Otherwise any additional materials or labor due to existing conditions shall be furnished under this contract.

(v) Permits:

- (i) The Contractor shall be responsible for obtaining all permits required for installation of this work.

d. Quality Assurance

(i) Manufacturing Qualifications:

- (i) Provide the landscape irrigation system as a complete unit produced by acceptable manufacturers for all portions of the working equipment which includes heads, valves, controls and accessories.
- (ii) Installers shall have a minimum of three years' experience in the construction of a job of similar size and complexity.
- (iii) Provide the Engineer a list of five equivalent irrigation system installations, performed in the last five years, incorporating the following information:
 - 1. Name and address of product
 - 2. Name and address of Owner
 - a. Contact person
 - 3. Name and address with whom contract was with
 - a. Contact person

(ii) Requirements of regulatory agencies and utilities:

- (i) System shall comply with the latest requirements of all state and local codes and ordinances.
- (ii) System shall comply with the latest rules and requirements by all utility companies involved.

(iii) Electrical devices shall carry Underwriter's Laboratory labels.

- (iv) Required pressure testing shall be the responsibility of the Contractor.
 - (v) Materials, equipment, and methods of installation shall comply with the following codes and standards:
 - (i) National Fire Protection Association (NFPA)
 - (ii) National Electric Code (NEC)
 - (iii) American Society for Testing and Materials (ASTM)
 - (iv) The Irrigation Association (IA)
 - (v) American Water Works Association (AWWA)
- e. Submittals
- (i) Manufacturer's Data:
 - (i) Submit copies of manufacturer's specifications and instructions for all manufactured materials and products if other than those specified herein.
 - (ii) Record Drawings:
 - (i) After completion of the work and before final acceptance, a set of scaled, reproducible record drawings, and two sets of prints showing the location of the complete work shall be submitted to the Engineer.
 - (iii) Irrigation Schedule:
 - (i) Submit a weekly irrigation schedule based on an annual evapotranspiration rates, average rainfall etc. amounts or as directed by the Engineer.
 - (iv) Construction Schedule:
 - (i) Submit a construction schedule to be approved by the Engineer.
- f. Warranty
- (i) The Contractor shall furnish a manufacturer's written warranty to the effect that all heads, valves, and controllers will be warranted for a period of no less than two years to be free from defects and faulty workmanship, and that any defective heads, valves, or controllers shall be promptly repaired or replaced without additional cost in accordance with that warranty.
 - (ii) All materials other than those referred to in Paragraph A above shall be warranted for a period of one full year from the date of final acceptance by the Engineer.
 - (iii) All installation labor used on this project will be warranted for one full year from date of final acceptance by the Engineer.
- g. Water Supply
- (i) The water supply shall be from an existing service line. The tap and meter shall be the responsibility of the Contractor. Install per local code and in accordance with the water purveyors requirements. Approximate locations shown on plan, verify in the field with owners authorized representative.
- h. System Design

- (i) Lay out work as accurately as possible to the drawings. The drawings are generally diagrammatic to the extent that all offsets, fittings, and finished site conditions may not be shown.
 - (ii) The Contractor shall be responsible for full and complete coverage of all irrigated areas as to spacing and precipitation rates being matched and shall make any necessary adjustments to the system with no additional compensation. Head spacing as shown on the drawings is predicated on the water supply being a minimum of 50 static psi at the point of connection. Contractor shall verify said pressure before beginning the installation. Report any deviation between the said pressure and the specified pressure to the Engineer. Head spacing shall not exceed 55% of manufacturer's stated diameter.
 - (iii) Any major revisions to the irrigation system must be submitted to the Engineer and answered in written form, along with any change in the contract price.
- i. Trenching and Backfilling
- (i) General
 - (i) Pulling, Excavating, and Trenching:
 1. Perform all excavations as required for the installation of the work included under this section, including shoring of earth banks to prevent cave-ins.
 2. All lateral pipe (2" and smaller) shall be pulled with a vibratory plow.
 3. If trenching, trenches shall be wide enough to allow a minimum of 6" between parallel pipe lines. If pulling, the same lateral distance shall be observed.
 - (ii) Underground Obstructions:
 1. Any unforeseen underground obstructions which might be encountered during the installation shall be brought to the attention of the Engineer immediately and work on that portion of the installation shall be suspended.
 - (iii) Underground Utilities:
 1. It shall be the responsibility of the Contractor to locate or have located all existing public underground utilities on that portion of the site which is affected by his work. All private underground utilities shall be located and marked by the Owner. The Contractor shall contact the Owner for verification that all private utilities have been located prior to construction. The Contractor will be responsible for the repair of any cuts, which are made by him in these utilities.
 - (ii) Minimum Cover
 - (i) A minimum of 18 in. cover shall be held over all main lines and control lines. A minimum of 12 in. of cover shall be maintained over all lateral lines.
 - (iii) Backfill
 - (i) Irrigation trenches shall be backfilled in accordance with 203. All disturbed

areas are to be re-seeded in accordance with 621.

- (ii) Contractor shall be responsible for repair of any irrigation trench settling which occurs during the first year after final acceptance by the Engineer.
- (iii) Where pipe is pulled into the ground, all domes will be compacted to original grade after pulling.

(iv) Sleeving Pavements, Walks, Etc.

- (i) All mainline and lateral piping under any pavement, including walkways and roads, and structures shall be installed in separate sleeves, minimum Schedule 40 PVC, unless noted otherwise. Sleeves shall be a minimum of twice the diameter of the pipe to be sleeved unless otherwise noted. Mainline sleeves shall be a minimum of 24 in. below subgrade and lateral sleeves shall be a minimum of 18" below subgrade. Extend sleeves into landscape area 12" minimum. Backfill material shall be free of rubbish, plant matter, frozen materials and stones larger than 3/8" in maximum dimensions. Provide less than 6" of clearance between each lateral line and not less than 18" of clearance between lateral lines and mainlines.
- (ii) All piping under existing pavement and walkways will be bored with appropriate equipment unless otherwise noted. Where roadway cuts are required, the asphalt is to be saw cut, the sleeve installed, and surface restored to original.
- (iii) All communication wire will be placed in separate sleeving under all pavement and walks in excess of 10 ft. in width.
- (iv) All sleeving called for in the drawings shall be sized according to the drawings and general notes. If sleeving is necessary in areas other than shown on the drawings, than size two sizes larger than the pipe being sleeved. Sleeving shall be a minimum of Schedule 40 PVC material.
- (v) If sleeving is not immediately used, than the Contractor shall securely cap the ends with duct tape and mark with wooden stakes for future designation.

j. Installation

(i) General

- (i) Unless otherwise indicated, comply with requirements of the Local Plumbing Code.

(ii) Sprinkler Heads

- (i) Install heads at proper grade level as per manufacturer's recommendation.
- (ii) Use only Teflon tape for sealing all heads and riser assemblies.

(iii) Circuit Valves

- (i) Install in valve box, arranged for easy adjustment and removal.
- (ii) Adjust automatic control valves to provide flow at rated operating pressure required for each sprinkler circuit. If an over pressure condition exists,

Contractor shall install, at his expense, such pressure compensation devices as are necessary to bring the circuit or heads into proper operating range.

(iv) Piping

- (i) Lay pipe on solid sub-base, uniformly sloped without humps or depressions.
- (ii) When pipe is pulled into the ground, all PVC pipe shall be solvent welded at least 24 hours before pulling.
- (iii) All trenches shall be snaked, or the pipe snaked within the trench to allow for expansion and contraction.
- (iv) A single strand of 14-1 wire, yellow in color, shall be run with all main line from the point of connection to the end of the main line. This single strand of wire shall be available for main line tracking.
- (v) Install thrust blocks behind elbows/tees and gate valves along 3" or larger mainlines.

(v) Dielectric Protection

- (i) Use dielectric fittings at connection where pipes of dissimilar metal are joined.

(vi) Closing of Pipe and Flushing Lines

- (i) Cap or plug all openings as soon as lines have been installed to prevent the entrance of materials that would obstruct the pipe. Leave in place until removal is necessary for completion of the installation.
- (ii) Thoroughly flush out all main water lines before installing valves.
- (iii) Thoroughly flush out all lateral lines after installation and before attaching heads.

(vii) Communication Circuitry

- (i) All communication circuitry shall be run, wherever possible, with the main pipe line.
- (ii) All splices shall be made at a valve box for easy access.
- (iii) A minimum of 12" of either control wire shall be coiled at each valve.

k. Testing and Training

(i) Operational Testing

- (i) Perform operational testing after backfill is completed and sprinkler heads are adjusted to final position.
- (ii) Demonstrate to the Engineer that the system meets coverage requirements and that automatic controls function properly.
- (iii) Coverage requirements are based on operation of one circuit at a time.

(ii) Personnel Training

- (i) The Contractor shall be responsible for the training of as many personnel as the Owner shall deem necessary.
- (ii) Contractor shall be responsible for one starting and one winterizing of the system during the appropriate times of the year after final acceptance by the Engineer.
- (iii) Contractor shall include general troubleshooting and operation of the system with reference to head, valve, and controller operation.
- (iv) Contractor shall furnish a complete operation and maintenance manual to the Owner's personnel. This manual shall include repair parts lists, assembly instructions, trouble-shooting guides, programming instructions, and recommended precipitation rates.

I. Adjustment

- (i) After completion of grading, seeding or sodding, if applicable, the Contractor shall return to the job site to perform any final adjustments to the system which might be deemed necessary.
- (ii) The Contractor shall be responsible for any pressure testing and start up of the system when construction is complete. The Contractor shall also be responsible for the winterization of the system after the first season of operation.

4. Basis of Payment

- a. The costs for the irrigation system shall include all labor, materials and equipment needed to furnish and install the irrigation system. All necessary work shall be provided including piping, conduit, pumps, sensors, control wires, controls, spray heads, sleeves, drip lines, excavating, backfill, trenching, start up, adjustments, winterization, testing, owner training, utility tap on fees, utility labor and material costs for meter installations, and related work.
- b. Irrigation will be paid for at the contract unit price for "Irrigation, Landscape...SYS" as indicated on the itemized proposal sheet. The irrigation system will be paid for at the contract unit price per Square Yards for the entire installed system.

CXIV. IRRIGATION REPAIR

A. Prevailing Specifications: None

B. Additions:

1. Description:

- a. This work shall consist of the replacement of any portion of the irrigation system damaged by construction-related activities in locations approved by the Engineer.

2. Products:

- a. The replacement components of the irrigation system shall consist of equal or better materials unless approved in writing by the City of South Bend. The replacement lines and components shall match the damaged lines and components with regard to their

manufacturer, diameter, capacity, and functionality.

3. Execution:

- a. During construction activities, if the Contractor encounters a portion of an irrigation system, the Contractor shall immediately notify the Engineer. When approved in writing by the Engineer, the Contractor shall carefully terminate the irrigation line at a point where the damage to the system will be minimized (i.e. at the closest valve, junction, or upstream sprinkler head).
- b. Upon completion of the substantial land disturbing activities, but before final grading efforts, the Contractor shall replace damaged portions of the irrigation system. The Contractor shall furnish all materials, connections, fittings, and any other materials necessary to complete the replacement. The Contractor shall be responsible for removing and disposing the damaged irrigation lines in accordance with Federal, State, and local requirements.
- c. The Contractor shall work closely with the City and the Engineer to verify that the irrigation system is fully functional prior to any work commencing in the vicinity of the proposed trail. Any portions of the irrigation system that fail to work as expected during the test shall be identified by the Contractor in writing.

4. Basis of Payment:

- a. The cost of furnishing all equipment, labor (including trenching and backfilling activities), disposal fees, and materials including, pipe, sprinklers, valves, controllers, sensors, and connectors/joints/elbows to repair the proposed irrigation system will not be paid for separately, but shall be included in the cost of irrigation repair.
- b. Irrigation, Repair will be paid for at the unit contract unit price for "Irrigation, Repair.....SYS" as indicated on the itemized proposal sheet. The irrigation system will be paid for at the contract unit price per Square Yards for the entire installed system.

CXV. IRRIGATION, TREE WATERING SYSTEM

A. Prevailing Specifications: None

B. Additions:

1. Description:

- a. The tree watering system work shall include furnishing all necessary labor, equipment, materials as described below and in accordance with 105.03.

2. Materials:

- a. All tree plantings shall be provided with a portable drip irrigation system utilizing one of the following or approved equal:
 - (i) Ooze Tube – 25 Gallon capacity, brown. Available from: Engineered Water Solutions 800-951-8123
 - (ii) Tree Gator Original - 20 Gallon capacity, Available from: Spectrum Products, Inc. 1-866-TREEGATOR (873-3428)
 - (iii) Tree Watering Bags – 20 Gallon capacity, Available from: King Bag &

3. Construction Requirements:
 - a. The reservoir shall encircle the base of the tree, leaving a pathway for air to circulate around tree trunk, completely to the soil level.
 - b. As applicable, drip emitters shall be installed inside the center of the product at or very near soil level so as to empty water in close proximity to the center of the tree's root ball.
4. Method of Measurement:
 - a. Tree watering system will be measured by each unit, complete in place.
5. Basis of Payment:
 - a. The cost of furnishing all equipment, labor, disposal fees, and materials will not be paid for separately, but shall be included in the cost of supplying and installing the tree watering system.
 - b. Irrigation, Tree Watering System will be paid for at the unit contract unit price for "Tree Watering System.....EACH" as indicated on the itemized proposal sheet.

CXVI. WATER SERVICE LINE ADJUSTMENTS

- A. Prevailing Specifications: City Standard Drawings W-1 through W-10, Water Department Requirements. See Appendix C.
- B. Additions:
 1. This work shall entail the removal of conflicting portions of existing water service connections, the removal of lead water lines with copper lines, and the reinstatement of said service connections encountered in the progress and prosecution of the work.
 2. Replacement work shall be of equal or greater materials than the existing lateral material without consideration of age deterioration.
 3. New work shall match the inside diameter of existing water service connections which is impacted, unless the existing size is less than 1-inch, in which case new work shall be a minimum of 1-inch.
 4. The work performed with this Pay Item shall conform to the current City standards.
 5. For the purposes of this project, most water service lines shall be considered to fall under the residential classification for existing sizes between ¾-inch diameter and 2-inch diameter.
 6. If the contractor encounters an existing water service line requiring adjustment outside the specified size ranges, this should be discussed with the Owner and Engineer prior to proceeding with adjustment.
 7. The Contractor shall be responsible for notifying affected property owners between forty-eight (48) and seventy-two (72) hours prior to any service interruptions required to reinstate water service.

8. Unless otherwise approved by the Owner, water service shall not be interrupted for any period in excess of eight (8) hours.
9. This work will be measured on a per instance basis for removal and reinstatement of conflicting water service connections or existing lead pipe water service connections encountered during the course of the Work. This work shall include all labor, equipment and materials (including: 1" Copper Type K, Pipe; Curb Stop Valve & Box, Fittings and Couplings).
10. This work shall include the relocation or adjustment in elevation of existing curb stop valves & boxes for service connections.
11. For the replacement of lead pipes, the City Water Department shall be responsible for the tapping of the water main, with the Contractor responsible from the new tap to the reconnection of the new work to the existing work.
12. Water service connection work shall not extend from the main tap beyond the existing service valve (curb stop), unless the valve (curb stop) is in conflict with the proposed work. Where connection to the main tap is located under pavement not noted for full depth replacement, Contractor shall include full depth asphalt removal/replacement in the respective bid item. Contractor shall be responsible for furnishing and installing curb stops, with specific brand and type to be coordinated by the Contractor with the City of South Bend Water Works Department. If a new tap is required, the Contractor shall be responsible for the tap fee to the City of South Bend Water Works for performance of the tap work. The City tap fee includes corporation stop, curb stop valve and box.
13. This work will be paid for at the contract unit price per each (EACH) ADJUST WATER SERVICE LINE, RESIDENTIAL; and TAP, WATER SERVICE, 1-INCH (CITY TAP FEE) requiring such adjustment which price shall constitute all labor, materials and incidentals to complete the work in place.
14. Where noted on the plans or directed by the Owner, the Contractor shall cap existing water services watertight. This work will be paid for at the contract unit price per each (EACH) CAP EXISTING WATER SERVICE LINE which price shall include all labor, materials and incidentals to complete the work.

CXVII. SIGN POST, SQUARE, TYPE 2, REINFORCED ANCHOR BASE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 802.
- B. Additions:
 1. Sign Post, Square, Type 2, Reinforced Anchor Base will be paid for at the contract unit price for "Sign Post, Square, Type 2, Reinforced Anchor Base...LFT" as indicated on the itemized proposal sheet.

CXVIII. SIGN, SHEET, REMOVE AND RESET

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 802.
- B. Additions:
 1. Sign, Sheet, Relocate will be paid for at the contract unit price for "Sign, Sheet, Relocate...EA" as indicated on the itemized proposal sheet.

CXIX. ILLUMINATED WALL LETTERING

A. Prevailing Specifications: None.

B. Additions:

1. Provide a 120/240V Single phase, 20 amp circuit for Illuminated Sign.
2. One (1) set of 20" Halo illuminated reverse LED channel letters reading "WELCOME TO SOUTH BEND".
 - a. .125" aluminum faces
 - b. 3" x .050" aluminum returns
 - c. .250" polycarbonate backs with white diffuser vinyl applied 2nd surface.
 - d. Letters shall be primed white inside.
 - e. Sign shall be painted with automotive grade UV paint outside (2 coats), Color: Black
 - f. Letters shall be mounted with 1" spacers from wall surface.
 - g. Drain holes shall be placed in each letter.
 - h. Signs shall be White LED illumination.
3. Contractor shall install electrical wires through wall and into conduit.
4. Contractor shall install sign wiring and connection points prior to installation of fill material behind wall.
5. The cost of the Illuminated Wall Lettering shall include the anchor bolts, grounding, materials, labor, equipment and appurtenances required to install the sign and full operation complete and in place.
6. Illuminated Wall Lettering will be paid for at the contract unit price for "Illuminated Wall Lettering...Lump Sum" as indicated on the itemized proposal sheet.

CXX. MISCELLANEOUS EQUIPMENT FOR LIGHTING

A. Prevailing Specifications: None.

B. Additions:

1. Provide a 120/240V Single phase, Three Wire 60 Amp service pedestal for the roundabout.
2. Provide and install as required a wall mounted cabinet enclosure that shall include a Photocell, Time Clock and circuits as noted on the plans, lighting contactors as required for a complete and functioning lighting control system for all proposed lighting within the roundabout area.
3. Provide and install as required noted empty raceways and handhole that shall intercept existing empty raceways that extends outside the construction limits.
4. Miscellaneous Equipment will be paid for at the contract unit price for "Miscellaneous Equipment for Lighting...Lump Sum" as indicated on the itemized proposal sheet.

CXXI. PORTABLE CHANGEABLE MESSAGE BOARD SIGNS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 801.
- B. Additions:
 - 1. Contractor shall provide portable, trailer-mounted, changeable message board signs with a self-contained power supply for the sign that has the following features:
 - a. Message sign panel large enough to display three lines of eight inch (8") high characters with a minimum of eight-character display per message line.
 - b. Size shall be appropriate for non-interstate use with a dimension of approximately 84"x42" display.
 - c. It shall have the capacity for multiple preprogrammed messages (three line displays) to be selected by the Engineer.
 - d. A waterproof, lockable cover for the controller keyboard.
 - e. An operator's manual, a service manual, and wiring diagram.
 - f. Variable mounting height of at least seven feet (7') from the pavement to the bottom of the message sign panel.
 - g. The capacity to operate with a battery pack for two hours under full load.
 - 2. Four Portable Changeable Message Board signs are provided on the proposal sheet for placement as directed by the City.

CXXII. CONSTRUCTION LIGHTING

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 801.
- B. Additions:
 - 1. Acceptable levels of illumination shall be maintained in the project area throughout the project and will be defined by:
 - a. Existing lights remaining in operation along at least one side of the roadway, or
 - b. Temporary illumination equivalent in quantity and spacing to the existing lighting along one side of the roadway.
 - 2. The Contractor shall coordinate with American Electric Power (AEP) and determine which, if any existing roadway lights may remain in place through construction.
 - 3. If temporary construction lighting is required or desired, a written request shall be made to the Engineer. Authorization will be required before temporary lighting may be used.
 - 4. Temporary lighting shall remain the property of the Contractor.
 - 5. Power generation shall subscribe to the CITY's noise ordinance (Chapter 14, Article 3, Section 13-57.05), or shall be provided via temporary electric service.
 - 6. Construction Lighting will be measured by the Day for each pole to which temporary lighting

is attached.

7. Payment for this work shall be made at the unit price set forth in the proposal for CONSTRUCTION LIGHTING (DAY), which shall include all materials, labor, electricity, power generation, fuel, and any other item associated.

CXXIII. STREET NAME SIGNS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 802, 805.
- B. Additions:
 1. All street name signs, ground mounted and overhead mounted will be on a green background with a white border. The font shall be Federal MUTCD and will be dimensioned as shown on the Engineer-provided Sign Detail Drawings. The overhead mounted signs shall have the address range on the blade.
 2. The Contractor shall prepare shop drawings for approval on all street name signs.
 3. Removal, salvaging, and reinstallation of existing salvaged signs shall be considered incidental to the cost of other sign pay items.
 4. The overhead sign structure located at Sta. 30+35 Line "C", shall be in accordance with Section 802.
 5. The cable span sign structure poles and connections shall be primed and finished with a flat black powder coat applied by the manufacturer.

CXXIV. PROJECT INFORMATION SIGN

- A. Prevailing Specifications: None.
- B. Additions:
 1. This work shall consist of fabricating and installing a project information sign within the project site as directed by the Owner.
 2. This Contractor shall submit a Shop Drawing on 8.5-inch x 11-inch paper related to the sign layout before authorizing fabrication.
 3. The Project Information Sign shall be fabricated by a professional sign manufacturer.
 4. The location of the sign shall be near the opposing project construction limits as verbally directed by the Owner.
 5. The minimum size shall be three by six feet.
 6. The sign panel shall be constructed of 3/4-inch APA rated, A-B grade exterior plywood rabbeted into a 2-inch x 4-inch nominal frame or other suitable materials and construction capable of withstanding typical weather conditions common to the project site.
 7. Sign panel shall be primed as recommended by finish coat manufacturer for the substrate and finish material.
 8. Lettering and striping shall be uniform with sharp, neat profiles.

9. All paint or exterior coverings used shall be exterior grade coating suitable for use on wood or the material of construction. The sign shall be prepared as follows:
 - a. Sign Face:
 - (i) The sign face background shall be white and can consist of a minimum two coats of paint.
 - b. Supports and Trim:
 - (i) The supports and trim shall be white and can consist of a minimum of two coats of paint. The front facing surface of the 2-inch x 4-inch frame shall be royal blue or black.
10. The size and color of lettering shall be approved by the Owner during the Shop Drawing process. The emblem of the Owner and Engineer shall be reasonably close in color to that supplied to the Contractor by the Owner.
11. The sign shall include the following information regarding the Project, Contractor, Owner and Engineer:
 - a. Project:
 - (i) Name, City Project Number, Neighborhood Group
 - b. Contractor:
 - (i) Name required. Contractor Emblem is suggested for identification, but is optional.
 - c. Owner:
 - (i) Name, Emblem
 - d. Engineer:
 - (i) Name, Emblem
12. The sign shall be installed within one week after work begins at the site.
13. Install sign in accordance with all laws and codes having jurisdiction.
14. Erect sign in a prominent location, secure from vandalism.
15. All fasteners used in the fabrication and installation of the sign shall be rust-proof.
16. The sign shall be adequately supported and braced to remain in the proper positioning and alignment, including resistance to wind loads and toppling of the sign.
17. Maintain the sign plumb, level and free of graffiti for the duration of the work.
18. When directed, at completion of project, remove sign from property.
19. This work will be paid for at the contract unit price per each (EACH) PROJECT INFORMATION SIGN installed in place.

CXXV. TRAFFIC SIGNAL – DETECTION AND INTERCONNECTION

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.
- B. Additions:
1. The Contractor shall maintain existing traffic signals in operation until such time that progress of the work necessitates their removal. Any new installation shall not interfere with the operation of the existing signal.
 2. All signal equipment shall be compatible with the existing Econolite system software currently utilized by the City of South Bend.
 3. All electrical wiring and/or fiber optic terminations and splices; testing and turn-on of all operational apparatus at each location shall be done by or in the presence of an employee of the Contractor who holds a Level II Traffic Signal Electrician certification granted by the International Municipal Signal Association. Prior to starting work, the Contractor shall provide the names of the Level II Traffic Signal Electricians and Level I Work Zone Safety Specialists who have been assigned to perform signal related work and a photocopy of each person's certification card.
 4. All traffic signal support structures, including poles, signal and luminaire arms, luminaires, pedestrian signal heads and controller cabinets shall be black in color using a factory-applied polyester power coat finish.
 5. Traffic signals located at the intersections of Main/Barbie, Michigan/Barbie, and Main/Chippewa are connected to a traffic signal interconnection network that passes through the fiber optic traffic signal controller cabinet located at the Michigan/Chippewa intersection. Removal of the Michigan/Chippewa cabinet is included in this contract and requires the reconnection of the traffic signal fiber optic cable from the Main/Barbie, Michigan/Barbie, and Main/Chippewa traffic signals to the remainder of the interconnection network located north of the Michigan/Chippewa intersection. This work will include but is not limited to the following:
 - a. Plastic conduit (2-inch) and single-mode fiber optic cable between the existing traffic signal controller located at the intersection of Michigan Street / Ewing Avenue and the existing traffic signal controller located at the intersection of Main Street / Chippewa Avenue (approximately 5,800 LFT).
 - b. Plastic conduit (2-inch) and multi-mode fiber optic cable between the existing traffic signal controller located at the intersection of Michigan Street / Ewing Avenue and the existing traffic signal controller located at the intersection of Main Street / Chippewa Avenue (approximately 1,500 LFT).
 - c. Handholes are required every 300 LFT. Existing handholes shall be used where available. A 10 LFT slack coil of fiber optic cable shall be included in each handhole. Placement of new handholes shall be approved by the Engineer prior to construction.
 6. The Contractor shall connect the existing traffic signals located at the intersections of Main Street / LaSalle Avenue and Michigan Street / Navarre Street shall with new, continuous fiber optic cable. This work will include but is not limited to the following:
 - a. Plastic conduit (2-inch) and multi-mode fiber optic cable between the existing traffic signal controller located at the intersection of Main Street / LaSalle Avenue and the existing traffic signal controller located at the intersection of Michigan Street / Navarre Street (approximately 2,000 LFT).

- b. Handholes are required every 300 LFT. Existing handholes shall be used where available. A 10 LFT slack coil of fiber optic cable shall be included in each handhole. Placement of new handholes shall be approved by the Engineer prior to construction.
7. The Contractor shall connect the new multi-mode fiber optic cable at the Navarre Street traffic signal controller to the existing single-mode traffic signal master fiber which connects the traffic signal controller at the Michigan Street / Angela Boulevard intersection to the City's computer network.
 - a. A fiber optic signal converter will be required between the multi-mode fiber and the single-mode fiber. The fiber optic signal converter shall be as directed by the Engineer.
8. All fiber optic conduit shall be PVC, Schedule 80, or as approved by the Engineer.
9. Single-mode Fiber Optic Cable for Interconnect shall be Corning ALTOS® Single-mode 12-strand (part number 012EU4-T4101D20).
10. Multi-mode Fiber Optic Cable for Interconnect shall be Corning ALTOS® Multi-mode 12-strand (part number 012TU4-T4180D20).
11. Wire #10 shall be a pole circuit cable, THWH, No. 10 Copper, Stranded, 1/C. Contractor shall provide 3 runs of wire (load, neutral and ground) from the base to each luminaire.
12. Fiber optic cable shall be installed with tracer wire and the tracer wire shall be continuous through all handholes. All splices shall be completed by MetroNet technician with current certifications as required by the Corning Manufacturer's warranty. Contractor shall coordinate with MetroNet regarding all splicing, connections, intercepts, handhold placement, etc. which involves the fiber-optic cable.
13. All ground disturbed by the Contractor during construction of these items shall be restored to the existing condition, or better.
14. Plastic conduit will be measured by the linear foot and paid for at the contract unit price for CONDUIT, PVC, 2 IN., SCHEDULE 80 (LFT). The costs of connections to existing handholes and traffic signal controller cabinets and restoration of ground disturbed by installation will be included in the cost of this item.
15. Fiber optic cable will be measured by the linear foot and paid for at the contract unit price for TRAFFIC SIGNAL CABLE, FIBER OPTIC, SINGLE-MODE (LFT); and TRAFFIC SIGNAL CABLE, FIBER OPTIC, MULTI-MODE (LFT).
16. Handholes will be paid for at the contract unit price for HANDHOLE, TRAFFIC (EACH).
17. Insulating links, unfused connector kits, fused connector kits, etc. shall be considered incidental to the installation of traffic signal mounted luminaires and will not be measured or paid for separately.

CXXVI. FIBER OPTIC

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.
- B. Additions:

1. The fiber optic connection of the O'Brien Recreation Center, located at 321 E. Walter St., South Bend, IN 46601, is currently made to fiber optic cable dedicated to the CITY's traffic signals.
2. The contractor shall coordinate with Ben Hudson, St. Joseph County Metronet (Metronet), 574-968-5353, to have Metronet's contractor disconnect the O'Brien Center from the traffic fiber optic cable and reconnect it to the Metronet fiber optic located in the same conduit.
3. This work will not be measured, but will be paid for at the Lump Sum price bid for FIBER OPTIC, CITY PARK RECONNECTION.
4. The Contractor shall relocate Metronet facilities in the area of the Marion Roundabout (Division B, Part 2 of 3) as shown in the plans. Relocation work shall only be performed by a contractor approved by Metronet.
5. Payment for the relocation of Metronet facilities as described above will be made at the unit price set forth in the proposal for FIBER OPTIC, RELOCATE (LFT) which shall include all labor, materials and incidentals to complete the work in place. Modifications to handholes will not be paid for directly but shall be considered incidental to the work.

CXXVII. CROSSWALK SYSTEM – FLUSH BI-DIRECTIONAL FIXTURE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807.
- B. Additions:
 1. The work shall include all incidentals for materials, labor, installation and coordination for the installation of a flush bi-directional fixture at the crosswalks as shown on the plans.
 2. The fixture shall be model FI-TS601YL as marketed by Traffic Safety Corporation or approved equal. In order to be considered equal, the alternate fixture shall satisfy the following requirements.
 3. Construction - The fixture shall be bi-directional and of modular design comprised of a top casting and two (2) pre-focused optical cartridges made of high tensile strength aluminum alloy. The fixture shall be 0.00" above grade when mounted in the factory supplied mounting base. The diameter of the fixture shall not exceed 8" and all mounting hardware shall be stainless steel.
 4. Durability - The fixture shall withstand a static load of 44,000 lb. without sustaining permanent deformation or cracking of materials. Leads, gaskets, etc. shall be rated to withstand 300 degrees F.
 5. LED/Light Cartridge – Each lens shall be molded of high performance optical grade glass and formed in a removable factory sealed optical cartridge. Two cartridges required per fixture. Each cartridge consumes 2.5 watts per cartridge (5 watts per fixture) during the activation period of the fixture.
 6. Photometric Performance – The fixture shall have both daytime and nighttime visibility exceeding that of a 50-watt halogen lamp, using a yellow light.
 7. Finish – The fixture shall be anodized natural aluminum and be dark grey in color.
 8. Mounting Base – Fixtures shall be installed in a mounting base (TSC's #BA-725-5-2MR) of high strength steel, hot dip galvanized after fabrication per ASTM-153 specifications,

with a 7.25" diameter bolt circle, a 0.75" mud ring, and standard base depth of 5". The mud ring shall be detachable from the base. Mounting base without mud ring shall be made available upon request. The base shall be supplied with stainless steel bolts and a plywood cover to protect the mounting flange during installation. The height of the base shall be adjustable using spacers or extensions to facilitate roadway resurfacing.

9. Warranty - The fixture shall be warranted against defects in workmanship and materials for one year from date of shipment and is eligible for TSC's 5-Year Limited System Warranty.
10. Crosswalk System - Flush Bi-Directional Fixture shall be measured and paid as indicated on the itemized proposal sheet. The costs of materials, labor, equipment, and all other incidental materials necessary for the completion of the Crosswalk System shall be included in the cost of the pay item.
11. The work shall be measured and paid by Each at the contract unit price for "Crosswalk System - Flush Bi-Directional Fixture....EACH" as indicated on the itemized proposal sheet.

CXXVIII. CROSSWALK SYSTEM – FLASHING PEDESTRIAN SIGN

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807.
- B. Additions:
 1. The work shall include all incidentals for materials, labor, installation and coordination for the installation of a flashing pedestrian sign at the crosswalks as shown on the plans.
 2. The fixture shall be model SI-TS30W11230-DC (W11-2) as marketed by Traffic Safety Corporation or approved equal. In order to be considered equal, the alternate fixture shall satisfy the following requirements.
 3. Compliance – MUTCD Section 2A.07 and 2A.08 compliant.
 4. Construction - .080 highway grade aluminum and stainless fasteners and Tufnut security mounting hardware.
 5. LED Lighting:
 - a. White LEDs standard.
 - b. LED shall be 1 ¼" bullet style in sign perimeter border
 - c. Flash rate – 50 to 60 times per minute
 - d. LED life expectancy over 100,000 hours
 - e. Visible up to 2 miles away
 - f. Field replaceable grommet mounted lights
 - g. Sealed DOT approved lighting
 6. Circuitry Technology – Sealed PCD technology

7. Crosswalk System - Flashing Pedestrian Sign shall be measured and paid as indicated on the itemized proposal sheet. The costs of materials, labor, equipment, and all other incidental materials necessary for the completion of the Crosswalk System shall be included in the cost of the pay item.
8. The work shall be measured and paid by EACH at the contract unit price for "Crosswalk System - Flashing Pedestrian Sign....EACH" as indicated on the itemized proposal sheet.

CXXIX. CROSSWALK SYSTEM CONTROLLER

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807.
- B. Additions:
 1. The work shall include all incidentals for materials, labor, installation and coordination.
 2. The system controller shall be model SC-TS1000AC1A2 as marketed by Traffic Safety Corporation or approved equal. In order to be approved equal, the proposed device must satisfy the following requirements:
 - a. System controller shall support multiple MUTCD compliant regular and enhanced flash patterns, and be capable of auto-sequencing through all enhanced flash patterns, one pattern per activation period.
 - b. Control cabinet specified shall contain both controllers for north and south crosswalk systems.
 3. Output pattern operation, power limitations and output flash pattern selection:
 - a. Output A (Primary DC Power Output)
 - (i) The maximum DC power output of the primary (10 amp limit) shall be 120 watts (150 watts for high-power model).
 - (ii) The output flash pattern shall be selected by the pattern selector control located on the control card.
 - b. Output B (Secondary DC Power Output)
 - (i) The maximum DC power output of the secondary (10 amp limit) shall be 120 watts (150 watts for high-power model).
 - (ii) The output flash pattern shall be selected by a set of output mode selector switches (1-4) located on the control card: 1-Same as primary; 2-In sync with primary, but non-enhanced; 3-Non-enhanced complement of primary; 4-Continuously on while primary is flashing.
 - (i) Enhanced flash patterns cannot be used when operating in wig-wag mode.
 - (ii) Only one output mode switch can be on (closed) at a time for proper operation of the system.
 - c. The combined output power of the primary and secondary DC outputs shall be 120 watts (300 watts for the high-power model).

- d. A dual AC output option shall be available. The AC outputs shall be in sync with the primary and secondary DC outputs. The output power capability on each output shall be limited to 360 watts (120 volts x 3 amps). Enhanced flash patterns cannot be used when operating in the wig-wag mode.
4. System controller shall be based on an integrated, high-speed 8-bit microcontroller with non-volatile firmware and memory. All settings must be retained in the event that input power is removed.
5. System controller shall include the following controls and indicators:
 - a. Power LED Indicator: A visual indicator LED shall be provided to indicate the "power on" condition.
 - b. Activation Duration Setting: Activation duration shall be field adjustable in one-second increments, over a range of 1 to 99 seconds. Duration setting shall be displayed on a digital numeric display.
 - c. Flash Pattern Setting: Flash pattern setting shall be field adjustable and be displayed on a digital numeric display.
 - d. Push-Button Test and LED Indicator: System shall include an internal push-button used to activate the system during field tests. System shall include a visual indicator LED to indicate internal push-button and external activation device calls.
 - e. Override Switch: System shall include an override switch to allow switching from manual system activation to continuous system activation.
 - f. Output LED Indicators: System shall include visual indicator LEDs which indicate: system activation, primary output (A), and secondary output (B) status.
6. System shall support activation from standard contact-closure type push-buttons, push-buttons with audio message capability, and passive pedestrian sensors.
7. System shall provide a field selectable option to allow an activation call to be ignored, or be used to reset the cycle during an ongoing crossing cycle.
8. System Protection: All DC outputs shall be protected with a replaceable fuse. In the AC powered model, the input AC voltage shall be protected by a thermal-magnetic circuit breaker integral to the AC power supply. The AC power supply shall include transient surge protection. All DC electronics shall be electrically isolated from the AC input voltage.
9. System Controller Enclosure: The system shall include a single enclosure for ease of installation. The system shall be housed in a NEMA 4 compliant, aluminum enclosure with a thickness of 0.125" and with approximate dimensions of (20" H x 16" W x 7.32" D, mounting tabs add an additional 3" in height) to provide protection from adverse weather conditions. The enclosure shall have a mill finish and be supplied with NEMA 4 compliant lock for security from unauthorized access, and come with a minimum of one key.
10. Warranty: The crosswalk system controller shall be warranted against defects in workmanship and materials for one year from date of shipment and is eligible for TSC's 5-Year Limited System Warranty.
11. Exposed cabinet shall be painted color brown to match adjacent wall.

12. Crosswalk System – Crosswalk System Controller shall be measured and paid as indicated on the itemized proposal sheet. The costs of materials, labor, equipment, and all other incidental materials necessary for the completion of the Crosswalk System shall be included in the cost of the pay item.
13. The work shall be measured and paid by EACH at the contract unit price for “Crosswalk System - Controller....EACH” as indicated on the itemized proposal sheet.

CXXX. CROSSWALK SYSTEM – PEDESTRIAN PUSH-BUTTON SYSTEM

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807.
- B. Additions:
 1. The work shall include all incidentals for materials, labor, installation and coordination.
 2. The system controller shall be model AC-BDL3FS-B (Bulldog III Push-button Station) as marketed by Traffic Safety Corporation or approved equal. In order to be approved equal, the proposed device must satisfy the following requirements:
 - a. Bulldog III Push-Button Station includes: an instructional sign, a push-button, and push-button frame.
 - b. Superior die-cast aluminum, powder-coated body - independently lab tested to NEMA 250 (6P) specifications.
 - c. 316 Marine grade stainless steel button cap far exceeds the durability of competing products.
 - d. 2" ADA compliant button withstands severe impact from baseball bats, skate boards, hockey sticks, etc.
 - e. Button places a call with less than two pounds of force.
 - f. Button requires push action to activate - cannot be jammed or stuck on.
 - g. Wide operating temperature range of -30° to 165°F (-34° to 74°C).
 - h. Ultra-durable, long-life - tested to 300 million operations.
 - i. Transient protection meets and exceeds NEMA specifications - independently lab tested and certified.
 3. Pedestrian Push Button Station shall be mounted on decorative post and base per manufacturer's specification.
 4. Warranty: The push-button station shall be warranted against defects in workmanship and materials for one year from date of shipment and is eligible for TSC's 5-Year Limited System Warranty.
 5. Crosswalk System – Pedestrian Bush-Button System shall be measured and paid as indicated on the itemized proposal sheet. The costs of materials, labor, equipment, and all other incidental materials necessary for the completion of the Crosswalk System shall be included in the cost of the pay item.

6. The work shall be measured and paid by EACH at the contract unit price for “Crosswalk System – Pedestrian Bush-Button System....Each” as indicated on the itemized proposal sheet.

CXXXI. HANDHOLES

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807.
- B. Additions:
 1. Handholes will be paid for at the contract unit price for “Handhole ...EACH” as indicated on the itemized proposal sheet.

CXXXII. WIRE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807.
- B. Additions:
 1. Wire will be paid for at the contract unit price for “NO. gauge WIRE...LFT” as indicated on the itemized proposal sheet.

CXXXIII. CONDUIT, PVC, SCHEDULE 80

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807.
- B. Additions:
 1. The cost to push the conduit will not be paid for separately but shall be included in the cost of the conduit, complete and in place.
 2. Conduit will be paid for at the contract unit price for CONDUIT, PVC, SCHEDULE 80 (DIA.) IN. (LFT) as indicated on the itemized proposal sheet and shall include all costs to install the conduit, complete and in place.

CXXXIV. SERVICE PEDESTAL

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805, 807.
- B. Additions:
 1. The electric service pedestals shall be a City of South Bend approved enclosure as manufactured by Tesco Controls, Inc. Location of single and dual meter service pedestals are provided in the plans.
 2. Cabinet foundation, wiring and all connections necessary are included in this pay item.
 3. Traffic signals shall remain in operation at all times during installation of service pedestals.
 4. The Contractor shall extend the wiring from the existing signal cabinet to the new service pedestal in new conduit.
 5. The removal of the existing service from the existing controller cabinet as shown on the plans will not be paid for separately but shall be included in the cost of this pay item.

6. The Contractor shall provide additional breaker within enclosure for additional electrical panel at each roundabout were service pedestals are called for in the plans.
7. The electric service point shall be paid for at the contract unit price for TESCO CABINET WITH SINGLE SERVICE, FOUNDATION, WIRING, ETC. or TESCO CABINET WITH DUAL SERVICE, FOUNDATION, WIRING, ETC as indicated on the itemized proposal sheet.

CXXXV. ELECTRIC SERVICE POINT

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807.
- B. Additions:
 1. The electric service point shall be a City of South Bend approved enclosure as manufactured by Tesco Controls, Inc.
 2. The Contractor shall provide additional breaker within enclosure for additional electrical panel in roundabout.
 3. The electric service point shall be paid for at the contract unit price for ELECTRIC SERVICE POINT, TESCO, SINGLE METER (EACH), and ELECTRIC SERVICE POINT, TESCO, DUAL METER (EACH) as indicated on the itemized proposal sheet.

CXXXVI. POST MOUNTED RECEPTACLE IN GROUND

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807
- B. Additions:
 1. Contractor shall refer to lighting schedule shown on plans for light base, poles, and heads for both Divisions 1 & 2.
 2. Post Mounted Receptacle in Ground material and installation shall match existing and per plan details.
 3. Light Standards for Division 1 & 2 will be paid for at the contract unit prices as follows, and as indicated on the itemized proposal sheet. The costs of materials, labor, equipment, and all other incidental materials necessary for the completion of site lighting and electrical receptacles shall be included in the cost of the pay item.
 - a. Post Mounted Receptacle in Ground, New EACH

CXXXVII. STREET LIGHTING

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807
- B. Additions:
 1. The Contractor shall provide a dual meter, City of South Bend approved enclosure as manufactured by Tesco Controls, Inc.
 2. Provide additional breaker within enclosure for additional electrical panel in roundabout.
 3. Street Lights shall be spaced and constructed per plans and have features as listed below, or approved equal:

- a. Manufacture Description:
 - (i) Sternberg Ornamental Pole: 5726FP6/BCC/GFI/BK to include the following:
 - (i) (1) DBA/BK: Double banner arms mount on street side of the pole for an 18" x 36" banner.
 - (ii) (1) RSA-6/BK: Roadway arm
 - (iii) (1) 1910LED/5LB/6236UPM/4A1R45T5/ML/BK: Sidewalk down lighting at 14'.
 - (ii) Hubbell Outdoor LED R60 Series Lighting: (1) RL-60LU-4K-3-2-F1-BL
 - b. Construction:
 - (i) Base shall be one-piece cast aluminum with an integral floor.
 - (ii) All exterior fasteners shall be stainless steel and painted to match the pole.
 - (iii) Poles shall be cast aluminum.
 - (iv) Finish shall be black.
 - c. Supplier:
 - (i) "ESL-Spectrum" Mishawaka, IN. (574) 255-2151, or approved equal.
4. Pedestrian Lights shall be spaced and constructed per plans had have features as listed below, or approved equal:
- a. Manufacture Description:
 - (i) Sternberg Ornamental Pole: 5718FP6/BCC/GFI/BK to include the following:
 - (i) (1) DBA/BK: Double banner arms mount on street side of the pole for an 18" x 36" banner.
 - (ii) (1) 1910LED/5LB/6236UPM/4A1R45T5/ML/BK: Sidewalk down lighting at 14'.
 - b. Construction:
 - (i) Base shall be one-piece cast aluminum with an integral floor.
 - (ii) All exterior fasteners shall be stainless steel and painted to match the pole.
 - (iii) Poles shall be cast aluminum.
 - (iv) Finish shall be black.
 - c. Supplier:
 - (i) "ESL-Spectrum" Mishawaka, IN. (574) 255-2151, or approved equal.
5. Street lights and pedestrian lights shall be mounted to a round concrete foundation as shown on plans. If the sidewalk is adjacent to the back of curb or does not exist, remove

sidewalk down lighting from street light and replace with cover plate. Any removed down lights shall be delivered to the City of South Bend Bureau of Traffic and Lighting.

6. WIRE #4 shall be 4-1/C, No. #4, THWH, Colored, Stranded Copper in Cable-Duct to be placed in a trench or conduit. Conduit shall be PVC Schedule 80, 2-Inch. The color coding of the insulation shall include one black, one white, one red and one green. The wiring shall be installed using the black wire for circuit connections, 1, 3 and 5; the red wire for circuit connections 2, 4 and 6. The white wire for neutral and the green wire for earth ground.
7. Circuit C shall be placed on a separate meter from Circuits A & B.
8. WIRE #10 shall be a pole circuit cable, THWH, No. 10, Copper, Stranded, 1/c. Contractor shall provide (3) runs of wire, (load, neutral and ground) going from the base to each luminaire.
9. The Contractor is advised to order street lighting materials as soon as possible due to the project schedule.
10. The Contractor shall deliver a total of (3) additional street lights and (1) additional pedestrian light, to be used as spares, to the City of South Bend Bureau of Traffic and Lighting. Spares shall be both the pole and luminaire and any finials, fittings, covers, etc. necessary to have a complete assembly. Final payment will not be released until all spare parts are delivered.
11. The Contractor shall arrange for Indiana Michigan (AEP) Power Company to provide electrical service. The service point shall consist of a Tesco Industrial Control Panel, South Bend Dual Meter Standard, with foundation. Underground cable duct shall be supplied from AEP's utility pole to the base of the Tesco Industrial Control Panel in accordance with South Bend Dual Meter Standard detail. No measurement will be made of cable duct where it is part of the service point.
12. Electrical wiring shall be continuous from the point of service to street light foundation and from street light foundation to street light foundation. Splices shall be made in access panel located at base of the light pole. Contractor shall replace the entire conduit and/or wiring cable from cabinet to street light foundation or from street light foundation to street light foundation that is cut or damaged during construction at no additional cost to the Owner.
13. No connections using wire nuts shall be allowed.
14. Connectors and Fittings shall not be measured or paid for directly, but shall be considered incidental to the project.
15. The Tesco enclosure shall be paid for at the contract unit price for TESCO CABINET WITH SINGLE SERVICE, FOUNDATION WIRING, ETC (EACH) as indicated on the itemized proposal sheet.
16. This work will be paid for at the contractor unit price per each (EACH) of CABLE-DUCT MARKER, LIGHTING HANDHOLE, LIGHTING FOUNDATION, SERVICE POINT, STREET LIGHT, PEDESTRIAN LIGHT; WIRE #4 (LFT); WIRE #10 (LFT); AND CONDUIT, LIGHTING (LFT) which price shall constitute all labor, materials and incidentals to complete the work in place.

CXXXVIII. LIGHT STANDARDS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807

B. Additions:

1. Manufacturer Description:

a. Type A:

- (i) Kim Lighting. Cat. 1A-CCS21A3E35-120L5KXXX-WH-6" ARM WITH RTSP16-6.6-11-WHT-DM10-BC-PSAB (ESL Spectrum Ltg. (574) 255-2151) One – 6" bracket arm, or approved equal.
- (ii) Lamp: Single Head Led 10258 Lamp Lumens, 5,000k, Type III Distribution.
- (iii) Finish to be: White
- (iv) Voltage: 277V
- (v) Pole shall be: Round Tapered Steel

b. Type B:

- (i) Beacon Lighting. Cat. WIN40/AF/36NB-80/3K/UNV/DIR4/PT/BBT, (2) AA-0024/5MTC/BA/2X/BBT (ESL Spectrum Ltg. (574) 255-2151), or approved equal.
- (ii) Lamp: LED 3,000K, Type IV Distribution.
- (iii) Finish to be: Black, to Match Existing
- (iv) Voltage: 120V
- (v) Windsor Series Single Led Fixture With 16 Ft Pole, Aluminum Fluted, Semi Recessed Duplex GFI Recept. With In-Use Weatherproof Cover With Double Banner Arms. Color Black

c. Type C:

- (i) Beacon Lighting. Cat. WIN40/AF/36NB-80/3K/UNV/DIR4/PT/BBT, (2) AA-0024/5MTC/BA/BBT, CENB/F/16/5M/TN/GFI-IU/BBT (ESL Spectrum Ltg. (574) 255-2151), or approved equal.
- (ii) Lamp: LED 3,000K, Type IV Distribution.
- (iii) Finish to be: Black, to Match Existing
- (iv) Voltage: 120V
- (v) Windsor Series Single Led Fixture With 16 Ft Pole, Aluminum Fluted, Semi Recessed Duplex GFI Recept. With In-Use Weatherproof Cover With Double Banner Arms. Color Black

d. Type D:

- (i) Beacon Lighting. Cat. (2) WIN40/AF/60NB-136/3K/DIR3/PT/BBT, (2) AA-0024/5MTC/BA/BBT, AA-65/F/5/C/T/BBT, CENB/F/23/5M/TN/GFI-IU/BBT.
- (ii) Lamp: LED 3,000K, Type III Distribution.
- (iii) Finish to be: Black, to Match Existing
- (iv) Voltage: 120V
- (v) Windsor Series Twin Head Led Fixture, Twin Head Bracket With 23 Ft Pole, Aluminum Fluted, Semi Recessed Duplex GFI Recept. With In-Use Weatherproof Cover With Single Banner Arms. Color Black

e. Type E:

- (i) Beacon Lighting. Cat. WIN40/AF/36NB-80/3K/UNV/DIR3/PT/BBT, (2) AA-0024/5MTC/BA/2X/BBT, CENB/F/16/5M/TN/GFI-IU/BBT (ESL Spectrum Ltg. (574) 255-2151), or approved equal.
- (ii) Lamp: LED 3,000K, Type III Distribution.
- (iii) Finish to be: Black, to Match Existing.
- (iv) Voltage: 120V
- (v) Windsor Series Single Led Fixture With 16 Ft Pole, Aluminum Fluted, Semi Recessed Duplex GFI Recept. With In-Use Weatherproof Cover With Single Banner Arms. Color Black

f. Type F:

- (i) Kim Lighting. Cat. EL218F3-8L3KUV-BL, SM18-BL-P (ESL Spectrum Ltg. (574) 255-2151).
 - (ii) Lamp: LED 3,000K, Micro Floodlight.
 - (iii) Finish to be: Black
 - (iv) Base color: Black
- g. Type G:
- (i) Beacon Lighting. Cat. CDT/24NB/55/3K/5x3/UNV/BBT/HV (Cadet Floodlight), Kim Lighting Base Cat. SM18/BL/P (Light Base) (ESL Spectrum Ltg. (574) 255-2151).
 - (ii) Lamp: LED 3,000K, Cadet Floodlight.
 - (iii) Finish to be: Black
 - (iv) Base color: Black
- h. Light Standards shall include the cost of the pole, one LED luminaire mounted on the pole, bracket arms, all wiring in the pole from the base to the luminaire and all connections required to complete the wiring in the base of the pole, material, labor, equipment and appurtenances, complete in place and operational.
- i. The accepted quantities of the specified light standards will be paid for at the contract unit price per each for LIGHT STANDARD, TYPE as indicated on the itemized proposal sheet.

CXXXIX. LIGHT POLE FOUNDATION

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807
- B. Additions:
 - 1. Each Street Light and Drive light will be mounted on a concrete foundation, as shown on the plans.
 - 2. The contractor is advised to order lighting materials as soon as possible due to the project schedule limits.
 - 3. The cost of the Light Pole Foundation shall include the anchor bolts, reinforcing steel, grounding, concrete, materials, labor, equipment and appurtenances required to construct the foundation complete and in place.
 - 4. Light Pole Foundation will be paid for at the contract unit price for "Light Pole Foundation...EACH" as indicated on the itemized proposal sheet.

CXL. ORNAMENTAL LIGHTING

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 807.
- B. Additions:
 - 1. This work shall consist of purchasing and installing street light poles and ornamental street light luminaires.
 - 2. All materials shall be in accordance with Section 807.03 and as specified below:
 - a. Single Light Pole, 18' Pole and Post Mounted Luminaire:
 - (i) Centennial AB Post Model #CEAB/05/BB aluminum fluted pole with banner arms

and duplex GFI receptacle at top of pole as manufactured by:

(i) Beacon Products, 2041 58th Avenue Circle East, Brandenton, FL 34203
Phone: (800) 345-4928

b. Twin Light Pole, 18' Pole and 16 1/2" Bracket Mounted Luminaires:

(i) Centennial AB Post Model #CEAB/05/BB aluminum fluted pole with banner arms and duplex GFI receptacle at top of pole as manufactured by:

(i) Beacon Products, 2041 58th Avenue Circle East, Brandenton, FL 34203
Phone: (800) 345-4928

c. Luminaire, Ornamental, (LED Lamp Sources, 120V):

(i) Windsor Luminaire Model # WIN30/AC/36NB-80/5K/UNV/DIR4/PT/SPK/BBT aluminum luminaire as manufactured by:

(i) Beacon Products, 2041 58th Avenue Circle East, Brandenton, FL 34203
Phone: (800) 345-4928

3. All poles, arms, and appurtenances shall be corrosion resistant, primed and painted with Black powder-coated paint. Powder coating material shall be a thermosetting polyester powder coating with a minimum coating thickness of 2.0 mils. Powder coating application shall be electro-statically applied.
4. All light poles shall include duplex GFI receptacles. Receptacles shall be on separate circuits as shown in plans from luminaires in order for them to be turned off when not in use.
5. All conduits shall house one 4-1/c No. 4 CU Conductor for service to luminaires and a second 4-1/c No. 6 CU Conductor to service GFI receptacles. In areas where two circuits run parallel, they shall be located in the same trench.
6. The Contractor is advised to order street lighting materials as soon as possible due to the project schedule.
7. The Contractor shall deliver a total of (12) additional single poles and luminaires and (6) additional dual poles and luminaires, to be used as spares, to the City of South Bend Bureau of Traffic and Lighting. Spares shall be both the pole and luminaire and any finials, fittings, covers, etc. necessary to have a complete assembly. Final payment will not be released until all spare parts are delivered.
8. The Contractor shall coordinate with Indiana Michigan (AEP) Power Company to maintain existing lighting until new lighting is in place. The Contractor shall ensure that all lighting will be operational concurrent with construction phasing.
9. All lighting service points shall be housed in the same TESCO cabinet as traffic signal service points. See signal specifications for details on TESCO cabinets.
10. Construction requirements shall be as described in Section 807. Contractor shall submit all manufacturers' descriptive and technical literature for approval by Engineer prior to ordering material.
11. Prior to fabrication, five (5) sets of shop drawings for each light pole, arm, and luminaire shall be submitted in accordance with 711.05.

12. Measurement shall be per section 807.18 as applicable to these plans and specifications. No direct measurement shall be made for the miscellaneous electrical items required to properly install the system not defined by specific pay items. The cost of miscellaneous electrical items, including wiring, in-line fuse, grounding rods, photocells, lighting circuits, mounting brackets and conductors, shall be included in the cost of the pay items for light poles, luminaires, foundations, and conduit.
13. The accepted quantities of light poles, luminaires, and foundations will be paid for at the contract unit price per each installed. The accepted quantities of conduit and cable duct will be paid for at the contract unit price per linear foot. Payment will include all manufacturing, delivery, miscellaneous equipment and installation required for a complete installation.
 - a. Payment for items in this unique special provision will be made under:

(i) LIGHT POLE, ORNAMENTAL, SINGLE	EACH
(ii) LIGHT POLE, ORNAMENTAL, TWIN	EACH
(iii) LUMINAIRE, ORNAMENTAL	EACH

CXLI. PAVEMENT MARKINGS FOR TRAFFIC MAINTENANCE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 801
- B. Additions:
 1. The Contractor shall furnish all necessary equipment, labor and materials required to remove existing pavement markings and restore pavement markings where removed as required for Maintenance of Traffic.
 2. Temporary painted traffic markings shall not be used on any finished pavement surfaces within the project limits.
 3. Restoration of pavement markings impacted by maintenance of traffic will not be measured for payment, but shall be included in the cost of MAINTAINING TRAFFIC (LS).

CXLII. PAVEMENT MESSAGE MARKINGS FOR CYCLE TRACK

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 808
- B. Additions:
 1. The Contractor shall furnish all necessary equipment, labor and materials required to apply decorative pavement markings along the bicycle paths and shared or separated cycle tracks as shown on the plans.
 2. Pavement marking materials and construction requirements shall be in accordance with the INDOT Standard Specifications.
 3. Pavement message markings placed will be paid for at the contract unit price per each, for the material and message or symbol specified.
 - a. Payment for items in this unique special provision will be made under:

(i) PAVEMENT MESSAGE MARKING, MULTI-COMPONENT, SHARED CYCLE TRACK SYMBOL	EACH
(ii) PAVEMENT MESSAGE MARKING, MULTI-COMPONENT,	

CYCLE TRACK SYMBOL

EACH

4. No additional payment will be made for the removal and or replacement of markings that fail to meet the performance or warranty conditions of 808.07 and 808.09. Beads, binder material, pavement cleaning and surface preparation, and all necessary incidentals shall be included in the cost of the pay items.

CXLIII. THERMAL DETECTION CAMERA SYSTEM

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.

B. Additions:

1. This work shall consist of a fully operational thermal detection camera and detection system as described herein, as shown on the plans, or as otherwise directed. The video vehicle detector system is comprised of thermal video image sensors (cameras), a machine vision processor and the required cabling. The system should be capable of monitoring vehicles on a roadway via processing of video images and shall provide detector outputs to a traffic signal controller.
2. The system shall include a minimum of two (2) thermal image sensors (cameras), the machine vision processor, set up and operating software, all connectors, and miscellaneous equipment necessary for the installation and operation of the system.
3. A 5-year operational warranty or standard manufacturer's warranty, whichever is longer, shall be provided for each machine vision processor and the thermal image sensors (cameras).
4. Specified Operating Conditions:
 - a. Thermal Image Sensors (Cameras):
 - (i) Operating Temperature Range:
 - (i) -50C to +75C continuous operation
 - (ii) -40C to +75C cold start
 - (ii) Array Format 320x240
 - (iii) Dual Connectivity: BNC and Connector-Free Video cable terminal Strip
 - (iv) Composite Video: NTSC or PAL
 - (v) Input Voltage: 90-240 VAC single phase
 - b. Machine Vision Processor:
 - (i) Operating Temperature Range: -34C to +74C
 - (ii) Power: 12 to 24 VDC, 11W maximum
 - (iii) Video Input: PAL, CCIR, NTSC or RS170
 - (iv) Video Output: PAL or NTSC, Mpeg-4 digital streaming video
5. The accepted quantity of thermal image sensing cameras will be paid for at the contract unit price per each for THERMAL DETECTION CAMERA. The accepted quantity of thermal machine vision processors will be paid for at the contract unit price per each for THERMAL DETECTION SYSTEM.
6. The cost of furnishing and supplying the material, labor, equipment, foundation, and necessary incidentals shall be included in the cost of the pay items.

CXLIV. SERVICE PEDESTAL

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.

B. Additions:

1. The work shall consist of a fully operational low-profile underground service distribution and control pedestal for traffic signal and overhead lighting power service as shown on the plans or as otherwise directed. This includes the foundation, and all required wiring and connections. Locations where a single or double meter should be provided are shown in the plans. The pedestal shall be constructed of the highest grade of material using standard 12 gauge hot dipped galvanized steel, painted black (FS 17038). The power distribution panel shall be 1, 2, or 3 pole and provide a separate metered main, lighting main & disconnects as required. Circuit breakers should be installed in a vertical position, handle up for on, handle down for off and be industrial grade, fully rated.
2. The pedestal shall have a distribution and control panel with a hinged deadfront safety door panel. The cabinet shall be completely pre-wired in the factory to NEMA IIB standards showing connections to external equipment. All control wiring shall be 19 strand #12 or #14 AWG MTW and all terminals shall be permanently labeled.
3. The traffic signal shall remain in operation at all times.
4. The Contractor shall extend the wiring from the existing cabinet to the new cabinet in new conduit.
5. The accepted quantity of service pedestals will be paid for at the contract unit price per each for TESCO CABINET.
6. The removal of the existing service from the existing controller cabinet as shown on the plans will not be paid for separately but shall be included in the cost of this pay item.

CXLV. SIGNAL FIBER OPTIC INTERCONNECT CABLE

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.

B. Additions:

1. The contractor shall maintain the existing traffic signal interconnect between adjacent traffic signals cabinets/controllers and the City of South Bend network.
2. The existing interconnect type is fiber optic. The location of the interconnect is not known throughout the project limits due to the detail and limits of survey obtained for this job, therefore, extreme care shall be used to verify and maintain existing interconnect without damage.
3. Locations where traffic signal cabinets are to be relocated, the existing interconnect shall be located/verified and relocated/reconnected as necessary. The City shall provide splicing details as needed for all new drop cables.
4. In locations where traffic signal cabinets are to be removed, the existing interconnect shall be maintained to allow for the traffic signal system continuity of operations.

CXLVI. CLEAN AND PAINT EXISTING SIGNAL EQUIPMENT

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.

B. Additions:

1. All new, relocated, and relocated mast arm assemblies, traffic signal cabinets, and pedestal poles located north of Sample Street shall be powder coated black (FS 17038).
2. Painting shall be paid for at the contract unit price for "Clean and Paint Existing Signal Equipment LF" as indicated on the itemized proposal sheet.

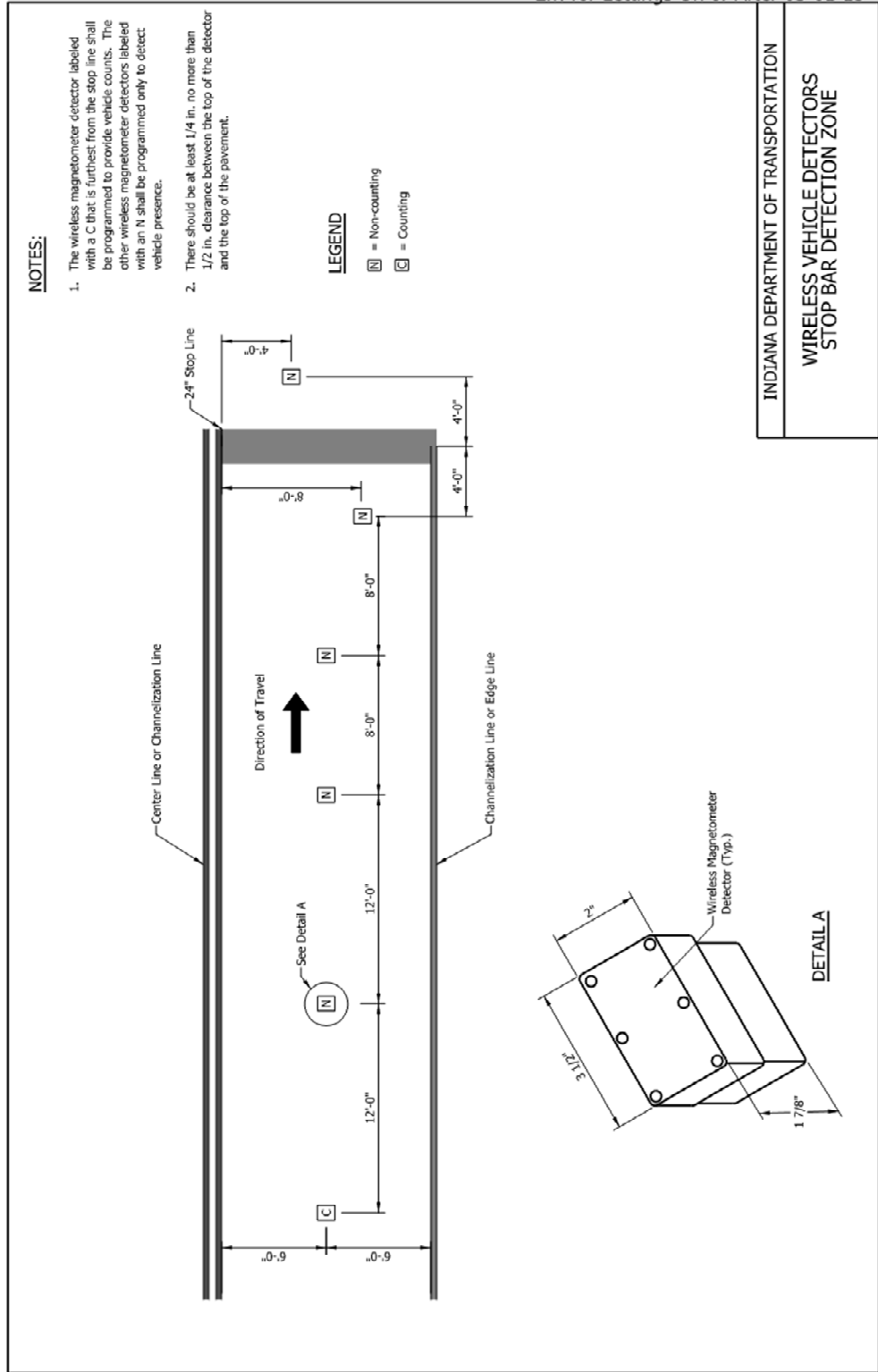
CXLVII. WIRELESS VEHICLE DETECTION SYSTEM

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.

B. Additions:

1. This work shall consist of furnishing and installing wireless vehicle detection systems for vehicle detection at traffic signals as identified on the plans.
2. The wireless vehicle detection system (WVDS), is comprised of wireless magnetometer detectors, contact closure cards, receiver processors, and wireless repeaters installed for a signalized intersection. The system shall be capable of monitoring vehicles on a roadway via detection of changes in inductance caused by the presence or passage of a vehicle and shall provide detector outputs to a traffic signal controller.
3. The WVDS shall include magnetometer detectors, a minimum of two receiver processors, the required mounting equipment, cables, rack mounted cards, set-up and operating software, all connectors, and miscellaneous equipment necessary for the installation and operation of the system. If required, the WVDS shall also include wireless repeaters.
4. Only models from the Department's approved materials list for traffic signal control equipment shall be used.
5. Ethernet cable for wireless vehicle detectors shall be outdoor rated and UV shielded.
6. Prior to the installation, the Contractor shall test all wireless magnetometer detectors and demonstrate proper operation and communication between the wireless magnetometer detectors and the receiver processor and wireless repeater, if required.
7. Prior to the installation, the Contractor shall demonstrate that each wireless magnetometer detector is within range of its corresponding receiver processor, using wireless repeaters as necessary. All wireless magnetometer detectors assigned to either a receiver processor or wireless repeater shall be located within a 120° arc measured from the receiver processor or wireless repeater.
8. The Contractor shall install each wireless magnetometer detector in the roadway according to the manufacturer's recommendations with one wireless magnetometer detector programmed to count vehicles for each through travel lane. Holes cored in the pavement shall be cleaned and dried before installing wireless magnetometer detectors. The cored pavement shall be backfilled according to the manufacturer's recommendations.
9. Receiver processors and wireless repeaters shall be mounted on traffic signal steel strain, or cantilever poles, or signal pedestals on type A foundations. The mounting height of receiver processors above the pavement surface shall be between 20 ft and 35 ft. The mounting height of wireless repeaters above the pavement surface shall be between 13 ft and 35 ft.

10. The minimum distance between a receiver processor and wireless repeater mounted on the same structure shall be 2 ft. This distance may be increased to enable better communication between the devices.
11. After installation, the Contractor shall demonstrate successful communication between each wireless magnetometer detector, receiver processor, and wireless repeater to the Engineer.
12. Wireless magnetometer detectors, contact closure cards, receiver processors and wireless repeaters will be measured by the number of units installed.
13. Wireless magnetometer detectors, contact closure cards, receiver processors and wireless repeaters will be paid for at the contract unit price per each:
 - a. Contact Closure CardEACH
 - b. Receiver ProcessorEACH
 - c. Wireless Magnetometer DetectorEACH
 - d. Wireless RepeaterEACH
14. The cost of coring the pavement, sealant, and all work necessary for proper installation and operation of the wireless magnetometer detectors shall be included in the cost of the wireless magnetometer detector.
15. The cost of cables, connectors, set-up and operating software, access boxes, rack mounted expansion cards, and all hardware necessary to complete the installation shall be included in the cost of the contact closure cards.
16. The cost of required mounting equipment, cables, connectors, and miscellaneous equipment necessary for proper installation and operation of the receiver processors shall be included in the cost of the receiver processors.
17. The cost of required mounting equipment, connectors, and miscellaneous equipment necessary for proper installation and operation of the wireless repeaters shall be included in the cost of the wireless repeaters.
18. Wireless detectors, where specified in the plans, shall be installed per the diagram provided on INDOT Standard Drawing E 805-T-173d.



INDIANA DEPARTMENT OF TRANSPORTATION
 WIRELESS VEHICLE DETECTORS
 STOP BAR DETECTION ZONE

E 805-T-173d

CXLVIII. TRAFFIC SIGNAL EQUIPMENT SALVAGED BY THE DEPARTMENT

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.

B. Additions:

1. The Department desires to salvage the traffic signal equipment listed below:

EQUIPMENT	EXISTING LOCATION
Pedestrian Signals	Main Street & Bronson Street
Pedestrian Signals	Main Street & South Street
Pedestrian Signals	Main Street & Monroe Street
Pedestrian Signals	Main Street & Western Avenue
Pedestrian Signals	Main Street & Wayne Street
Pedestrian Signals	Main Street & Jefferson Blvd
Pedestrian Signals	Main Street & Washington Street
Pedestrian Signals	Main Street & Colfax Avenue
Pedestrian Signals	Main Street & LaSalle Avenue
Pedestrian Signals	Michigan Street & Sample Street
Pedestrian Signals	Michigan Street & Bronson Street
Pedestrian Signals	Michigan Street & South Street
Pedestrian Signals	Michigan Street & Monroe Street
Pedestrian Signals	Michigan Street & Western Avenue
Pedestrian Signals	Michigan Street & Wayne Street
Pedestrian Signals	Michigan Street & Jefferson Blvd
Pedestrian Signals	Michigan Street & Washington Street
Pedestrian Signals	Michigan Street & Colfax Avenue
Pedestrian Signals	Michigan Street & LaSalle Avenue

2. The City desires to salvage the traffic signal equipment listed below:

EQUIPMENT	EXISTING LOCATION
Mast Arm	Main Street & Broadway Street
Mast Arm	Main Street & Calvert Street

3. Traffic signal equipment to be salvaged shall be stored and transported in accordance with 805.03. Designated locations for delivery of transported equipment shall be coordinated with the Engineer.

CXLIX. ACCESSIBLE PEDESTRIAN SIGNALS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805, 922.

B. Additions:

1. Pedestrian push buttons shall be the type designated in the contract documents, APS or Non-APS.
2. The cost of the push button, pedestrian actuated signal sign, any accessible pedestrian signal components and all hardware required to complete the installation shall be included in the cost of pedestrian push button.
3. Pedestrian push-button assemblies shall meet the standards of the MUTCD and

Americans with Disabilities Act, ADA. Pedestrian push-button assemblies shall be vandal and weather resistant, be pressure activated with minimal movement, and cannot be stuck in a closed or constant call position. A red latching LED shall be provided for confirmation of an actuation call.

4. A type D certification in accordance with 916 shall be provided. Such certification shall contain the contract number, manufacturer's name, model name, supplier's name, location or intersection name, and for a type APS pedestrian push button, the sound level measurement of the audible features of the device.
5. The pedestrian push-button housing shall be constructed of cast aluminum, cast zinc alloy, or stainless steel and powder coated yellow, and furnished with suitable mounting hardware.
6. The normal state of the LED shall be off. When the push-button is pressure activated, the LED shall be lighted and remain on until the beginning of the walk phase. The latching relay shall be mounted in the signal cabinet, controlling two pedestrian phases.
7. The actuator shall be stainless steel or aluminum with a minimum diameter of 2 in. and a solid state electronic Piezo switch rated for a minimum of 20 million cycles with no moving plunger or moving electrical contacts. The operating voltage shall be 1224VAC/DC. The actuator's nominal operating force shall be approximately 1 not exceed 5 lb.
8. The pedestrian sign shall be the R10-3e in accordance with the MUTCD, unless a different MUTCD sign code is indicated on the plans. The sign base shall be sheet aluminum in accordance with 919.01(b).
9. The push button assembly shall incorporate a raised arrow. The arrow shall be raised 0.03125 in. minimum and shall be 1.5 in. minimum in length. The arrow color shall contrast with the background. The raised arrow shall vibrate to indicate that the walk interval is in effect.

CL. DETECTOR CARD RACK AND DETECTOR MODULES

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.
- B. Additions:
 1. A detector card rack and detector modules shall be used. The detector module shall be 2-channel with delay feature, card rack compatible with and intermediate to the detector rack edge connectors. The cost of the detector rack shall be included in the cost of the detector modules.

CLI. ELECTRICAL INSULATION SEALANT

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.
- B. Additions:
 1. The electrical insulation sealant for this contract shall be chosen from the following list:
 - a. Aquaseal
 - b. Electrical 430
 - c. 3M Electrical Insulation Putty
 - d. Plyseal Insulating Mastic
 - e. or approved equal

CLII. LOOP DETECTION

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.
- B. Additions:
 - 1. The contractor shall perform loop tagging, testing and vehicle simulator testing in accordance with 805.09. Loop tagging tables are provided in the appendix. Documentation of loop testing results shall utilize the form on INDOT recurring special provision 805-T-039d.

CLIII. SIGNAL CANTILEVER STRUCTURE, HAND HOLE COVERS

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.
- B. Additions:
 - 1. The contractor shall replace missing or repair damaged mast arm hand hole covers on all existing mast arms as necessary prior to painting. The cost of replacing covers shall be considered incidental and included with the cost of other pay items.
 - 2. These items will be paid for at the contract price for SIGNAL CANTILEVER STRUCTURE, HAND HOLE COVERS (EACH).

CLIV. SIGNAL CANTILEVER STRUCTURE, RELOCATE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.
- B. Additions:
 - 1. The contractor shall relocate existing mast arm assemblies as detailed in the plans. Relocated mast arms shall be installed in accordance with the INDOT Standard Specifications.
 - 2. This work shall be paid for at the contract price for SIGNAL CANTILEVER STRUCTURE, RELOCATE (EACH).

CLV. SIGNAL CANTILEVER STRUCTURE

- A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.
- B. Additions:
 - 1. All new signal cantilever structures located along Sample Street shall be single arm type per current INDOT standard drawings. All signal cantilever structures of this type shall have a galvanized finish, utilize a Type B foundation per the current INDOT Standard Drawings and be paid for at the contract price for SIGNAL CANTILEVER STRUCTURE, SINGLE ARM (EACH).
 - a. Including Intersection Numbers 28 and 46 as shown on the plans.
 - 2. All new signal cantilever structures locate south of Sample Street and north of Chippewa Avenue shall be cantilever truss type arms per INDOT 1998 standard drawings (See Appendix) and shall match the style of existing signal cantilever structures located within this portion of the project limits. All signal cantilever structures of this type shall have a galvanized finish, utilize the foundation detailed in said standard drawings and be paid for

at the contract price for SIGNAL CANTILEVER STRUCTURE, SINGLE TRUSS ARM (EACH).

- a. Including Intersection Numbers 32, 50, and 51 as shown on the plans.
3. All new signal cantilever structures located north of Sample Street and south of Marion Street shall be cantilever truss type arms per INDOT 1998 standard drawings and shall match the style of existing signal cantilever structures located within this portion of the project limits. All signal cantilever structures of this type shall be painted FS 17038 (Black), utilize the foundation detailed in said standard drawings, and be and paid for at the contract price for SIGNAL CANTILEVER STRUCTURE, SINGLE TRUSS ARM (EACH).
 - a. Including Intersection Numbers 20 through 27, 38, 43 through 45, and 54 through 58 as shown on the plans

CLVI. CONDUIT, HDPE, 3 IN, SCHEDULE 80

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.

B. Additions:

1. An undistributed quantity of 3 IN HDPE Schedule 80 conduit has been included for the conduit that will be needed to connect the new service pedestals to the existing service points.
2. This conduit will be paid for at the contract price for CONDUIT, HDPE, 3 IN, SCHEULE 80 as indicated on the itemized proposal sheet.

CLVII. TRAFFIC SIGNAL HEAD, 3 SECTION, 12" RED AMBER GREEN BIKE SIGNALS

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 805.

B. Additions:

1. Traffic signal head shall consist of a standard 3 section signal head with 12 inch lenses each depicting a bicycle symbol as indicated in the plans.
2. This bike traffic signal will be measured and paid for at the contract price per each installation for BIKE TRAFFIC SIGNAL HEAD, 3 SECTION, 12 IN as indicated on the itemized proposal sheet. The cost of required mounting equipment, connectors, and miscellaneous equipment necessary for proper installation and operation shall be included in the cost of the pay item.

CLVIII. DECORATIVE SIGNAGE FOR CYCLE TRACK

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 802.

B. Additions:

1. This work shall consist of fabricating and placing cycle track signs as indicated on plans. This signage package consists of custom exterior architectural signage. Sign contractor to furnish all labor, materials, services, equipment and apparatus whether necessary or incidental to complete installation of all sign types required for the project as shown in construction plans and specified herein.
2. Sign contractor shall coordinate and provide sign component design services necessary to

properly integrate structural support systems into various sign types as shown in the construction plans.

3. Signage, mounting and fastening devices shall be engineered, fabricated and installed to withstand a minimum of 30-psf normal wind load to the sign, or greater per local cost, in addition to the weight of the sign.
4. Submittals:
 - a. Product Data: Selected sign contractor shall provide manufacturer's technical data and / or cut sheets for each type of product and component specified.
 - b. Shop Drawings: Selected sign contractor shall submit detailed and engineered shop drawings for each sign type for fabrication and installation. Hard copy and electronic PDF format no larger than 11"x 17" is preferred. The shop drawings for each sign type shall consist of:
 - (i) Object views including: elevations, sections and enlarged details (such as of extrusions, structural details, attachments, assemblies, etc.).
 - (ii) Fabrication methods and processes
 - (iii) Structural/internal design with specs and dimensions (engineered for wind load when applicable)
 - (iv) Specific materials; including substrates, thicknesses, finishes, etc.
 - (v) Fastening details and hardware with mounting details (brackets, footers, etc.)
 - (vi) Typographic and pictographic specifications with applicable brand labels and logos
 - (vii) Identification of any dimensional or other changes and deviations from the Signage Guide by virtue of the fabrication materials, methods and/or engineering.
 - c. Samples for Selection and Verification: Submit manufacturer's finish and color charts, showing the full range of colors available with actual unit and/or section samples of all products specified. Include samples of paint, vinyl, acrylic, metal, laminate, masonry, etc. (using actual substrate materials). At least 3 square inches of material is required as a sample.
 - d. Maintenance Manual: Maintenance instructions and manuals for all sign components, along with amended shop drawings, shall be supplied by Contractor to Owner upon completion of punch list items.
5. Quality Assurance:
 - a. Contractor and their installers are expected to have knowledge of ADA guidelines, general sign locating practices, MUTCD and any particular unique installations defined by Designer. Contractor shall follow these guidelines as well as landscape cues in installing for the best visual placement.
 - b. Contractor shall be knowledgeable of relevant local code requirements and honor same in fabrication and installation.
 - c. Installer Qualifications:

- (i) Shop that employs skilled workers who install products similar to those required for this project and whose installation process has a record of successful execution and completion.
 - d. Fabricator Qualifications:
 - (i) Shop that employs skilled workers who custom-fabricate products similar to those required for this project and whose products have a record of successful in- service performance.
 - (ii) Sign Source Limitations: Obtain each sign type from single source and manufacturer.
 - e. Regulatory Requirements:
 - (i) Comply with latest applicable provisions in ADA-ABA Accessibility Guidelines, ICC/ANSI A117.1 and requirements of authorities having jurisdiction.
- 6. Project Conditions
 - a. Weather Limitations: Proceed with installation only when weather conditions permit installation of signs in exterior locations to be performed according to manufacturer's written instructions and warranty requirements.
 - b. Field Measurements: Verify mounting dimensions by field measurements before fabrication and indicate measurements on Shop Drawings.
 - c. Structural Support: Verify appropriate structural support requirements for all signs.
- 7. Warranty
 - a. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair replace components of signs that fail in materials or workmanship within specified warranty period.
 - b. Contractor shall provide a written five (5) year full replacement warranty to the Owner that all signs will be free of defects due to craft work and materials including, but not limited to:
 - c. Bubbling, chalking, rusting or other disintegration of the sign panel, graphics or of the edges
 - d. Corrosion appearing beneath paint surfaces of panels, brackets, posts, support assemblies and fasteners (except as an obvious result of vandalism or other external damage)
 - e. Sign assemblies not remaining true and plumb on their supports
 - f. Fading, chalking and discoloration of the colors and finishes within the vinyl and paint manufacturer's stated warranty period
 - g. Peeling, delamination, warping ("oil canning") and deterioration of metal and polymer finishes beyond normal weathering
 - h. Repair and reinstallation of signage due to poor initial construction
 - i. Deterioration of embedded graphic image colors and sign lamination

8. Materials

- a. Aluminum Plate: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 6061.
- b. Aluminum Sheet: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 3003.
- c. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 6063-T5.
- d. Steel: For steel exposed to view on completion, provide materials having flat, smooth surfaces without blemishes. Do not use materials whose surfaces exhibit pitting, seam marks, roller marks, rolled trade names, or roughness.
- e. Galvanized steel sign post, anchor, & sleeve.
- f. High Pressure Laminate graphic panel: graphic panels should be constructed using a high pressure laminate panel with embedded graphics.
- g. Applied Vinyl: Die-cut characters from vinyl film of nominal thickness of 3mm with pressure-sensitive adhesive backing, and UV resistant material suitable for exterior applications. Match colors as shown on construction plans.

9. Fabrication

- a. Construction Methods: The drawings call for a variety of fabrication techniques; as such, Contractors shall employ their best practices and methods to fabricate signs to meet the Signage Guide and the following:
- b. Welded Connections: Comply with AWS standards for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of exposed side. Clean exposed welded surfaces of welding flux and dress exposed and contact surfaces.
- c. Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.
- d. Preassemble signs in the shop to greatest extent possible. Disassemble signs only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation, in location not exposed to view after final assembly. Conceal fasteners if possible; otherwise, locate fasteners where they will be inconspicuous.
- e. Structural Support: Contractor to provide miscellaneous steel and metal components for attachment and structural support of sign products as necessary.

10. Panel Signs

- a. Manufacturers: Custom Manufactured per Signage Detail.
- b. Provide smooth sign panel surfaces constructed to remain true to form under installed conditions within a tolerance of plus or minus 1/16" measured diagonally from corner to corner.

11. Accessories

- a. Anchors and Inserts: Provide nonferrous-metal or hot dip galvanized and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion bolt devices for drilled in place anchors. Furnish inserts as required to be set into concrete or masonry work. All exposed fasteners shall be a security type requiring special tools for removal.

12. Installation

- a. Location and placement: Locate signs and accessories where indicated, using mounting methods of types described and complying with manufacturer's written instructions and/or best practices.
- b. Install signs level, plumb and at heights indicated, with sign surfaces free of distortion and other defects in appearance.

13. Decorative Signs will be measured by each sign complete in place. Sign post and panel design, preparation, fabrication, labor, materials, and all necessary incidentals shall be included in the cost of the decorative sign.

14. The accepted quantity of decorative signs will be paid for at the contract unit price per for each DECORATIVE SIGN, CYCLE TRACK as indicated on the itemized proposal sheet.

CLIX. INLET REMOVAL AND CATCH BASIN REMOVAL

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 202.

B. Additions:

1. All existing Inlets and Catch Basins that are to be removed, as identified on the plans, will be measured and paid for at the contract unit price per each for INLET, REMOVE as indicated on the itemized proposal sheet.

CLX. PERMANENT TUBULAR MARKERS

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 801, 923.

B. Additions:

1. This work shall consist of installing tubular delineation markers to the bridge deck at the intersection of St. Joseph Street and Colfax Avenue as shown on the plans.
2. Tubular markers shall be placed as shown on the plans. The tubular markers are to be placed as a permanent installation.
3. Markers shall be secured in place by adhesives. The use of metal bases or weighting will not be allowed.

CLXI. CURB IDENTIFICATION MARKERS

A. Prevailing Specifications: None.

B. Additions:

1. This work shall consist of the permanent installation of curblines identification markers and anchoring systems around intersection radii as shown on the plans.
2. Markers and ground assemblies shall be R-6 curb or ground markers produced by P.S.B. Gesma, Inc., C.P. 187, 158 des Turquoises Boischatel, QC, GOA 1H0, phone (418) 822-2111, fax (418) 822-0195, or approved equal.
 - a. Identification Markers are to be orange in color and 36 inches in length above the curb line.
3. Markers are to be installed in concrete areas, including curbs and sidewalks, or within interlocking paving block areas. If installed within paving block areas, the installation shall be located at the cross intersections of 4 blocks or in between 2 blocks to minimize the risk of block splitting.
4. A diamond drill or percussion drill shall be used to install the anchors. Excess water and or dust shall be removed from the anchor hole prior to installation of anchors.
 - a. Establish the location of the anchors and drill a 2-inch diameter hole to a depth 4-3/4 inches to 5 inches.
 - b. When the holes have been drilled, prepare a small quantity of fast setting grout, then screw on the summer plug onto the anchor to be ready to put into place. Fill the hole with grout up to one inch of the rim and place and level the anchor into the grout to a point when the anchor is at level with the curb or paving.
 - c. Take any excess grout around the anchor and let it cure until hard enough for the stem to be put in place – typically 24 hours.
 - d. If fast setting cartridge of epoxy is used for installation, make sure the product used has no acetone added to the epoxy.
5. An undistributed quantity of 30 Curb Identification Markers is included in the quantity, for the City's use in future maintenance. The Contractor shall deliver the undistributed quantity to a location as directed by the City.
6. The accepted quantity of curb identification markers will be paid for at the contract unit price per for each CURB IDENTIFICATION MARKER as indicated on the itemized proposal sheet. The cost of all materials, anchoring system, equipment, tools, labor, transportation, operations, and all other incidentals shall be included in the cost of the item.

CLXII. LOOP TESTING TABLE

805-T-039d LOOP TESTING TABLE

Page _____

(Adopted 09-01-05)

INTERSECTION _____ Contract No. _____

TEST PERFORMER-CONTRACTOR (C) _____ Date _____

TEST PERFORMER-STATE (S) _____ Date _____

	LOOP DESIGNATION										
NUMBER OF TURNS											
INDUCTANCE	READINGS AT DETECTOR HOUSING BEFORE SPLICED										
80 to 800 μ H											
RESISTANCE # 8 Ω											
VOLTAGE # 3 v											
MEGOHM (LOOP) > 100 M Ω											
MEGOHM (LEAD IN) >100 M Ω											
INDUCTANCE	READINGS AT CABINET AFTER SPLICED										
80 to 800 μ H	C										
	S										
RESISTANCE # 8 Ω	C										
	S										
VOLTAGE # 3 v	C										
	S										
MEGOHM WEST SPLICE >100 M Ω	C										
	S										
VEHICLE SIMULATOR	C										
	S										

DISTRIBUTION: Project File, District Traffic, Contractor

805-T-039d

CLXIII. CABLESPAN SIGN STRUCTURE

A. Prevailing Specifications: 2016, INDOT Standard Specifications Section 802.

B. Additions:

1. Strain poles, bands and attachments shall be primed and painted with black powder-coated paint. Powder coating material shall be a thermosetting polyester powder coating with a minimum coating thickness of 2.0 mils. Powder coating application shall be electrostatically applied.
2. Payment shall be made at the contract unit price per each for OVERHEAD SIGN STRUCTURE, CABLESPAN and CABLESPAN SIGN STRUCTURE FOUNDATION, IV which shall include all labor, materials and incidentals respectively for the work complete in place.



CITY OF SOUTH BEND, INDIANA
CONTRACTOR'S BID FOR PUBLIC WORK
CHECKLIST FOR BIDDERS

Project Name South Bend One-Way to Two-Way Street Conversion
Project No. 116-001
For Bids Due February 9, 2016

From time to time the South Bend Board of Public Works finds it necessary to reject a bid because it does not comply with statutory requirements. In preparing your bid, please use the following checklist in order to make sure that your bid is done in the proper manner.

___ Proper bid security included. The bidder has the option of providing either a Certified Check or Bid Bond.

___ Bid prepared on the City of South Bend Contractor's Bid for Public Work Form, completely executed.

___ Contractor's Non-Collusion and Non-Debarment Affidavit, Certification Regarding Investments with Iran, Employment Eligibility Verification, Non-Discrimination Commitment, and Certification of use of United States Steel Products or Foundry Products.

___ Proof of MBE/WBE Participation Goal Form [MWBE-1.0]. If minimum participation goal is not met, also provide Evidence of Good Faith Efforts Form [MWBE-2.0] and MBE/WBE Contacted Form [MWBE-2.1].

___ Acknowledge Receipt of ___ Addendum(s) included with the bid.

___ All required additional information is included with the bid.

___ Proposal statements and other affidavits all signed by the proper party with name either printed or typed underneath signature.

___ This checklist submitted with the Bid.

This checklist is provided for bidder's use in assuring compliance with required documentation; however, it does not include all specifications requirements and does not relieve the bidder of the need to read and comply with the specifications.

Bidder: _____ Date: _____

By Authorized Representative:

Signature: _____

Print Name & Title: _____



**CITY OF SOUTH BEND, INDIANA
CONTRACTOR'S BID FOR PUBLIC WORK**

Project Name South Bend One-Way to Two-Way Street Conversion

Project No. 116-001

For Bids Due February 9, 2016

PART I

(Must be completed for all bids. Please type or print)

Date: _____ Bidder (Firm): _____

Address: _____

City/State/Zip: _____ Telephone Number: (____) _____

Agent of Bidder (if Applicable): _____

Pursuant to notices given, the undersigned offers to furnish labor and/or material necessary to complete the public works project of:

_____ the City of South Bend, Indiana, in accordance with plans and specifications prepared by:

_____ and dated _____ for the sum of (enter the Total Bid as shown on the Proposal)

_____ (\$ _____)
(Enter sum of Total Bid plus Alternates shown on Proposal) (Numerical)

The undersigned further agrees to furnish a bond or certified check with this bid for an amount specified in the notice of the letting. If alternative bids apply, the undersigned submits a proposal for each in accordance with the notice. Any addendums attached will be specifically referenced at the applicable page.

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original contract if accepted by the City of South Bend. If the bid is to be awarded on a unit basis, the itemization of the units shall be shown on a separate attachment.

By _____
(Signature)

(Printed Name of Person Signing)

ACCEPTANCE

The above bid is accepted this _____ day of _____ 20 _____

Subject to the following conditions: _____

BOARD OF PUBLIC WORKS

Gary A. Gilot, President

David P. Relos, Member

Elizabeth A. Maradik, Member

Brian J. Pawlowski, Member

James A. Mueller, Member

Attest: Linda M. Martin, Clerk

PART II

(For projects of \$100,000 or more – IC 36-1-12-4)

These statements to be submitted under oath by each bidder with and as part of his bid.

Attach additional pages for each section as needed.

SECTION I EXPERIENCE QUESTIONNAIRE

1. Attach information regarding projects your organization has completed for the period of one (1) year prior to the date of the current bid.
2. Attach a listing of public works projects currently in process of construction by your organization.
3. Attach information regarding any failure to complete any work awarded to you and the location thereof.
4. Attach references from private firms for which you have performed work.

SECTION II PLAN AND EQUIPMENT QUESTIONNAIRE

1. Attach an explanation of your plan or layout for performing proposed work. (Examples could include a narrative of when you could begin work, complete the project, number of workers, etc. and any other information which you believe would enable the City of South Bend to consider your bid.)
2. Attach a listing of the names and addresses of all subcontractors (i.e. persons or firms outside your own firm who have performed part of the work) that you have used on public works projects during the past five (5) years along with a brief description of the work done by each subcontractor.
3. If you intend to sublet any portion of the work, attach the name and address of each subcontractor, equipment to be used by the subcontractor, and whether you will require a bond. However, if you are unable to currently provide a listing, please understand a listing must be provided prior to contract approval. Until the completion of the proposed project, you are under a continuing obligation to immediately notify the City of South Bend in the event that you subsequently determine that you will use a subcontractor on the proposed project.
4. Attach a listing of equipment you have available to use for the proposed project.
5. Have you entered into contracts or received offers for all materials which substantiate the prices used in preparing your proposal? If not, attach an explanation for the rationale used which would corroborate the prices listed.

SECTION III CONTRACTOR'S FINANCIAL STATEMENT

Attachment of bidder's financial statement is mandatory. Any bid submitted without said financial statement as required by statute shall thereby be rendered invalid. The financial statement provided hereunder to the City of South Bend awarding the contract must be specific enough in detail so that said City of South Bend can make a proper determination of the bidder's capability for completing the project if awarded.

eligibility status of all of Contractor's newly hired employees through the E-Verify Program as defined by I.C. 22-5-1.7-3. Contractor's documentation of enrollment and participation in the E-Verify Program is included and attached as part of this bid/quote; and

5. Contractor shall require his/her/its subcontractors performing work under this public contract to certify that the subcontractors do not knowingly employ or contract with an unauthorized alien, nor retain any employee or contract with a person that the subcontractor subsequently learns is an unauthorized alien, and that the subcontractor has enrolled in and is participating in the E-Verify Program. The Contractor agrees to maintain this certification throughout the term of the contract with the City of South Bend, and understands that the City may terminate the contract for default if the Contractor fails to cure a breach of this provision no later than thirty (30) days after being notified by the City.
6. Persons, partnerships, corporations, associations, or joint venturers awarded a contract by the City of South Bend through its agencies, boards, or commissions shall not discriminate against any employee or applicant for employment in the performance of a City contract with respect to hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment because of race, sex, religion, color, national origin, ancestry, age, gender expression, gender identity, sexual orientation or disability that does not affect that person's ability to perform the work.

In awarding contracts for the purchase of work, labor, services, supplies, equipment, materials, or any combination of the foregoing including, but not limited to, public works contracts awarded under public bidding laws or other contracts in which public bids are not required by law, the City, its agencies, boards, or commissions may consider the Contractor's good faith efforts to obtain participation by those Contractors certified by the State of Indiana as a Minority Business ("MBE") or as a Women's Business Enterprise ("WBE") as a factor in determining the lowest, responsible, responsive bidder.

In no event shall persons or entities seeking the award of a City contract be required to award a subcontract to an MBE/WBE; however, it may not unlawfully discriminate against said WBE/MBE. A finding of a discriminatory practice by the City's MBE/WBE Utilization Board shall prohibit that person or entity from being awarded a City contract for a period of one (1) year from the date of such determination, and such determination may also be grounds for terminating the contract for which the discriminatory practice or noncompliance pertains.

7. The undersigned contractor agrees that the following nondiscrimination commitment shall be made a part of any contract which it may henceforth enter into with the City of South Bend, Indiana or any of its agencies, boards or commissions.

Contractor agrees not to discriminate against or intimidate any employee or applicant for employment in the performance of this contract with privileges of employment, or any matter directly or indirectly related to employment, because of race, religion, color, sex, gender expression, gender identity, sexual orientation, handicap, national origin or ancestry. Breach of this provision may be regarded as material breach of contract.

I, the undersigned bidder or agent as contractor on a public works project, understand my statutory obligations to the use of steel products or foundry products made in the United States (I.C. 5-16-8-1). I hereby certify that I and all subcontractors employed by me for this project will use steel products or foundry products on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

I hereby affirm under the penalties of perjury that the facts and information contained in the foregoing bid for public works are true and correct.

Dated this _____ day of _____, 20__

Contractor/Bidder (Firm)

Signature of Contractor/Bidder or Its Agent

Printed Name and Title

Subscribed and sworn to before me this _____ day of _____, 20__

My Commission Expires _____

Notary Public

County of Residence _____



**BID/PROPOSAL
CITY OF SOUTH BEND**

Project Name South Bend One-Way to Two-Way Street Conversion

Project No. 116-001 Div. A

For Bids Due February 9, 2016

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	CONSTRUCTION ENGINEERING	1	LS		
2	CPM SCHEDULE	1	LS		
3	CMP SCHEDULE, MONTHLY UPDATE	8	EACH		
4	MOBILIZATION AND DEMOBILIZATION	1	LS		
5	VIDEO RECORD	1	LS		
6	UTILITY ALLOWANCE	10000	DOL		
7	SPRINKLER REPAIR ALLOWANCE	5000	DOL		
8	UNDISTRIBUTED ALLOWANCE	35000	DOL		
9	CLEARING RIGHT OF WAY	1	LS		
10	TESTING FOR ASBESTOS	2	EACH		
11	PAVEMENT REMOVAL	8396	SYS		
12	CURB, CONCRETE, REMOVE	74	LFT		
13	HOUSES AND BUILDINGS, REMOVE, PARCEL NO 71-08-25-103-003.000-026	1	LS		
14	HOUSES AND BUILDINGS, REMOVE, PARCEL NO 71-08-25-103-002.000-026	1	LS		
15	SIDEWALK, CONCRETE, REMOVE	49	SYS		
16	INLET, REMOVE	11	EACH		
17	MANHOLE, REMOVE	1	EACH		
18	CONCRETE FOUNDATION, REMOVE	1	EACH		
19	EXCAVATION, COMMON	2000	CYS		
20	BORROW	1800	CYS		
21	DEWATERING AND PROTECTION OF EXISTING STRUCTURES	1	LS		
22	TEMPORARY INLET PROTECTION	15	EACH		
23	TEMPORARY SILT FENCE	2244	LFT		
24	NO 2 STONE	100	TON		
25	SUBGRADE TREATMENT, TYPE I	8504	SYS		
26	SUBGRADE TREATMENT, TYPE II	542	SYS		
27	SUBGRADE TREATMENT, TYPE III	227	SYS		

28	SUBGRADE TREATMENT, TYPE IC	401	SYS		
29	STRUCTURAL BACKFILL, TYPE 2	551.9	CYS		
30	COMPACTED AGGREGATE, NO. 53, BASE	1209	TON		
31	SUBBASE FOR PCCP	1376	CYS		
32	HMA PATCHING, TYPE D	9	TON		
33	MILLING, ASPHALT, 1 1/2 IN	1768	SYS		
34	MILLING, PROFILE	2355	SYS		
35	QC/QA-HMA, 3, 70, SURFACE, 9.5 mm	538	TON		
36	QC/QA-HMA, 3, 70, INTERMEDIATE, 19.0 mm	634	TON		
37	QC/QA-HMA, 3, 64, BASE, 25.0 mm	1065	TON		
38	JOINT ADHESIVE, SURFACE	3482	LFT		
39	JOINT ADHESIVE, INTERMEDIATE	2252	LFT		
40	LIQUID ASPHALT SEALANT	3482	LFT		
41	ASPHALT FOR TACK COAT	4	TON		
42	QC/QA-PCCP, 10 IN	4532	SYS		
43	CORING, PCCP	1	LS		
44	PCCP, 10 IN , DECORATIVE	438	SYS		
45	PCCP, 6 IN	401	SYS		
46	PCCP, COLORED, 6 IN	200	SYS		
47	6" PCCP BANDING	35	LFT		
48	D-1 CONTRACTION JOINT	3376	LFT		
49	SLEEPER SLAB	259	LFT		
50	FENCE, CHAIN LINK, PVC COATED 42 IN	130	LFT		
51	DECORATIVE PICKET FENCE	72	LFT		
52	HMA FOR SIDEWALK	41	TON		
53	SIDEWALK, CONCRETE, 4"	1071	SYS		
54	CURB RAMP, CONCRETE, A	20	SYS		
55	CURB RAMP, CONCRETE, C	52	SYS		
56	CURB RAMP, CONCRETE, D	8	SYS		
57	CURB RAMP, CONCRETE, G	9	SYS		
58	CURB RAMP, CONCRETE, L	27	SYS		
59	CURB, CONCRETE	1443	LFT		
60	CURB AND GUTTER, B, CONCRETE	74	LFT		
61	CENTER CURB, D, CONCRETE	22	SYS		

62	PCCP FOR APPROACHES, 6 IN	33	SYS		
63	PCCP FOR APPROACHES, 9 IN	509	SYS		
64	MAILBOX ASSEMBLY, SINGLE	6	EACH		
65	BENCH MARK POST, RESET	1	EACH		
66	INSPECTION HOLE	10	EACH		
67	MOBILIZATION AND DEMOBILIZATION FOR SEEDING	4	EACH		
68	FERTILIZER	1	TON		
69	WATER	19	kGAL		
70	SODDING, NURSERY AND TOPSOIL	72	SYS		
71	BRICK PAVERS	445	SYS		
72	IRRIGATION, TREE WATERING SYSTEM	23	EACH		
73	OVERSTORY TREE, 2" CALIPER	23	EACH		
74	ORNAMENTAL TREE, 2", CALIPER	6	EACH		
75	PERENNIAL, NO. 1 CONTAINER	266	EACH		
76	ORNAMENTAL GRASS, NO. 1 CONTAINER	67	EACH		
77	SHRUB, NO.3 CONTAINER	171	EACH		
78	GROUNDCOVER, PLUG	1670	EACH		
79	SHREDDED HARDWOOD MULCH	35	CYD		
80	LANDSCAPE EDGING	105	LFT		
81	GATOR WATERING BAG	23	EACH		
82	IRRIGATION, LANDSCAPE	4645	SFT		
83	REINFORCING STEEL	1	TON		
84	MODULAR FACE BRICK	1425	SFT		
85	UPPER RETAINING WALLS	75	LFT		
86	LOWER RETAINING WALLS	110	LFT		
87	CONCRETE COLUMNS	60	CYS		
88	CONCRETE MONUMENT FOOTING	17	CYS		
89	4" MONUMENT RING CONCRETE	20	SYS		
90	24" WIDE PRECAST CONCRETE WALL CAP	182	LFT		
91	56" SQ PRECAST CONCRETE CAP	4	EACH		
92	68" SQ PRECAST CONCRETE CAP	4	EACH		
93	PRECAST CONCRETE PLANTER	4	EACH		
94	METER PIT	1	LS		

95	ADJUST WATER SERVICE LINE, RESIDENTIAL	2	EACH		
96	TAP, WATER SERVICE, 1-INCH (CITY TAP FEE)	2	EACH		
97	CAP EXISTING WATER SERVICE LINE	2	EACH		
98	PIPE, TYPE 2 CIRCULAR 12 IN (WATER MAIN GRADE)	103	LFT		
99	PIPE, TYPE 2 CIRCULAR 15 IN (WATER MAIN GRADE)	188	LFT		
100	PIPE, TYPE 2 CIRCULAR 18 IN (WATER MAIN GRADE)	37	LFT		
101	PIPE, TYPE 2 CIRCULAR 12 IN	629	LFT		
102	PIPE, TYPE 2 CIRCULAR 15 IN	356	LFT		
103	PIPE, TYPE 2 CIRCULAR 18 IN	176	LFT		
104	HMA FOR STRUCTURE INSTALLATION, TYPE A	57	TON		
105	PIPE, PLUG EXISTING	4	EACH		
106	DRYWELL	3	EACH		
107	CASTING, ADJUST TO GRADE , MANHOLE	9	EACH		
108	CASTING, ADJUST TO GRADE, INLET	3	EACH		
109	CASTING, NEENAH R-1801-G, FURNISH AND ADJUST TO GRADE	2	EACH		
110	CASTING, NEENAH R-3457-C2, FURNISH AND ADJUST TO GRADE	5	EACH		
111	INLET, R13	3	EACH		
112	PIPE CATCH BASIN, 24 IN	3	EACH		
113	STRUCTURE, MANHOLE, RECONSTRUCTED	5	LFT		
114	STRUCTURE, INLET, RECONSTRUCTED	3	LFT		
115	INLET, B15	11	EACH		
116	INLET, C15	19	EACH		
117	CONSTRUCTION SIGN, C	1	EACH		
118	CONSTRUCTION SIGN, BUSINESS SERVICE, TYPE C	4	EACH		
119	TEMPORARY PAVEMENT MARKING, 4 IN	3210	LFT		
120	TEMPORARY PAVEMENT MARKING, REMOVABLE, 4 IN	3210	LFT		
121	TEMPORARY PAVEMENT MESSAGE MARKING, REMOVABLE, LANE INDICATION ARROW	4	EACH		
122	CONSTRUCTION SIGN, A	50	EACH		
123	CONSTRUCTION SIGN, B	2	EACH		
124	MAINTAINING TRAFFIC	1	LS		

125	BARRICADE, III-B	48	LFT		
126	SIGNAL HEAD, RELOCATE	5	EACH		
127	SIGN POST, SQUARE, TYPE 1, UNREINFORCED ANCHOR BASE	390	LFT		
128	SIGN POST, SQUARE, TYPE 2, UNREINFORCED ANCHOR BASE	72	LFT		
129	SIGN, SHEET ASSEMBLY, RELOCATE	26	EACH		
130	CABLE SPAN SIGN STRUCTURE FOUNDATION, IV	2	EACH		
131	SIGN, SHEET, WITH LEGEND 0.080"	106	SFT		
132	SIGN, SHEET, WITH LEGEND 0.100 IN	281	SFT		
133	SIGN, SHEET, WITH LEGEND 0.125 IN THICKNESS	77	SFT		
134	SIGN STRUCTURE, SALVAGE	2	EACH		
135	OVERHEAD SIGN STRUCTURE, MONOTUBE, REMOVE	1	EACH		
136	OVERHEAD SIGN STRUCTURE, CABLESPAN	1	EACH		
137	ILUMINATED WALL LETTERING	1	LS		
138	TESCO CABINET W/DUAL SERVICE, FOUNDATION, WIRING & ETC	1	EACH		
139	TRAFFIC SIGNAL EQUIPMENT, REMOVE	4	EACH		
140	TESCO CABINET W/SINGLE SERVICE, FOUNDATION, WIRING & ETC	2	EACH		
141	SIGNAL POLE FOUNDATION, 36 IN X 144 IN	4	EACH		
142	HANDHOLE, SIGNAL, TYPE 1	4	EACH		
143	SIGNAL HANDHOLE ADJUST TO GRADE	4	EACH		
144	CONDUIT, STEEL, GALVANIZED, 2 IN	265	LFT		
145	PEDESTRIAN SIGNAL HEAD, 12 IN., RELOCATE	3	EACH		
146	PEDESTRIAN SIGNAL HEAD WITH INTERNATIONAL SYMBOLS, 12 IN, COUNTDOWN	8	EACH		
147	SIGNAL PEDESTAL FOUNDATION, A	1	EACH		
148	PVC SCHEDULE 80 CONDUIT, 3/4"	475	LFT		
149	SIGNAL POLE, PEDESTAL, 12FT	1	EACH		
150	CONTACT CLOSURE CARD	4	EACH		
151	RECEIVER PROCESSOR	4	EACH		
152	WIRELESS MAGNOMETER DETECTOR, NEW	5	EACH		
153	SIGNAL CANTILEVER STRUCTURE, SINGLE TRUSS ARM 25 FT.	2	EACH		

154	SIGNAL CANTILEVER STRUCTURE, DRILLED SHAFT FOUNDATION, TYPE A	2	EACH		
155	THERMAL DETECTION CAMERA	4	EACH		
156	THERMAL DETECTION SYSTEM	2	EACH		
157	TRAFFIC SIGNAL HEAD, 3 SECTION, 12 IN	7	EACH		
158	TRAFFIC SIGNAL HEAD, 5 SECTION, 12 IN	1	EACH		
159	SPAN, CATENARY, AND TETHER	4	EACH		
160	DISCONNECT HANGER	4	EACH		
161	SIGNAL CABLE, ROADWAY LOOP, COPPER 1C/14GA	480	LFT		
162	SIGNAL CABLE, CONTROL, COPPER 5C/14GA	388	LFT		
163	SIGNAL CABLE, CONTROL, COPPER 5C/14GA	869	LFT		
164	SIGNAL CABLE, CONTROL, COPPER 7C/14GA	573	LFT		
165	SIGNAL CABLE, DETECTOR LEAD-IN COPPER 2C/16GA	164	LFT		
166	SIGNAL DETECTOR HOUSING	1	EACH		
167	SAW CUT FOR ROADWAY LOOP AND SEALANT	160	LFT		
168	SIGNAL STRAIN POLE, STEEL, 30 FT	4	EACH		
169	HANDHOLE, LIGHTING	2	EACH		
170	LIGHTING FOUNDATION	18	EACH		
171	STREET LIGHT	20	EACH		
172	PEDESTRIAN LIGHT	2	EACH		
173	WIRE NO. 4	3130	LFT		
174	TRAFFIC SIGNAL CABLE, FIBER OPTIC, SINGLE-MODE	5800	LFT		
175	TRAFFIC SIGNAL CABLE, FIBER OPTIC, MULTI-MODE	1500	LFT		
176	CONDUIT, PVC, 2 IN, SCHEDULE 80	7340	LFT		
177	NEW PANEL AND LIGHTING CONTACTOR	1	EACH		
178	LANDSCAPE LIGHTS, LED, TYPE 'F', NEW	21	EACH		
179	LANDSCAPE LIGHTS, LED, TYPE 'G', NEW	4	EACH		
180	NO. 3 WIRE	320	LFT		
181	NO. 8 WIRE	160	LFT		
182	WIRE NO. 10	3900	LFT		
183	NO. 12 WIRE	225	LFT		

184	HANDHOLE, TRAFFIC	20	EACH		
185	CABLE-DUCT MARKER	4	EACH		
186	CONSTRUCTION LIGHTING	200	DAY		
187	LINE, THERMOPLASTIC, BROKEN, WHITE, 4 IN	168	LFT		
188	LINE, THERMOPLASTIC, SOLID, WHITE, 4 IN.	540	LFT		
189	LINE, REMOVE	6781	LFT		
190	LINE, MULTI-COMPONENT, BROKEN, WHITE, 4 IN	47	LFT		
191	LINE, MULTI-COMPONENT, SOLID, WHITE, 4 IN	5903	LFT		
192	LINE, MULTI-COMPONENT, SOLID, WHITE, 4 IN	1612	LFT		
193	LINE, MULTI-COMPONENT, SOLID, YELLOW, 4 IN	36981	LFT		
194	LINE, MULTI-COMPONENT, SOLID, YELLOW, 4 IN	1684	LFT		
195	LINE, MULTI-COMPONENT, BROKEN, YELLOW, 4 IN	9246	LFT		
196	TRANSVERSE MARKING MULTI-COMPONENT, STOP LINE, 24"	726	LFT		
197	TRANSVERSE MARKING, MULTI-COMPONENT, CROSSWALK	2340	LFT		
198	PAVEMENT MESSAGE MARKINGS, MULTI-COMPONENT, LANE INDICATION ARROW	4	EACH		
199	PAVEMENT MESSAGE MARKINGS, MULTI-COMPONENT, LANE	85	EACH		
200	TRANSVERSE MARKINGS, MULTI-COMPONENT, CROSSWALK, WHITE, 24 IN.	234	LFT		
201	TRANSVERSE MARKING, MULTI-COMPONENT, SOILD, YELLOW, CROSSHATCH, 8 IN.	206	LFT		
202	PAVEMENT MESSAGE MARKINGS, MULTI-COMPONENT, BIKE	61	EACH		
203	TRANSVERSE MARKINGS, MULTI-COMPONENT , YIELD LINE CHEVRON	90	LFT		
204	LINE, MULTI-COMPONENT, DOTTED, WHITE, 4 IN.	43	LFT		
205	LINE, THERMOPLASTIC, DOTTED, WHITE, 4 IN.	25	LFT		
206	LINE, THERMOPLASTIC, SOLID, WHITE, 6 IN	480	LFT		
207	LINE, THERMOPLASTIC, BROKEN, YELLOW, 4 IN	287	LFT		
208	LINE, THERMOPLASTIC, SOLID, YELLOW, 4 IN	3106	LFT		
209	TRANSVERSE MARKING, THERMOPLASTIC, CROSSHATCH LINE, YELLOW, 8"	94	LFT		

210	TRANSVERSE MARKING, THERMOPLASTIC, STOP LINE, 24 IN	106	LFT		
211	PAVEMENT MESSAGE MARKING, THERMOPLASTIC, LANE INDICATION ARROW	11	EACH		
212	FIBER OPTIC, CITY PARK RECONNECTION	1	LS		

TOTAL _____

Bidder (Firm): _____

Address: _____

City/State/Zip: _____ Telephone Number: () _____

By _____

(Signature)

(Printed Name of Person Signing)



**BID/PROPOSAL
CITY OF SOUTH BEND**

Project Name South Bend One-Way to Two-Way Street Conversion

Project No. 116-001 Div. B

For Bids Due February 9, 2016

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	CONSTRUCTION ENGINEERING	1	LS		
2	RAILROAD INSURANCE	1	LS		
3	CPM SCHEDULE	1	LS		
4	CPM SCHEDULE, MONTHLY UPDATE	24	EACH		
5	MOBILIZATION AND DEMOBILIZATION	1	LS		
6	VIDEO RECORD	1	LS		
7	UTILITY ALLOWANCE	1	DOL		
8	SPRINKLER REPAIR ALLOWANCE	5000	DOL		
9	UNDISTRIBUTED ALLOWANCE	35000	DOL		
10	MATERIAL TESTING	1	LS		
11	TREE, REMOVE	66	EACH		
12	CLEARING RIGHT OF WAY	2	LS		
13	TESTING FOR ASBESTOS	1	EACH		
14	PAVEMENT REMOVAL	21949	SYS		
15	CURB, CONCRETE, REMOVE	15021	LFT		
16	CURB AND GUTTER, REMOVE	7367	LFT		
17	HOUSES AND BUILDINGS, REMOVE, PARCEL NO. 35	1	LS		
18	SIDEWALK, CONCRETE, REMOVE	16396	SYS		
19	INLET, REMOVE	84	EACH		
20	LIGHT STANDARD AND FOUNDATION, REMOVE	52	EACH		
21	TRAFFIC SIGNAL EQUIPMENT, REMOVE	1	LS		
22	CONCRETE FOUNDATION, REMOVE	4	EACH		
23	FIRE HYDRANT ASSEMBLY, REMOVE	11	EACH		
24	FLAG POLE AND FOUNDATION, REMOVE	2	EACH		
25	EXCAVATION, COMMON	16219	CYS		
26	BORROW	1899	CYS		

27	SEDIMENT, REMOVE	8	CYS		
28	TEMPORARY INLET PROTECTION	383	EACH		
29	TEMPORARY MULCH	10	TON		
30	TEMPORARY SILT FENCE	1184	LFT		
31	NO 2 STONE	100	TON		
32	TEMPORARY SEED MIXTURE	1104	LBS		
33	SUBGRADE TREATMENT, TYPE I	10958	SYS		
34	SUBGRADE TREATMENT, TYPE II	1190	SYS		
35	SUBGRADE TREATMENT, TYPE IV	6440	SYS		
36	SUBGRADE TREATMENT, TYPE IB	8669	SYS		
37	STRUCTURAL BACKFILL, TYPE 1	1787	CYS		
38	STRUCTURAL BACKFILL, TYPE 5	557	CYS		
39	COMPACTED AGGREGATE, NO. 53, BASE	5023	TON		
40	DENSE GRADED SUBBASE	991	CYS		
41	STONE, NO. 8	811	CYS		
42	HMA PATCHING, TYPE D	587	TON		
43	WIDENING WITH HMA, TYPE D	2255	TON		
44	MILLING, ASPHALT, 1 1/2 IN	46192	SYS		
45	MILLING ASPHALT, 3 1/2 IN	882	SYS		
46	MILLING ASPHALT, 4 1/2 IN	191	SYS		
47	MILLING ASPHALT, 2 1/2 IN	6090	SYS		
48	MILLING, APPROACH	1597	SYS		
49	MILLING, ASPHALT, VARIABLE DEPTH	2288	SYS		
50	QC/QA-HMA, 2, 70, SURFACE, 9.5 mm	207	TON		
51	QC/QA-HMA, 4, 76, SURFACE, 9.5 mm	4827	TON		
52	QC/QA-HMA, 4, 76, SURFACE, 12.5 mm	1158	TON		
53	QC/QA-HMA, 2, 70, INTERMEDIATE, 19.0 mm	345	TON		
54	QC/QA-HMA, 4, 76, INTERMEDIATE, 19.0 mm	1390	TON		
55	QC/QA-HMA, 2, 64, BASE, 19.0 mm	414	TON		
56	QC/QA-HMA, 4, 64, BASE, 19.0 MM	1859	TON		
57	HMA SURFACE, TYPE B	575	TON		
58	HMA INTERMEDIATE, TYPE B	385	TON		
59	HMA BASE, TYPE B	945	TON		

60	JOINT ADHESIVE, SURFACE	37945	LFT		
61	JOINT ADHESIVE, INTERMEDIATE	5751	LFT		
62	LIQUID ASPHALT SEALANT	38003	LFT		
63	ASPHALT FOR TACK COAT	25.7	TON		
64	QC/QA PCCP, 10 IN.	3623	SYS		
65	PCCP, 10 IN	9859	SYS		
66	PCCP, 9 IN	1365	SYS		
67	PCCP, 6 IN.	35	SYS		
68	PCCP, 5 IN.	53	SYS		
69	PCCP, 4 IN.	598	SYS		
70	PCCP, COLORED, 10 IN	428	SYS		
71	PCCP, COLORED, 8 IN	530	SYS		
72	PCCP, COLORED, 6 IN	450	SYS		
73	8" PCCP BANDING	65	SYS		
74	6" PCCP BANDING	35	SYS		
75	PERMEABLE PAVEMENT	2488	SYS		
76	D-1 CONTRACTION JOINT	6375	LFT		
77	SLEEPER SLAB	358	LFT		
78	PREFORMED JOINT MATERIAL	358	LFT		
79	GUARDRAIL, REMOVE	199	LFT		
80	GUARDRAIL END TREATMENT, MS	2	EACH		
81	BRICK PAVERS	1025	SYS		
82	SIDEWALK, CONCRETE, 4"	10176	SYS		
83	SIDEWALK, CONCRETE, 5"	4121	SYS		
84	SIDEWALK, CONCRETE, 6"	4483	SYS		
85	SIDEWALK, CONCRETE, DECORATIVE	2033	SYS		
86	MOW STRIP, CONCRETE	8	LFT		
87	CURB RAMP, CONCRETE, A	653	SYS		
88	CURB RAMP, CONCRETE, C	405	SYS		
89	CURB RAMP, CONCRETE, D	0	SYS		
90	CURB RAMP, CONCRETE, E	87	SYS		
91	CURB RAMP, CONCRETE, F	15	SYS		
92	CURB RAMP, CONCRETE, G	87	SYS		
93	CURB RAMP, CONCRETE, H	129	SYS		

94	CURB RAMP, CONCRETE, K	127	SYS		
95	CURB RAMP, CONCRETE, L	73	SYS		
96	CURB RAMP, CONCRETE, PLAN DESCRIPTION UNIQUE	94	SYS		
97	CONCRETE STAIRS AND RAILING	1	LS		
98	CURB, INTEGRAL, CONCRETE	8878	LFT		
99	CURB, INTEGRAL, B, CONCRETE, MODIFIED	371	LFT		
100	CURB, CONCRETE	6592	LFT		
101	ROLL CURB	410	LFT		
102	CURB, CONCRETE, MODIFIED	1090	LFT		
103	CENTER CURB, D, CONCRETE	46	SYS		
104	CURB AND GUTTER, B, CONCRETE	11234	LFT		
105	HMA FOR APPROACHES, TYPE B	256	TON		
106	PCCP FOR APPROACHES, 9 IN	1410	SYS		
107	PCCP FOR APPROACHES, 8 IN	279	SYS		
108	PCCP FOR APPROACHES, 6 IN	988	SYS		
109	CONCRETE HEADER	348	SYS		
110	HEADER, CONCRETE	2246	LFT		
111	GEOTEXTILES	1722	SYS		
112	MOBILIZATION AND DEMobilIZATION FOR SEEDING	2	EACH		
113	WATER	41	kGAL		
114	SODDING, NURSERY AND TOPSOIL	9962	SYS		
115	MARKER, SNOWPLOW	100	EACH		
116	BRICK, DECORATIVE	620	SYS		
117	BRICK, DECORATIVE, PERMEABLE	5004	SYS		
118	OVERSTORY TREE, 2" CALIPER	104	EACH		
119	ORNAMENTAL TREE, 2", CALIPER	3	EACH		
120	EVERGREEN TREE, 6'-8' HEIGHT	0	EACH		
121	SHRUB, NO.3 CONTAINER	279	EACH		
122	PERENNIAL, NO. 1 CONTAINER	1091	EACH		
123	ORNAMENTAL GRASS, NO. 1 CONTAINER	146	EACH		
124	GROUNDcover, PLUG	191	EACH		
125	SHREDDed HARDWOOD MULCH	2263	CYS		
126	TRASH ENCLOSURE	1	LS		

127	TRASH RECEPTACLE	17	EACH		
128	BACKFILL MIX FOR PLANTINGS	479	CYS		
129	BENCH	4	EACH		
130	BICYCLE RACK	11	EACH		
131	SIGN, DECORATIVE, TWO WAY CYCLE TRACK	4	EACH		
132	SIGN, DECORATIVE, TWO WAY CYCLE TRACK WITH SUPP.	2	EACH		
133	SIGN, DECORATIVE, SHARED USE PATH	3	EACH		
134	PAVEMENT MESSAGE MARKING, SHARED CYCLE TRACK	4	EACH		
135	PAVEMENT MESSAGE MARKING, CYCLE TRACK SYMBOL	12	EACH		
136	PRECAST CONCRETE PLANTER	4	EACH		
137	TREE GRATE	69	EACH		
138	LANDSCAPE EDGING	415	LFT		
139	IRRIGATION, TREE WATERING SYSTEM	49	EACH		
140	IRRIGATION, LANDSCAPE	4445	SYS		
141	IRRIGATION, REPAIR	2100	SYS		
142	GABION RENO MATTRESS	28	SYS		
143	MASONRY WALL	62	CYS		
144	REINFORCING STEEL	2	TON		
145	MODULAR FACE BRICK	3075	SFT		
146	UPPER RETAINING WALLS	170	LFT		
147	LOWER RETAINING WALLS	220	LFT		
148	CONCRETE COLUMNS	120	CYS		
149	CONCRETE MONUMENT FOOTING	34	CYS		
150	4" MONUMENT RING CONCRETE	40	SYS		
151	24" WIDE PRECAST CONCRETE WALL CAP	364	LFT		
152	56" SQ PRECAST CONCRETE CAP	8	EACH		
153	68" SQ PRECAST CONCRETE CAP	8	EACH		
154	PRECAST CONCRETE PLANTER	8	EACH		
155	PRECAST CONCRETE HEADWALL	1	LS		
156	METER PIT	1	LS		
157	PIPE, TYPE 4 CIRCULAR 6 IN	624	LFT		
158	PIPE, TYPE 2 CIRCULAR 8 IN	42	LFT		
159	PIPE, TYPE 2 CIRCULAR 10 IN	24	LFT		

160	PIPE, TYPE 2 CIRCULAR 12 IN	5454	LFT		
161	PIPE, TYPE 2 CIRCULAR 15 IN	174	LFT		
162	PIPE, TYPE 2 CIRCULAR 18 IN	474	LFT		
163	PIPE, TYPE 2 CIRCULAR 21 IN	103	LFT		
164	PIPE, TYPE 2 CIRCULAR 24 IN	279	LFT		
165	PIPE, TYPE 2 CIRCULAR 30 IN	294	LFT		
166	PIPE, TYPE 2 CIRCULAR 36 IN	416	LFT		
167	PIPE, TYPE 2 CIRCULAR 42 IN	28	LFT		
168	HMA FOR STRUCTURE INSTALLATION, TYPE B	20	TON		
169	VIDEO INSPECTION FOR PIPE	4864	LFT		
170	WATER METER VAULT	1	LS		
171	CASTING, ADJUST TO GRADE	76	EACH		
172	CASTING, 2, FURNISH AND ADJUST TO GRADE	5	EACH		
173	CASTING, 4, FURNISH AND ADJUST TO GRADE	19	EACH		
174	CASTING, 10, FURNISH AND ADJUST TO GRADE	6	EACH		
175	CASTING, 13, FURNISH AND ADJUST TO GRADE	2	EACH		
176	INLET, A3	2	EACH		
177	INLET, R13	4	EACH		
178	INLET, A2, MODIFIED	3	EACH		
179	CATCH BASIN, J15	7	EACH		
180	CATCH BASIN, K10	91	EACH		
181	CATCH BASIN, S14	1	EACH		
182	CATCH BASIN, F7	2	EACH		
183	CATCH BASIN, M10	17	EACH		
184	CATCH BASIN, B15	9	EACH		
185	CATCH BASIN, C15	1	EACH		
186	PIPE CATCH BASIN, 12 IN	4	EACH		
187	MANHOLE, C4	22	EACH		
188	MANHOLE, D4	1	EACH		
189	MANHOLE, D15, MODIFIED	10	EACH		
190	MANHOLE, F4	2	EACH		
191	MANHOLE, H4	3	EACH		
192	MANHOLE, H10, MODIFIED	1	EACH		

193	MANHOLE, J10, MODIFIED	2	EACH		
194	MANHOLE, C15, MODIFIED, DOGHOUSE	1	EACH		
195	MANHOLE, D15, MODIFIED, DOGHOUSE	1	EACH		
196	INLET, B15, MODIFIED	4	EACH		
197	INLET, C15, MODIFIED	8	EACH		
198	INLET, B15	8	EACH		
199	INLET, C15	1	EACH		
200	TRENCH DRAIN	287	LFT		
201	STRUCTURE, MANHOLE, RECONSTRUCTED	3	LFT		
202	FIRE HYDRANT ASSEMBLY	11	EACH		
203	FIRE HYDRANT, RESET	9	EACH		
204	WATER MAIN, D.I., 6"	80	LFT		
205	WATER QUALITY STRUCTURE	1	EACH		
206	WATER MAIN, D.I. 20"	300	LFT		
207	THRUST BLOCK, CONCRETE	4	EACH		
208	MECHANICAL JOINT RESTRIANT FOR 20" DI WATER MAIN	14	EACH		
209	WATERSTOP FOR 20" DI WATER MAIN	2	EACH		
210	TEMPORARY PAVEMENT MESSAGE MARKING, LANE INDICATION ARROW	14	EACH		
211	CONSTRUCTION SIGN, C	5	EACH		
212	ROAD CLOSURE SIGN ASSEMBLY	41	EACH		
213	TEMPORARY PANEL SIGNS	759	SFT		
214	TEMPORARY PANEL SIGN SUPPORTS	248	LFT		
215	TEMPORARY PAVEMENT MARKING, 4 IN	34046	LFT		
216	TEMPORARY PAVEMENT MARKING, REMOVABLE, 24"	200	LFT		
217	DETOUR ROUTE MARKER ASSEMBLY	193	EACH		
218	CONSTRUCTION SIGN, A	272	EACH		
219	CONSTRUCTION SIGN, B	3	EACH		
220	FLASHING ARROW SIGN	1083	DAY		
221	CHANGEABLE MESSAGE SIGN	4	EACH		
222	TUBULAR MARKER, PERMANENT	12	EACH		
223	MAINTAINING TRAFFIC	2	LS		
224	BARRICADE, III-A	1030	LFT		

225	BARRICADE, III-B	224	LFT		
226	BOLLARD, DECORATIVE, ILLUMINATED	11	EACH		
227	HOSPITAL SIGN REMOVAL	1	EACH		
228	SIGN POST, SQUARE, TYPE 1, REINFORCED ANCHOR BASE	553	LFT		
229	SIGN POST, SQUARE, TYPE 1, UNREINFORCED ANCHOR BASE	535	LFT		
230	PROJECT INFORMATION SIGN	1	EACH		
231	SIGN, SHEET ASSEMBLY, RELOCATE	64	EACH		
232	SIGN, SHEET, WITH LEGEND 0.080"	498	SFT		
233	SIGN, SHEET, WITH LEGEND 0.100 IN	143	SFT		
234	SIGN STRUCTURE, SALVAGE	1	LS		
235	SIGNAL EQUIPMENT, SALVAGE	1	LS		
236	TRAFFIC SIGNAL EQUIPMENT, REMOVE	299	EACH		
237	TRANSPORTATION OF SALVAGEABLE SIGNAL EQUIPMENT	19	EACH		
238	TESCO CABINET W/DUAL SERVICE, FOUNDATION, WIRING, ETC.	6	EACH		
239	TESCO CABINET W/SINGLE SERVICE, FOUNDATION, WIRING & ETC	13	EACH		
240	MAST ARM HAND HOLE COVERS	36	EACH		
241	WIRELESS MAGNOMETER DETECTOR, RELOCATE	24	EACH		
242	SIGNAL CABLE INTERCONNECT, FIBER OPTIC	255	LFT		
243	SIGNAL POLE, PEDESTAL, 15 FT	7	EACH		
244	LOOP DETECTOR DELAY COUNTING AMPLIFIER, 2 CHANNEL	19	EACH		
245	LOOP DETECTOR RACK	8	EACH		
246	CONTACT CLOSURE CARD	5	EACH		
247	RECEIVER PROCESSOR	5	EACH		
248	SPLICE KIT	4	EACH		
249	SPLICE	48	EACH		
250	HANDHOLE, SIGNAL, TYPE 1	55	EACH		
251	HANDHOLE, SIGNAL, ADJUST TO GRADE	33	EACH		
252	RELOCATE CONTROLLER CABINET	7	EACH		
253	CONTROLLER, RELOCATE AND REWIRE	7	EACH		
254	TRAFFIC SIGNAL HEAD, 3-SECTION, RELOCATE	94	EACH		

255	PEDESTRIAN SIGNAL HEAD, 12 IN., RELOCATE	4	EACH		
256	PEDESTRIAN SIGNAL HEAD, COUNTDOWN, 18 IN	133	EACH		
257	SIGNAL PEDESTAL FOUNDATION, A	53	EACH		
258	SIGNAL POLE, PEDESTAL, 12FT	46	EACH		
259	PVC SCHEDULE 80 CONDUIT, 1"	287	LFT		
260	PVC SCHEDULE 80 CONDUIT, 3/4"	6225	LFT		
261	CONDUIT, PVC, 2 IN, SCHEDULE 80	3781	LFT		
262	PVC SHEDULE 80 CONDUIT, 3"	160	LFT		
263	CONDUIT, HDPE, 2 IN, SCHEDULE 80	8890	LFT		
264	CONDUIT, STEEL, 2 IN, GALVANIZED	268	LFT		
265	CONDUIT, PVC, 2 IN, SCHEDULE 40	680	LFT		
266	SIGNAL CANTILEVER STRUCTURE, SINGLE TRUSS ARM 20 FT	5	EACH		
267	SIGNAL CANTILEVER STRUCTURE, SINGLE TRUSS ARM 25 FT.	3	EACH		
268	SIGNAL CANTILEVER STRUCTURE, SINGLE TRUSS ARM 30 FT.	1	EACH		
269	SIGNAL CANTILEVER STRUCTURE, SINGLE TRUSS ARM 35 FT.	5	EACH		
270	SIGNAL CANTILEVER STRUCTURE, SINGLE TRUSS ARM, 45 FT.	1	EACH		
271	SIGNAL CANTILEVER STRUCTURE, SINGLE TRUSS ARM, 50 FT.	1	EACH		
272	SIGNAL CANTILEVER STRUCTURE, DRILLED SHAFT FOUNDATION, TYPE A	38	EACH		
273	SIGNAL CANTILEVER STRUCTURE, DRILLED SHAFT FOUNDATION, TYPE B	3	EACH		
274	MAST ARM, RELOCATE	31	EACH		
275	CLEAN AND PAINT EXISTING SIGNAL EQUIPMENT	11050	SFT		
276	THERMAL DETECTION CAMERA	8	EACH		
277	THERMAL DETECTION SYSTEM	2	EACH		
278	TRAFFIC SIGNAL HEAD, 3 SECTION, 12", RED AMBER GREEN BIKE SIGNALS	8	EACH		
279	TRAFFIC SIGNAL HEAD, 5 SECTION, 12", RED AMBER GREEN, AMBER ARROW, GREEN ARROW	20	EACH		
280	CROSSWALK SYSTEM CONTROLLER	1	LS		
281	PEDESTRIAN PUSH BUTTON, NON-APS	52	EACH		
282	CROSSWALK SYSTEM - PEDESTRIAN PUSH-BUTTON STATION	4	EACH		

283	CROSSWALK SYSTEM - FLASHING PEDESTRIAN SIGN	8	EACH		
284	CROSSWALK SYSTEM - FLUSH BI-DIRECTIONAL FIXTURE	20	EACH		
285	CONSTRUCTION LIGHTING	1	LS		
286	SIGNAL CABLE, SERVICE, COPPER. 3C/8GA	340	LFT		
287	SIGNAL CABLE, ROADWAY LOOP, COPPER 1C/14GA	35728	LFT		
288	SIGNAL CABLE, CONTROL, COPPER 5C/14GA	25410	LFT		
289	SIGNAL CABLE, CONTROL, COPPER 7C/14GA	8507	LFT		
290	SIGNAL CABLE, DETECTOR LEAD-IN COPPER 2C/16GA	11324	LFT		
291	SIGNAL DETECTOR HOUSING	88	EACH		
292	FIBER OPTIC CABLE	620	LFT		
293	ILUMINATED WALL LETTERING	1	LS		
294	SAW CUT FOR ROADWAY LOOP AND SEALANT	13728	LFT		
295	HANDHOLE, LIGHTING	33	EACH		
296	LIGHT STANDARD FOUNDATION, 2FT DIAMETER X 6FT	135	EACH		
297	LUMINAIRE, ORNAMENTAL	122	EACH		
298	LIGHT POLE, ORNAMENTAL	81	EACH		
299	LIGHT STANDARD TYPE 'D'	8	EACH		
300	LIGHT STANDARD TYPE 'E'	45	EACH		
301	STREET LIGHTS, LED, TYPE 'A' NEW	5	EACH		
302	STREET LIGHTS, LED, TYPE 'B'	4	EACH		
303	STREET LIGHTS, LED, TYPE 'C'	6	EACH		
304	STREET LIGHTS, LED, TYPE 'D'	10	EACH		
305	STREET LIGHTS, LED, TYPE 'E'	29	EACH		
306	LANDSCAPE LIGHTS, LED, TYPE 'F'	21	EACH		
307	LANDSCAPE LIGHTS, LED, TYPE 'G'	4	EACH		
308	NEW PANEL AND LIGHTING CONTACTOR	3	EACH		
309	MISCELLANEOUS EQUIPMENT FOR LIGHTING	1	LS		
310	3/0 WIRE	320	LFT		
311	NO. 3 WIRE	640	LFT		
312	NO. 4 WIRE	22000	LFT		
313	NO. 6 WIRE	160	LFT		
314	NO. 8 WIRE	20990	LFT		

315	NO. 10 WIRE	24200	LFT		
316	NO. 12 WIRE	5150	LFT		
317	WIRE, TW/THW, NO 10 COPPER STRANDED	2068	LFT		
318	CABLE, POLE CIRCUIT THWN, NO 10 COPPER, STRANDED, 1/C	3510	LFT		
319	WIRE, NO 6 COPPER IN PLASTIC DUCT, 4 1/C	680	LFT		
320	WIRE, NO 6 COPPER IN PLASTIC DUCT, IN TRENCH, 4 1/C	4464	LFT		
321	CONNECTOR KIT, UNFUSED	256	EACH		
322	CONNECTOR KIT, FUSED	256	EACH		
323	MULTIPLE COMPRESSION FITTING, NON-WATERPROOFED	361	EACH		
324	MULTIPLE COMPRESSION FITTING, WATERPROOFED	182	EACH		
325	INSULATION LINK, NON-WATERPROOFED	23	EACH		
326	INSULATION LINK, WATERPROOFED	252	EACH		
327	CABLE-DUCT MARKER	15	EACH		
328	LINE, REMOVE	43679	LFT		
329	PAVEMENT MESSAGE MARKING, THERMOPLASTIC, BIKE SYMBOL	138	EACH		
330	PAVEMENT MESSAGE MARKING, MULTI-COMPONENT, BIKE SYMBOL	13	EACH		
331	LINE, THERMOPLASTIC, SOLID, WHITE, 4 IN.	31727	LFT		
332	LINE, THERMOPLASTIC, SOLID, YELLOW, 4 IN	73877	LFT		
333	LINE, THERMOPLASTIC, BROKEN, WHITE, 4 IN	1177	LFT		
334	LINE, THERMOPLASTIC, BROKEN, YELLOW, 4 IN	10961	LFT		
335	LINE, THERMOPLASTIC, SOLID, WHITE, 6 IN	16850	LFT		
336	LINE, THERMOPLASTIC, SOLID, YELLOW, 6 IN	651	LFT		
337	LINE, THERMOPLASTIC, SOLID, YELLOW, 8"	194	LFT		
338	LINE, THERMOPLASTIC, DOTTED, WHITE, 6 IN.	631	LFT		
339	LINE, MULTI-COMPONENT, BROKEN, WHITE, 4 IN	45	LFT		
340	LINE, MULTI-COMPONENT, SOLID, WHITE, 4 IN	3950	LFT		
341	LINE, MULTI-COMPONENT, SOLID, YELLOW, 4 IN	3140	LFT		
342	LINE, MULTI-COMPONENT, BROKEN, YELLOW, 4 IN	1124	LFT		
343	LINE, MULTI-COMPONENT, SOLID, WHITE, 6 IN	2128	LFT		

344	LINE, MULTI-COMPONENT, DOTTED, WHITE, 8 IN.	96	LFT		
345	TRANSVERSE MARKING, THERMOPLASTIC, CROSSHATCH LINE, YELLOW, 8"	860	LFT		
346	TRANSVERSE MARKING, THERMOPLASTIC, CROSSHATCH LINE, YELLOW, 12"	50	LFT		
347	TRANSVERSE MARKING, THERMOPLASTIC, CROSSWALK LINE, 6"	9297	LFT		
348	TRANSVERSE MARKING THERMOPLASTIC CROSSWALK, WHITE 24"	5016	LFT		
349	TRANSVERSE MARKING, THERMOPLASTIC, STOP LINE, 24 IN	2916	LFT		
350	TRANSVERSE MARKING, THERMOPLASTIC, YIELD, WHITE, 24 IN.	117	LFT		
351	TRANSVERSE MARKING, MULTI-COMPONENT, WHITE, CROSSHATCH, 8 IN.	289	LFT		
352	TRANSVERSE MARKINGS MULTI-COMPONENT, CROSSHATCH LINE, WHITE, 12"	27	LFT		
353	TRANSVERSE MARKING, MULTI-COMPONENT, CROSSWALK LINE, 6"	1071	LFT		
354	TRANSVERSE MARKING MULTI-COMPONENT, STOP LINE, 24"	254	LFT		
355	TRANSVERSE MARKINGS, MULTI-COMPONENT, CROSSWALK, WHITE, 24 IN.	429	LFT		
356	TRANSVERSE MARKINGS, MULTI-COMPONENT, YIELD LINE, WHITE, 24 IN.	79	LFT		
357	PAVEMENT MESSAGE MARKING, THERMOPLASTIC, LANE INDICATION ARROW	283	EACH		
358	PAVEMENT MESSAGE MARKING, THERMOPLASTIC, (ONLY)	29	EACH		
359	PAVEMENT MESSAGE MARKING, THERMOPLASTIC, HANDICAP SYMBOL	4	EACH		
360	PAVEMENT MESSAGE MARKINGS, MULTI-COMPONENT, LANE INDICATION ARROW	12	EACH		
361	PAVEMENT MESSAGE MARKING, MULTI-COMPONENT, (ONLY)	4	EACH		
362	PAVEMENT MESSAGE MARKINGS, MULTI-COMPONENT HANDICAP SYMBOL	13	EACH		
363	PAVEMENT MARKING, SOLID, MULTI-COMPONENT, GREEN	1586	SYS		
364	PAVEMENT MARKING, SOLID, MULTI-COMPONENT, RED	50	SYS		

--	--	--	--	--	--

TOTAL _____

Bidder (Firm): _____

Address: _____

City/State/Zip: _____ Telephone Number: (____) _____

By _____

(Signature)

(Printed Name of Person Signing)

**CITY OF SOUTH BEND
MINORITY AND WOMEN BUSINESS ENTERPRISE DIVERSITY
DEVELOPMENT PROGRAM**



**FORM MWBE-2.0
EVIDENCE OF GOOD FAITH EFFORTS**

This completed form should be included as part of the Bids documents related to City of South Bend Public Works Projects requiring Good Faith Efforts to obtain MBE/WBE participation. It is the bidder's sole responsibility to verify whether any listed minority or woman business meets the qualifications of a Minority or Women's owned business as defined by the Indiana Department of Administration ("IDOA").

Project Number: 116-001 Date: _____

Project Name: South Bend One-Way to Two-Way Street Conversion

Bidder: _____

Contact Person: _____ Telephone: _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____

To determine whether a bidder has demonstrated good faith efforts to reach the MBE/WBE utilization goals set forth in the City of South Bend Public Works Project Specifications, the City and its agencies, boards, or commissions, **REQUIRE ALL** of the following Good Faith Efforts as listed in the table below*:

EVIDENCE OF GOOD FAITH EFFORTS	
	MBE/WBE LIST(S): The bidder reviewed the City of South Bend's Minority and Women Business Enterprise Diversity Development Program, which uses the IDOA approved list of Minority and Women Owned Business as found on their website (http://www.in.gov/idoa).
	ACTION (ADVERTISE/CONTACT): In order for your bid to be deemed responsive, the City of South Bend requires that all perspective bidders complete no less than 2 of the following: <ol style="list-style-type: none"> 1. Attend all pre-bid meetings scheduled by the City to inform MBE/WBEs of contracting and subcontracting opportunities. 2. Advertise in general circulation and/or trade association publications concerning subcontracting opportunities, and allow MBE/WBEs reasonable time to respond. 3. Perform any and all necessary steps to provide written notice in a manner reasonably calculated to inform MBE/WBEs of subcontracting opportunities and allowed sufficient time for them to participate effectively. 4. Utilize pre-existing services of available community organizations, small and/or disadvantaged business assistance offices and other organizations that provided assistance in the recruitment and placement of MBE/WBE firms. <p>**Bidder must circle or otherwise notate which of the two (2) required actions were performed.</p>
	GOOD FAITH NEGOTIATIONS: The bidder negotiated in good faith with interested MBE/WBEs, including providing such MBE/WBE's with adequate information about the plans, specifications and other requirements of the subcontract and did not reject MBE/WBEs as unqualified without sound business reasons based on a thorough investigation of their capabilities.
	SMALL CONTRACT(S): The bidder selected specific portions of the work to be performed by MBE/WBEs in order to increase the likelihood of meeting the MBE/WBE goals (including breaking down contracts into smaller units to facilitate MBE/WBE participation)
	CONTRACT RECORDS: The bidder has maintained the following records for each MBE/WBE that has bid on the subcontracting opportunity: <ol style="list-style-type: none"> 1. Name, address, and telephone number; 2. A description of information provided by the bidder or subcontractor; and 3. A statement of whether an agreement was reached, and if not, why not, including any reasons for concluding that the MBE/WBE was unqualified to perform the job.

***Proper demonstration of Good Faith Effort requires your initials next to all of the above boxes. Any omissions shall be considered grounds for rejection of the bid by the Board of Public Works. The City of South Bend reserves the right to request additional information.**

CITY OF SOUTH BEND
MINORITY AND WOMEN BUSINESS ENTERPRISE DIVERSITY
DEVELOPMENT PROGRAM



FORM MWBE-2.1
MBE/WBE CONTACTED

This completed form should be supplied with Bids that pertain to City of South Bend Public Works Projects requiring contacted MBE/WBE to obtain Good Faith Efforts. It is the bidder's sole responsibility to verify whether any listed minority or woman business meets the qualifications of a Minority or Women's owned business.

PAGE _____ OF _____

Project Number: 116-001 MBE/WBE Participation Goal _____

Project Name: South Bend One-Way to Two-Way Street Conversion

Bidder: _____

By: _____
(Signature) (Title) (Date)

MBE/WBE Firm _____

Owner or Contact at MBE/WBE Firm _____

Telephone: _____ Fax: _____ Email: _____

TYPE OF WORK SOLICITED FOR THIS PROJECT:

RESULTS OF CONTACT WITH THE MBE/WBE FIRM:

MBE/WBE Firm _____

Owner or Contact at MBE/WBE Firm _____

Telephone: _____ Fax: _____ Email: _____

TYPE OF WORK SOLICITED FOR THIS PROJECT:

RESULTS OF CONTACT WITH THE MBE/WBE FIRM:

Appendix A Railroad Agreement

THIS AGREEMENT, dated as of the ____ day of _____, 201_ is made and entered into by and between

NORFOLK SOUTHERN RAILWAY COMPANY, a Virginia corporation, whose mailing address is Three Commercial Place, Norfolk, Virginia 23510 (hereinafter called "RAILWAY"); and

CITY OF SOUTH BEND, an Indiana Municipality, whose mailing address is 227 West Jefferson Boulevard, South Bend, Indiana (hereinafter called "LICENSEE").

RECITALS

WHEREAS, LICENSEE, at its own cost and expense, has found it necessary to install signals for South Michigan Street to the substructure of the existing RAILWAY Bridge (the "Facilities"), in the vicinity of RAILWAY Milepost CD-436.47, at or near South Bend, Saint Joseph County, Indiana (the "Premises"), located substantially as shown upon print of Drawing marked Exhibit A; and

WHEREAS, RAILWAY is willing to permit LICENSEE to enter upon RAILWAY's right of way for installation, construction, maintenance, operation and removal of the Facilities upon the terms and conditions of this Agreement; and in accordance with the plans and specifications attached hereto by reference upon approval of said plans, specifications or revisions by RAILWAY; and

WHEREAS, RAILWAY is willing, at LICENSEE's sole expense, to make modifications to RAILWAY's right of way and/or appurtenances rendered necessary by LICENSEE's installation, construction, maintenance, operation and removal of its Facilities in accordance with the force account estimate marked Exhibit C.

NOW THEREFORE, for and in consideration of the premises and mutual covenants contained in this Agreement, the parties agree as follows:

I. LICENSEE'S FACILITIES

1. Right-of-Entry. RAILWAY, insofar as its rights and title enables it to do so and subject to its rights to operate and maintain its RAILWAY and RAILWAY appurtenances along, in, and over its right-of-way, grants LICENSEE, its agents and/or contractors, without compensation, the right to enter upon the Premises, for the purpose of installation, construction, maintenance, operation and removal of the Facilities, provided that, prior to entry upon lands of RAILWAY, any agent and/or contractor of LICENSEE must execute and deliver to RAILWAY a standard contractor right-of-entry agreement in a form approved by RAILWAY in its sole discretion, together with any certificate(s) of insurance required therein. Furthermore, any crossing of RAILWAY tracks by LICENSEE or any of its agents and/or contractors must be addressed by a standard temporary crossing agreement in a form approved by RAILWAY in its sole discretion.

2. Use and Condition of the Premises. The Premises shall be used by LICENSEE only for the installation, construction, maintenance, operation and removal of the Facilities and for no other purpose without the prior written consent of RAILWAY, which consent may be withheld by RAILWAY in its sole discretion. LICENSEE accepts the Premises in their current "as is" condition, as suited for the installation and operation of the Facilities, and without the benefit of any improvements to be constructed by RAILWAY except insofar as contemplated by Section II of this Agreement.

3. Construction and Maintenance of the Facilities. LICENSEE shall construct and maintain the Facilities, at its expense, in such a manner as will not interfere with the operations of RAILWAY or endanger persons or property of RAILWAY, and in accordance with (a) plans and specifications (if any) attached hereto by reference upon approval of said plans, specifications or revisions by RAILWAY and any other specifications prescribed by RAILWAY, (b) applicable governmental regulations or laws, and (c)

applicable specifications adopted by the American Railway Engineering and Maintenance of Way Association when not in conflict with plans, specifications or regulations mentioned in (a) and (b) above. LICENSEE and any and all of LICENSEE contractors entering the Premises shall fully comply with applicable roadway worker protection regulations.

4. Indemnification. LICENSEE hereby agrees to indemnify and save harmless RAILWAY, its officers, agents and employees, from and against any and all liability, claims, losses, damages, expenses (including attorneys' fees) or costs for personal injuries (including death) and/or property damage to whomsoever or whatsoever occurring which arises or in any manner grows out of (a) the presence of LICENSEE, its employees, agents and/or contractors on or about the Premises, regardless of whether negligence on the part of RAILWAY, its officers, agents or employees caused or contributed to said loss of life, personal injury or property loss or damage in whole or in part; (b) any allegation that RAILWAY is an employer or joint employer of a LICENSEE or is liable for related employment benefits or tax withholdings; or (c) any decision by RAILWAY to bar or exclude LICENSEE from the Premises pursuant to the terms of this Agreement.

5. Environmental Matters. LICENSEE assumes all responsibility for any environmental obligations imposed under applicable laws, regulations or ordinances relating to the installation of the Facilities and/or to any contamination of any property, water, air or groundwater arising or resulting from LICENSEE's permitted operations or uses of RAILWAY's property pursuant to this Agreement. In addition, LICENSEE shall obtain any necessary permits to install the Facilities. LICENSEE agrees to indemnify and hold harmless RAILWAY from and against any and all liability, fines, penalties, claims, demands, costs (including attorneys' fees), losses or lawsuits brought by any person, company or governmental entity relating to contamination of any property, water, air or groundwater due to the use or presence of the Facilities. It is agreed that this indemnity provision extends to any cleanup costs related to LICENSEE's activities upon RAILWAY's property and to any costs related to cleanup of the Facilities or to other property caused by the use of the Facilities.

6. Insurance.

(a) Without limiting in any manner the liabilities and obligations assumed by LICENSEE under any other provision of this Agreement, and as additional protection to RAILWAY, LICENSEE shall, at its expense, procure and maintain with insurance companies satisfactory to RAILWAY, the following insurance policies:

(i) A Commercial General Liability Insurance Policy having a combined single limit of not less than \$2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include explosion, collapse, and underground hazard (XCU) coverage, shall be endorsed to name RAILWAY as the certificate holder and as an additional insured, and shall include a severability of interests provision; and,

(ii) An original Railroad Protective Liability Insurance Policy naming RAILWAY as a named insured and having a combined single limit of not less than \$2,000,000 each occurrence and \$6,000,000 in the aggregate applying separately to each annual period. If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of \$5,000,000 each occurrence and \$10,000,000 in the aggregate applying separately to each annual period.

(b) All insurance required under the preceding subsection (a) shall be underwritten by insurers and be of such form and content, as may be acceptable to RAILWAY. Prior to the commencement of installation or maintenance of the Facilities or any entry on RAILWAY's property, LICENSEE shall furnish to RAILWAY's Director Risk Management, Three Commercial Place, Norfolk, Virginia 23510-2191 (or such other representative and/or address as subsequently given by RAILWAY to LICENSEE in

writing), for approval, the original policy described in subsection (a)(ii) and a certificate of insurance evidencing the existence of a policy with the coverage described in subsection (a)(i).

7. Railway Support. RAILWAY shall, at RAILWAY's option, furnish, at the sole expense of LICENSEE, labor and materials necessary, in RAILWAY's sole judgment, to support its tracks and to protect its traffic (including, without limitation, flagging) during the installation, maintenance, repair, renewal or removal of the Facilities.

8. Special Provisions for Protection of Railway Interests. In connection with the operation and maintenance of the Facilities, it is agreed that the safety of people and the safety and continuity of RAILWAY's rail operations shall be of first importance. LICENSEE shall require its employees, agents, contractors, and invitees to utilize and comply with RAILWAY's directives in this regard and shall require its contractor(s), if any, to comply with all NSR Special Provisions, attached hereto, and herein incorporated by reference, including any future amendments, as Exhibit B. As used in the NSR Special Provisions, LICENSEE is the "contractor" should LICENSEE enter onto the Premises to perform any work contemplated by this Agreement. To ensure such compliance, LICENSEE shall assign a project manager to function as a single point-of-contact for LICENSEE. Said project manager is referred to as the "Sponsor's Engineer" in Exhibit B.

9. Safety of Railway Operations. If RAILWAY becomes aware of any safety violations committed by LICENSEE, its employees, agents and/or contractors, RAILWAY shall so notify LICENSEE, and LICENSEE shall promptly correct such violation. In the event of an emergency threatening immediate danger to persons or property, RAILWAY may take corrective actions and shall notify LICENSEE promptly thereafter. LICENSEE shall reimburse RAILWAY for actual costs incurred in taking such emergency measures. RAILWAY assumes no additional responsibility for safety on the Premises for LICENSEE, its agents/or contractors by taking these corrective actions, and LICENSEE, its agents/contractors shall retain full responsibility for such safety violations.

10. Corrective Measures. If LICENSEE fails to take any corrective measures requested by RAILWAY in a timely manner, or if an emergency situation is presented which, in RAILWAY's judgment, requires immediate repairs to the Facilities, RAILWAY, at LICENSEE's expense, may undertake such corrective measures or repairs as it deems necessary or desirable.

11. Railway Changes. If RAILWAY shall make any changes, alterations or additions to the line, grade, tracks, structures, roadbed, installations, right-of-way or works of RAILWAY, or to the character, height or alignment of the Electronic Systems, at or near the Facilities, LICENSEE shall, upon thirty (30) days prior written notice from RAILWAY and at its sole expense, make such changes in the location and character of the Facilities as, in the opinion of the chief engineering officer of RAILWAY, shall be necessary or appropriate to accommodate any construction, improvements, alterations, changes or additions of RAILWAY.

12. Assumption of Risk. Unless caused solely by the negligence of RAILWAY or caused solely by the willful misconduct of RAILWAY, LICENSEE hereby assumes all risk of damage to the Facilities and LICENSEE's other property relating to its use and occupation of the Premises or business carried on the Premises and any defects to the Premises; and LICENSEE hereby declares and states that RAILWAY, its officers, directors, agents and employees shall not be responsible for any liability for such damage.

13. Liens; Taxes. LICENSEE will not permit any mechanic's liens or other liens to be placed upon the Premises, and nothing in this Agreement shall be construed as constituting the consent or request of RAILWAY, express or implied, to any person for the performance of any labor or the furnishing of any materials to the Premises, nor as giving LICENSEE any right, power or authority to contract for or permit the rendering of any services or the furnishing of any materials that could give rise to any mechanic's liens or other liens against the Premises. In addition, LICENSEE shall be liable for all taxes levied or assessed against the Facilities and any other equipment or other property placed by LICENSEE within the Premises. In the event that any such lien shall attach to the Premises or LICENSEE shall fail to pay such taxes, then, in addition to any other right or remedy available to RAILWAY, RAILWAY may, but shall not be obligated to, discharge the same. Any amount paid by RAILWAY for any of the aforesaid purposes, together with related court costs, attorneys' fees, fines and penalties, shall be paid by LICENSEE to RAILWAY within ten (10) days after RAILWAY's demand therefor.

14. Default; Remedies.

(a) The following events shall be deemed to be events of default by LICENSEE under this Agreement:

(i) LICENSEE shall fail to pay any sum of money due hereunder and such failure shall continue for a period of ten (10) days after the due date thereof;

(ii) LICENSEE shall fail to comply with any provision of this Agreement not requiring the payment of money, all of which terms, provisions and covenants shall be deemed material, and such failure shall continue for a period of thirty (30) days after written notice of such default is delivered to LICENSEE;

(iii) LICENSEE shall become insolvent or unable to pay its debts as they become due, or LICENSEE notifies RAILWAY that it anticipates either condition;

(iv) LICENSEE takes any action to, or notifies RAILWAY that LICENSEE intends to file a petition under any section or chapter of the United States Bankruptcy Code, as amended from time to time, or under any similar law or statute of the United States or any State thereof; or a petition shall be filed against LICENSEE under any such statute; or

(v) a receiver or trustee shall be appointed for LICENSEE's license interest hereunder or for all or a substantial part of the assets of LICENSEE, and such receiver or trustee is not dismissed within sixty (60) days of the appointment.

(b) Upon the occurrence of any event or events of default by LICENSEE, whether enumerated in this paragraph 15 or not, RAILWAY shall have the option to pursue any remedies available to it at law or in equity without any additional notices to LICENSEE. RAILWAY's remedies shall include, but not be limited to, the following: (i) termination of this Agreement, in which event LICENSEE shall immediately surrender the Premises to RAILWAY; (ii) entry into or upon the Premises to do whatever LICENSEE is obligated to do under the terms of this License, in which event LICENSEE shall reimburse RAILWAY on demand for any expenses which RAILWAY may incur in effecting compliance with LICENSEE's obligations under this License, but without rendering RAILWAY liable for any damages resulting to LICENSEE or the Facilities from such action; and (iii) pursuit of all other remedies available to RAILWAY at law or in equity, including, without limitation, injunctive relief of all varieties.

15. Railway Termination Right. Notwithstanding anything to the contrary in this Agreement, RAILWAY shall have the right to terminate this Agreement and the rights granted hereunder, after delivering to LICENSEE written notice of such termination no less than sixty (60) days prior to the effective date thereof, upon the occurrence of any one or more of the following events:

(a) If LICENSEE shall discontinue the use or operations of the Facilities; or

(b) If RAILWAY shall be required by any governmental authority having jurisdiction over the Premises to remove, relocate, reconstruct or discontinue operation of its railroad on or about the Premises; or

(c) If RAILWAY, in the good faith judgment of its Superintendent, shall require a change in the location or elevation of its railroad on or about the location of the Facilities or the Premises that might effectively prohibit the use or operation of the Facilities; or

(d) If RAILWAY, in the good faith judgment of its Superintendent, determines that the maintenance or use of the Facilities unduly interferes with the operation and maintenance of the facilities of RAILWAY, or with the present or future use of such property by RAILWAY, its lessees, affiliates, successors or assigns, for their respective purposes.

16. Condemnation. If the Premises or any portion thereof shall be taken or condemned in whole or in part for public purposes, or sold in lieu of condemnation, then this Agreement and the rights granted to LICENSEE hereunder shall, at the sole option of RAILWAY, forthwith cease and terminate. All compensation awarded for any taking (or sale proceeds in lieu thereof) shall be the property of RAILWAY, and LICENSEE shall have no claim thereto, the same being hereby expressly waived by LICENSEE.

17. Removal of Facilities; Survival. The Facilities are and shall remain the personal property of LICENSEE. Upon the termination of this Agreement, LICENSEE shall remove the Facilities from the Premises within thirty (30) days after the effective date thereof. In performing such removal, unless otherwise directed by RAILWAY, LICENSEE shall restore the Premises to the same condition as existed prior to the installation or placement of Facilities, reasonable wear and tear excepted. In the event LICENSEE shall fail to so remove the Facilities or restore the Premises, the Facilities shall be deemed to have been abandoned by LICENSEE, and the same shall become the property of RAILWAY for RAILWAY to use, remove, destroy or otherwise dispose of at its discretion and without responsibility for accounting to LICENSEE therefor; provided, however, in the event RAILWAY elects to remove the Facilities, RAILWAY, in addition to any other legal remedy it may have, shall have the right to recover from LICENSEE all costs incurred in connection with such removal and the restoration of the Premises. Notwithstanding anything to the contrary contained in this Agreement, the termination of this Agreement shall not relieve LICENSEE from LICENSEE's obligations accruing prior to the termination date, and such obligations shall survive any such termination of this Agreement.

18. Interests in Real Property

LICENSEE shall acquire or settle all property, property rights and all damages to property affected by the installation, construction, maintenance, and operation of the Facilities. The cost of said property, property rights and damages to property shall be borne by LICENSEE.

RAILWAY, insofar as it has the legal right so to do, shall permit LICENSEE to enter upon lands owned or operated by RAILWAY to construct and occupy its property with sufficient width to permit construction and maintenance of the Facilities. LICENSEE and RAILWAY shall enter into good faith negotiations for a price to be consistent with the property interest determined by LICENSEE to be needed for the proposed improvement.

However, the price to be paid by LICENSEE to RAILWAY for said conveyances (representing the fair market value thereof plus damages, if any, to the residue) shall be as mutually agreed upon within nine (9) months from the date of occupancy by LICENSEE, and if agreement as to price is reached, an additional period of ninety (90) days shall be allowed for settlement, it being agreed however, that if no agreement as to price is reached within the aforesaid nine (9) month period, LICENSEE will within ninety (90) days thereafter institute an eminent domain proceeding authorized by law for the determination of the value of same. The provisions of this Agreement shall survive the institution of such eminent domain proceeding.

LICENSEE shall furnish the plans and descriptions for any such conveyance. It is understood, however, that the foregoing right of entry is a permissive use only, and this Section is not intended to convey or obligate RAILWAY to convey any interest in its land.

II. SCOPE OF RAILROAD PROJECT, AND MAINTENANCE AND OWNERSHIP OF PROJECT IMPROVEMENTS

1. Scope of Work. The scope of the work by RAILWAY shall include any necessary acquisition of right-of-way, permitting, design, construction, and construction-related activities including, but not limited to, inspection, flagging, and superintendence, within and along RAILWAY property necessary to facilitate LICENSEE's installation, construction, maintenance, operation and removal of the Facilities ("Railroad Project").

2. Construction of the Railroad Project. The RAILWAY shall construct the Railroad Project in accordance with the force account estimate, attached as Exhibit C and herein incorporated by reference, including any future amendments thereto, and all applicable state and federal laws.

(a) All work performed by the RAILWAY related to the Railroad Project and consistent with the force account estimate will be deemed reimbursable project expenses, and shall be at no cost to the RAILWAY.

(b) RAILWAY shall accomplish work on the Railroad Project by the following: (i) railroad force account; (ii) existing continuing contracts at reasonable costs; (iii) contracting with the lowest responsible bidder based on appropriate solicitation; or (iv) contract without competitive bidding for minor work at reasonable costs.

3. Maintenance and Ownership of the Railroad Project. Upon completion of the Railroad Project, the RAILWAY shall own and, at its own cost and expense, maintain the Railroad Project improvements until such time as RAILWAY deems such maintenance to no longer be necessary.

4. Construction of the Railroad Project. Execution of this Agreement constitutes LICENSEE's issuance of a notice to proceed to RAILWAY with the Railroad Project ("Notice to Proceed"). RAILWAY shall make commercially reasonable efforts to commence construction on the Railroad Project as soon as possible, in RAILWAY's sole discretion, after the date of availability for RAILWAY to commence its construction activities on the Railroad Project.

5. Reimbursement by LICENSEE.

(a) RAILWAY shall furnish, or cause to be furnished, at the expense of the LICENSEE all the labor costs, overhead and indirect construction costs, materials and supplies, contracted services, transportation, equipment, and other related costs and items required to perform and complete the Railroad Project. In addition, RAILWAY shall furnish, at the expense of LICENSEE, the protection of rail traffic occasioned by or made necessary by entry by LICENSEE and/or its contractors or any subcontractor(s) pursuant to this Agreement.

(b) Except as otherwise provided in this Agreement, LICENSEE shall reimburse the RAILWAY for the actual cost of the work performed by it, which is estimated to be **Twenty Thousand Nine Hundred Thirty-Two Dollars and zero Cents (\$27,932.00)**. It is agreed that progress payments will be made by LICENSEE to the RAILWAY for the total amount of work done as shown on monthly statements. LICENSEE shall pay each RAILWAY statement within forty-five (45) days of receipt. Upon receipt of the final bill, RAILWAY shall be reimbursed in such amounts as are proper and eligible for final payment, and the RAILWAY Project shall be submitted to LICENSEE for final audit.

(c) Incurred Costs. The reimbursement amounts for all costs billed under this Agreement shall be subject to the applicable Federal principles and based on the full actual costs plus Approved Labor Additives. Design costs incurred by RAILWAY prior to issuance of the Notice to Proceed shall be reimbursed by LICENSEE.

III. GENERAL PROVISIONS

1. Assignment and Successors. This Agreement shall be binding upon and shall inure to the benefit of, and shall be enforceable by, the parties hereto and their respective permitted successors and assigns.

2. Limitations Upon Damages. Notwithstanding any other provision of this Agreement, RAILWAY shall not be liable for breach of this Agreement or under this Agreement for any consequential, incidental, exemplary, punitive, special, business damages or lost profits, as well as any claims for death, personal injury, and property loss and damage which occurs by reason of, or arises out of, or is incidental to the interruption in or usage of the Facilities placed upon or about the Premises by LICENSEE, including without limitation any damages under such claims that might be considered consequential, incidental, exemplary, punitive, special, business damages or loss profits.

3. Miscellaneous. All exhibits, attachments, riders and addenda referred to in this Agreement are incorporated into this Agreement and made a part hereof for all intents and purposes. Time is of the essence with regard to each provision of this Agreement. This Agreement shall be construed and interpreted in accordance with and governed by the laws of the State in which the Premises are located. Each covenant of RAILWAY and LICENSEE under this Agreement is independent of each other covenant under this Agreement. No default in performance of any covenant by a party shall excuse the other party from the performance of any other covenant.

4. Notice to Parties. Whenever any notice, statement or other communication is required under this Agreement, it shall be sent to the contact below except as otherwise provided in this Agreement or unless otherwise specifically advised.

As to LICENSEE:
Roger Nawrot, P.E. & P.L.S.
Assistant City Engineer
Division of Engineering
1316 County-City Building
227 West Jefferson Boulevard
South Bend, Indiana 46601
(574) 235-9251

As to RAILWAY:
c/o Norfolk Southern Corporation
1200 Peachtree Street, N.E.
Atlanta, Georgia 30309-3504
Attention: Public Projects Engineer

Either party may, by notice in writing, direct that future notices or demands be sent to a different address. All notices hereunder shall be deemed given upon receipt (or, if rejected, upon rejection).

5. Severability. The invalidity of any section, subsection, clause or provision of this Agreement shall not affect the validity of the remaining sections, subsections, clauses or provisions of this contract.

6. No Third Party Beneficiary. This Agreement shall be for the benefit of the parties only, and no person, firm or corporation shall acquire any rights whatsoever by virtue of this Agreement, except LICENSEE and the RAILWAY and their successors and assigns.

7. Force Majeure. The parties agree to pursue the completion of the Railroad Project in accordance with the requirements of this Agreement. No party shall be held responsible to the other for delays caused by Force Majeure events, and such delays shall not be deemed a breach or default under this Agreement. In no event shall Force Majeure events excuse LICENSEE from its obligation to make payment to RAILWAY in accordance with this Agreement. Further the parties agree that the resolution or settlement of strikes or other labor disputes shall not

be deemed to be within the control or reasonable control of the affected party. If any party is unable to complete work assigned to it due to a condition of Force Majeure or other conditions beyond the reasonable control of said party, then said party will diligently pursue completion of the item that is delayed once said condition or conditions are no longer in effect. For purposes of this Agreement, Force Majeure events are defined as circumstances beyond a party's reasonable control that delay performance and may include, but are not limited to, acts of God, actions or decrees of governmental bodies (beyond control of the parties), acts of the public enemy, labor disputes, fires, insurrections, and floods.

8. Amendment; Entire Agreement. This Agreement may be amended only in writing executed by authorized representatives of the parties hereto. No verbal change, modification, or amendment shall be effective unless in writing and signed by authorized representatives of the parties. The provisions hereof constitute the entire Agreement between the parties and supersede any verbal statement, representations, or warranties, stated or implied.

9. Waiver of Workers Compensation Immunity. In the event that all or a portion of the Premises is location in the State of Ohio, LICENSEE, with respect to the indemnification provisions contained in this Agreement, hereby expressly waives any defense or immunity granted or afforded LICENSEE pursuant to Section 35, Article II of the Ohio Constitution and Section 4123.74 of the Ohio Revised Code. In the event that all or a portion of the Premises is located in the Commonwealth of Pennsylvania, LICENSEE, with respect to the indemnification provisions contained in this Agreement, hereby expressly waives any defense or immunity granted or afforded LICENSEE pursuant to Pennsylvania Workers' Compensation Act, 77 P.S. 481.

10. Independent Contractors. The parties agree that LICENSEE and its agents and/or contractors, shall not be deemed either agents or independent contractors of RAILWAY. Except as otherwise provided by this Agreement, RAILWAY shall exercise no control whatsoever over the employment, discharge, compensation of, or services rendered by LICENSEE or its contractors. Notwithstanding the foregoing, this paragraph shall in no way affect the absolute authority of RAILWAY to temporarily prohibit LICENSEE, its agents and/or contractors, or persons not associated with LICENSEE from entering RAILWAY property, or to require the removal of any person from RAILWAY property, if RAILWAY determines, in its sole discretion, that such person is not acting in a safe manner or that actual or potential hazards in, on, or about the Railroad Project Work exist.

11. Meaning of "Railway". The word "RAILWAY" as used herein shall include any other company whose property at the aforesaid location may be leased or operated by RAILWAY. Said term also shall include RAILWAY's officers, directors, agents and employees, and any parent company, subsidiary or affiliate of RAILWAY and their respective officers, directors, agents and employees.

12. Approval of Plans. By its review and approval, if any, of the plans, RAILWAY signifies only that the plans and improvements to be constructed in accordance with the plans satisfy the RAILWAY's requirements. RAILWAY expressly disclaims all other representations and warranties in connection with said plans, including, but not limited to, the integrity, suitability or fitness for the purposes of the LICENSEE or any other person(s) of the plans or improvements constructed in accordance with the plans.

IN WITNESS WHEREOF, the parties have, through duly authorized representatives, entered into this Agreement effective the day and year first written above.

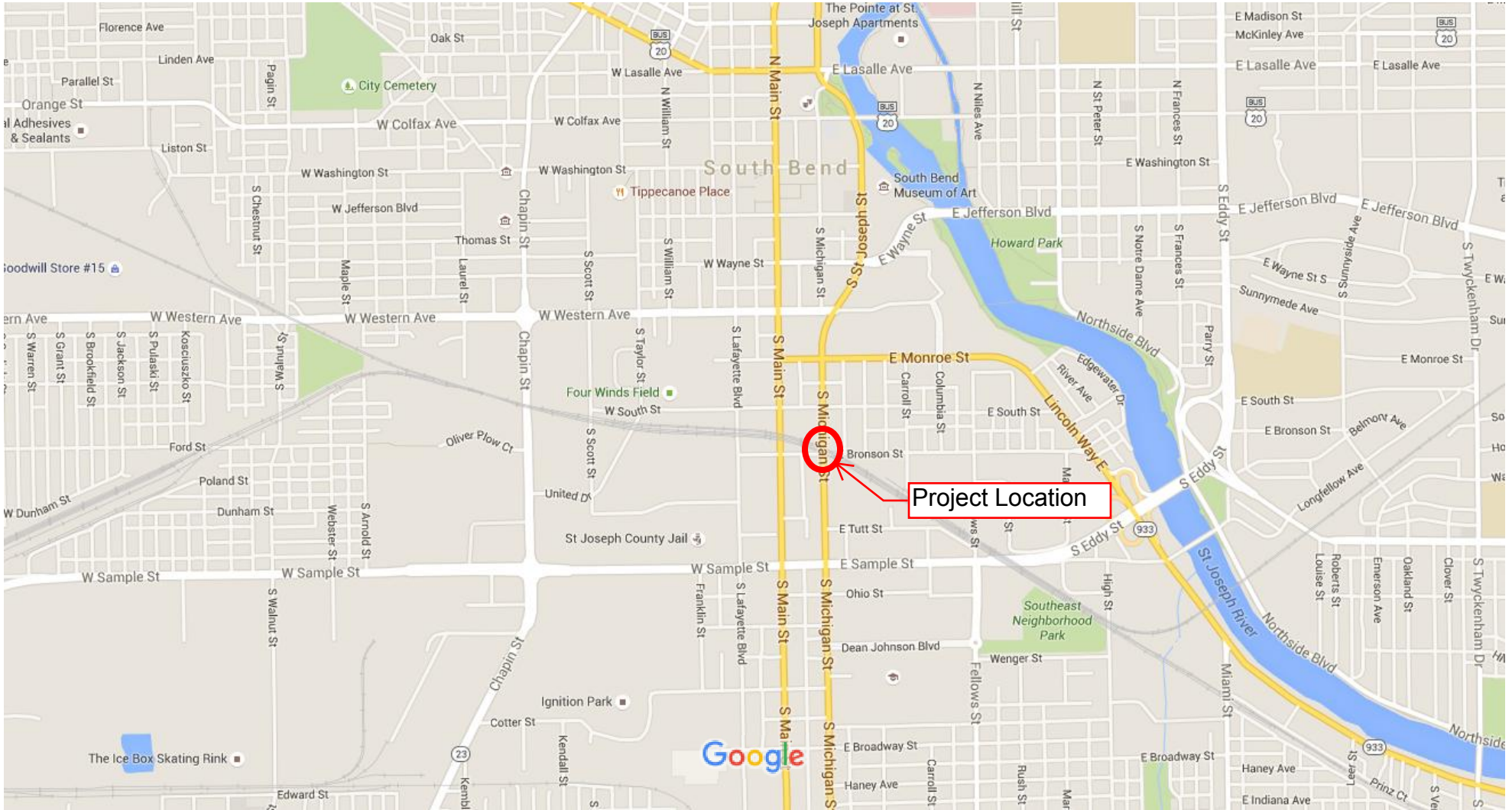
CITY OF SOUTH BEND, an Indiana
Municipality

**NORFOLK SOUTHERN RAILWAY
COMPANY**, a Virginia corporation

By: _____
Name: _____
Title: _____
Date: _____

By: _____
Name: _____
Title: _____
Date: _____

NS File: BR0029414



Map data ©2015 Google 1000 ft

EXHIBIT A

E. Norfolk Southern – Special Provisions for Protection of Railway Interests

1. AUTHORITY OF RAILROAD ENGINEER AND SPONSOR ENGINEER:

Norfolk Southern Railway Company, hereinafter referred to as “Railroad”, and their authorized representative shall have final authority in all matters affecting the safe maintenance of railroad traffic including the adequacy of the foundations and structures supporting the railroad tracks. For Public Projects impacting the Railroad, the Railroad’s Public Projects Engineer, hereinafter referred to as “Railroad Engineer”, will serve as the authorized representative of the Railroad.

The authorized representative of the Project Sponsor (“Sponsor”), hereinafter referred to as the “Sponsor’s Engineer”, shall have authority over all other matters as prescribed herein and in the Project Specifications.

The Sponsor’s Prime Contractor, hereinafter referred to as “Contractor” shall be responsible for completing any and all work in accordance with the terms prescribed herein and in the Project Specifications. These terms and conditions are subject to change without notice, from time to time in the sole discretion of the Railroad. Contractor must request from Railroad and follow the latest version of these provisions prior to commencing work.

2. NOTICE OF STARTING WORK:

- A. The Contractor shall not commence any work on railroad rights-of-way until he has complied with the following conditions:
 1. Signed and received a fully executed copy of the required Norfolk Southern Contractor Right of Entry Agreement.
 2. Given the Railroad written notice in electronic format to the Railroad Engineer, with copy to the Sponsor’s Engineer who has been designated to be in charge of the work, at least ten days in advance of the date he proposes to begin work on Railroad rights-of-way.
 3. Obtained written approval from the Railroad of Railroad Protective Liability Insurance coverage as required by paragraph 14 herein. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.
 4. Obtained Railroad’s Flagging Services as required by paragraph 7 herein.
 5. Obtained written authorization from the Railroad to begin work on Railroad’s rights-of-way, such authorization to include an outline of specific conditions with which he must comply.
 6. Furnished a schedule for all work within the Railroad’s rights-of-way as required by paragraph 7.B.1.

- B. The Railroad's written authorization to proceed with the work shall include the names, addresses, and telephone numbers of the Railroad's representatives who are to be notified as hereinafter required. Where more than one representative is designated, the area of responsibility of each representative shall be specified.
3. INTERFERENCE WITH RAILROAD OPERATIONS:
- A. The Contractor shall so arrange and conduct his work that there will be no interference with Railroad's operations, including train, signal, telephone and telegraphic services, or damage to the property of the Railroad or to poles, wires, and other facilities of tenants on the rights-of-way of the Railroad. Whenever work is liable to affect the operations or safety of trains, the method of doing such work shall first be submitted to the Railroad Engineer for approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor which requires flagging service or inspection service shall be deferred by the Contractor until the flagging service or inspection service required by the Railroad is available at the job site.
- B. Whenever work within Railroad's rights-of-way is of such a nature that impediment to Railroad's operations such as use of runaround tracks or necessity for reduced speed is unavoidable, the Contractor shall schedule and conduct his operations so that such impediment is reduced to the absolute minimum.
- C. Should conditions arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations and property of the Railroad, the Contractor shall make such provisions. If in the judgment of the Railroad Engineer, or in his absence, the Railroad's Division Engineer, such provisions is insufficient, either may require or provide such provisions as he deems necessary. In any event, such unusual provisions shall be at the Contractor's expense and without cost to the Railroad or the Sponsor.
- D. "One Call" Services do not locate buried Railroad utilities. The contractor shall contact the Railroad's representative 2 days in advance of work at those places where excavation, pile driving, or heavy loads may damage the Railroad's underground facilities. Upon request from the Contractor or Sponsor, Railroad forces will locate and paint mark or flag the Railroad's underground facilities. The Contractor shall avoid excavation or other disturbances of these facilities. If disturbance or excavation is required near a buried Railroad facility, the contractor shall coordinate with the Railroad to have the facility potholed manually with careful hand excavation. The facility shall be protected by the Contractor during the course of the disturbance under the supervision and direction of the Railroad's representative.
4. TRACK CLEARANCES:
- A. The minimum track clearances to be maintained by the Contractor during construction are shown on the Project Plans. If temporary clearances are not shown on the project plans, the following criteria shall govern the use of falsework and formwork above or adjacent to operated tracks.
1. A minimum vertical clearance of 22'-0" above top of highest rail shall be maintained at all times.
 2. A minimum horizontal clearance of 13'-0" from centerline of tangent track or 14'-0" from centerline of curved track shall be maintained at all times. Additional horizontal

clearance may be required in special cases to be safe for operating conditions. This additional clearance will be as determined by the Railroad Engineer.

3. All proposed temporary clearances which are less than those listed above must be submitted to Railroad Engineer for approval prior to construction and must also be authorized by the regulatory body of the State if less than the legally prescribed clearances.
4. The temporary clearance requirements noted above shall also apply to all other physical obstructions including, but not limited to: stockpiled materials, parked equipment, placement or driving of piles, and bracing or other construction supports.

B. Before undertaking any work within Railroad right-of-way, and before placing any obstruction over any track, the Contractor shall:

1. Notify the Railroad's representative at least 72 hours in advance of the work.
2. Receive assurance from the Railroad's representative that arrangements have been made for flagging service as may be necessary.
3. Receive permission from the Railroad's representative to proceed with the work.
4. Ascertain that the Sponsor's Engineer has received copies of notice to the Railroad and of the Railroad's response thereto.

5. CONSTRUCTION PROCEDURES:

A. General:

1. Construction work and operations by the Contractor on Railroad property shall be:
 - a. Subject to the inspection and approval of the Railroad Engineer or their designated Construction Engineering Representative.
 - b. In accordance with the Railroad's written outline of specific conditions.
 - c. In accordance with the Railroad's general rules, regulations and requirements including those relating to safety, fall protection and personal protective equipment.
 - d. In accordance with these Special Provisions.
2. Submittal Requirements
 - a. The Contractor shall submit all construction related correspondence and submittals electronically to the Railroad Engineer.
 - b. The Contractor shall allow for 30 days for the Railroad's review and response.
 - c. All work in the vicinity of the Railroad's property that has the potential to affect the Railroad's train operations or disturb the Railroad's Property must be submitted and approved by the Railroad prior to work being performed.

- d. All submittals and calculations must be signed and sealed by a registered engineer licensed in the state of the project work.
- e. All submittals shall first be approved by the Sponsor's Engineer and the Railroad Engineer, but such approval shall not relieve the Contractor from liability.
- f. For all construction projects, the following submittals, but not limited to those listed below, shall be provided for review and approval when applicable:
 - (1) General Means and Methods
 - (2) Ballast Protection
 - (3) Construction Excavation & Shoring
 - (4) Pipe, Culvert, & Tunnel Installations
 - (5) Demolition Procedure
 - (6) Erection & Hoisting Procedure
 - (7) Debris Shielding or Containment
 - (8) Blasting
 - (9) Formwork for the bridge deck, diaphragms, overhang brackets, and protective platforms
 - (10) Bent Cap Falsework. A lift plan will be required if the contractor want to move the falsework over the tracks.
- g. For Undergrade Bridges (Bridges carrying the Railroad) the following submittals in addition to those listed above shall be provided for review and approval:
 - (1) Shop Drawings
 - (2) Bearing Shop Drawings and Material Certifications
 - (3) Concrete Mix Design
 - (4) Structural Steel, Rebar, and/or Strand Certifications
 - (5) 28 day Cylinder Test for Concrete Strength
 - (6) Waterproofing Material Certification
 - (7) Test Reports for Fracture Critical Members
 - (8) Foundation Construction Reports

Fabrication may not begin until the Railroad has approved the required shop drawings.

- h. The Contractor shall include in all submissions a detailed narrative indicating the progression of work with the anticipated timeframe to complete each task. Work will not be permitted to commence until the Contractor has provided the Railroad with a satisfactory plan that the project will be undertaken without scheduling, performance or safety related issues. Submission shall also provide a listing of the anticipated equipment to be used, the location of all equipment to be used and insure a contingency plan of action is in place should a primary piece of equipment malfunction.

B. Ballast Protection

- 1. The Contractor shall submit the proposed ballast protection system detailing the specific filter fabric and anchorage system to be used during all construction activities.

2. The ballast protection is to extend 25' beyond the proposed limit of work, be installed at the start of the project and be continuously maintained to prevent all contaminants from entering the ballast section of all tracks for the entire duration of the project.
- C. Excavation:
1. The subgrade of an operated track shall be maintained with edge of berm at least 10'-0" from centerline of track and not more than 24-inches below top of rail. Contractor will not be required to make existing section meet this specification if substandard, in which case existing section will be maintained.
 2. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.
- D. Excavation for Structures and Shoring Protection:
1. The Contractor will be required to take special precaution and care in connection with excavating and shoring pits, and in driving piles or sheeting for footings adjacent to tracks to provide adequate lateral support for the tracks and the loads which they carry, without disturbance of track alignment and surface, and to avoid obstructing track clearances with working equipment, tools or other material.
 2. All plans and calculations for shoring shall be prepared, signed, and sealed by a Registered Professional Engineer licensed in the state of the proposed project, in accordance with Norfolk Southern's Overhead Grade Separation Design Criteria, subsection H.1.6.E-Construction Excavation (Refer to Norfolk Southern Public Projects Manual Appendix H). The Registered Professional Engineer will be responsible for the accuracy for all controlling dimensions as well as the selection of soil design values which will accurately reflect the actual field conditions.
 3. The Contractor shall provide a detailed installation and removal plan of the shoring components. Any component that will be installed via the use of a crane or any other lifting device shall be subject to the guidelines outlined in section 5.G of these provisions.
 4. The Contractor shall be required to survey the track(s) and Railroad embankment and provide a cross section of the proposed excavation in relation to the tracks.
 5. Calculations for the proposed shoring should include deflection calculations. The maximum deflection for excavations within 18'-0" of the centerline of the nearest track shall be 3/8". For all other cases, the max deflection shall not exceed 1/2".
 6. Additionally, the Railroad will require the installation of an OSHA approved handrail and orange construction safety fencing for all excavations of the Railroad right-of-way.
 7. The front face of shoring located to the closet NS track for all shoring set-ups located in Zone 2 as shown on NS Typical Drawing No. 4 – Shoring Requirements (Appendix I) shall remain in place and be cut off 2'-0" below the final ground elevation. The remaining shoring in Zone 2 and all shoring in Zone 1 may be removed and all voids must be backfilled with flowable fill.
- E. Pipe, Culvert, & Tunnel Installations

1. Pipe, Culvert, & Tunnel Installations shall be in accordance with the appropriate Norfolk Southern Design Specification as noted below:
 - a. For Open Cut Method refer to Norfolk Southern Public Projects Manual Appendix H.4.6.
 - b. For Jack and Bore Method refer to Norfolk Southern Public Projects Manual Appendix H.4.7.
 - c. For Tunneling Method refer to Norfolk Southern Public Projects Manual Appendix H.4.8.
 2. The installation methods provided are for pipes carrying storm water or open flow run-off. All other closed pipeline systems shall be installed in accordance Norfolk Southern's Pipe and Wire Program and the NSCE-8
- F. Demolition Procedures
1. General
 - a. Demolition plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.
 - b. Railroad tracks and other Railroad property must be protected from damage during the procedure.
 - c. A pre-demolition meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the demolition procedure.
 - d. The Railroad Engineer or his designated representative must be present at the site during the entire demolition procedure period.
 - e. Existing, obsolete, bridge piers shall be removed to a sufficient depth below grade to enable restoration of the existing/proposed track ditch, but in no case less than 2'-0" below final grade.
 2. Submittal Requirements
 - a. In addition to the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:
 - (1) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or disposal locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.

- (2) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been "built-in" to the crane charts are not to be considered when determining the 150% factor of safety.
- (3) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the existing structure showing complete and sufficient details with supporting data for the demolition the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.
- (4) The Contractor shall provide a sketch of all rigging components from the crane's hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been "built-in" to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad.
- (5) A complete demolition procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.
- (6) Design and supporting calculations for the temporary support of components, including but not limited to the stability of the superstructure during the temporary condition, temporary girder tie-downs and falsework.

3. Overhead Demolition Debris Shield

- a. The demolition debris shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the superstructure over the track area to catch all falling debris.
- b. The demolition debris shield shall provide a minimum vertical clearance as specified in Section 4.A.1 of these provisions or maintain the existing vertical clearance if the existing clearance is less than that specified in Section 4.A.1.
- c. The Contractor shall include the demolition debris shield installation/removal means and methods as part of the proposed Demolition procedure submission.
- d. The Contractor shall submit the demolition debris shield design and supporting calculations for approval by the Railroad Engineer.

- e. The demolition debris shield shall have a minimum design load of 50 pounds per square foot plus the weight of the equipment, debris, personnel, and other loads to be carried.
 - f. The Contractor shall include the proposed bridge deck removal procedure in its demolition means and methods and shall verify that the size and quantity of the demolition debris generated by the procedure does not exceed the shield design loads.
 - g. The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Railroad Engineer.
4. Vertical Demolition Debris Shield
- a. A vertical demolition debris shield may be required for substructure removals in close proximity to the Railroad's track and other facilities, as determined by the Railroad Engineer.
- G. Erection & Hoisting Procedures
1. General
 - a. Erection plans are required for all spans over the track(s), for all spans adjacent to the track(s), if located on (or partially on) Railroad right-of-way; and in all situations where cranes will be situated on, over, or adjacent to Railroad right-of-way and within a distance of the boom length plus 15'-0" from the centerline of track.
 - b. Railroad tracks and other Railroad property must be protected from damage during the erection procedure.
 - c. A pre-erection meeting shall be conducted with the Sponsor, the Railroad Engineer or their representative, and the key Contractor's personnel prior to the start of the erection procedure.
 - d. The Railroad Engineer or his designated representative must be present at the site during the entire erection procedure period.
 - e. For field splices located over Railroad property, a minimum of 50% of the holes for each connection shall be filled with bolts or pins prior to releasing the crane. A minimum of 50% of the holes filled shall be filled with bolts. All bolts must be appropriately tightened. Any changes to previously approved field splice locations must be submitted to the Railroad for review and approval. Refer to Norfolk Southern's Overhead Grade Separation Design Criteria for additional splice details (Norfolk Southern Public Projects Manual Appendix H.1, Section 4.A.3.).
 2. Submittal Requirements

- a. In addition the submittal requirements outlined in Section 5.A.2 of these provisions, the Contractor shall submit the following for approval by the Railroad Engineer:
- (1) As-built beam seat elevations - All as-built bridge seats and top of rail elevations shall be furnished to the Railroad Engineer for review and verification at least 30 days in advance of the erection, to ensure that minimum vertical clearances as approved in the plans will be achieved.
 - (2) A plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or staging locations shown. The location of all tracks and other Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must also be shown.
 - (3) Rating sheets showing cranes or lifting devices to be adequate for 150% of the actual weight of the pick, including all rigging components. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted. Safety factors that may have been "built-in" to the crane charts are not to be considered when determining the 150% factor of safety.
 - (4) Plans and computations showing the weight of the pick must be submitted. Calculations shall be made from plans of the proposed structure showing complete and sufficient details with supporting data for the erection of the structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.
 - (5) The Contractor shall provide a sketch of all rigging components from the crane's hook block to the beam. Catalog cuts or information sheets of all rigging components with their lifting capacities shall be provided. All rigging must be adequate for 150% of the actual weight of the pick. Safety factors that may have been "built-in" to the rating charts are not to be considered when determining the 150% factor of safety. All rigging components shall be clearly identified and tagged with their rated lifting capacities. The position of the rigging in the field shall not differ from what is shown on the final plan without prior review from the Sponsor and the Railroad.
 - (6) A complete erection procedure, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.
 - (7) Design and supporting calculations for the temporary support of components, including but not limited to temporary girder tie-downs and falsework.

H. Blasting:

1. The Contractor shall obtain advance approval of the Railroad Engineer and the Sponsor Engineer for use of explosives on or adjacent to Railroad property. The request for permission to use explosives shall include a detailed blasting plan. If permission for use of explosives is granted, the Contractor will be required to comply with the following:
 - a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Contractor and a licensed blaster.
 - b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way radios.
 - c. No blasting shall be done without the presence of the Railroad Engineer or his authorized representative. At least 72 hours advance notice to the person designated in the Railroad's notice of authorization to proceed (see paragraph 2.B) will be required to arrange for the presence of an authorized Railroad representative and such flagging as the Railroad may require.
 - d. Have at the job site adequate equipment, labor and materials and allow sufficient time to clean up debris resulting from the blasting without delay to trains, as well as correcting at his expense any track misalignment or other damage to Railroad property resulting from the blasting as directed by the Railway's authorized representative. If his actions result in delay of trains, the Contractor shall bear the entire cost thereof.
 - e. The blasting Contractor shall have a copy of the approved blasting plan on hand while on the site.
 - f. Explosive materials or loaded holes shall not be left unattended at the blast site.
 - g. A seismograph shall be placed on the track shoulder adjacent to each blast which will govern the peak particle velocity of two inches per second. Measurement shall also be taken on the ground adjacent to structures as designated by a qualified and independent blasting consultant. The Railroad reserves the option to direct the placement of additional seismographs at structures or other locations of concern, without regard to scaled distance.
 - h. After each blast, the blasting Contractor shall provide a copy of their drill log and blast report, which includes number of holes, depth of holes, number of decks, type and pounds of explosives used per deck.
 - i. The Railroad may require top of rail elevations and track centers taken before, during and after the blasting and excavation operation to check for any track misalignment resulting from the Contractor's activities.
2. The Railroad representative will:
 - a. Determine approximate location of trains and advise the Contractor the appropriate amount of time available for the blasting operation and clean up.

- b. Have the authority to order discontinuance of blasting if, in his opinion, blasting is too hazardous or is not in accord with these special provisions.
3. The Contractor must hire, at no expense to the Railroad, a qualified and independent blasting consultant to oversee the use of explosives. The blasting consultant will:
 - a. Review the Contractor's proposed drilling and loading patterns, and with the blasting consultant's personnel and instruments, monitor the blasting operations.
 - b. Confirm that the minimum amounts of explosives are used to remove the rock.
 - c. Be empowered to intercede if he concludes that the Contractor's blasting operations are endangering the Railway.
 - d. Submit a letter acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.
 - e. Furnish copies of all vibration readings to the Railroad representative immediately after each blast. The representative will sign and date the seismograph tapes after each shot to verify the readings are for that specific shot.
 - f. Advise the Railroad representative as to the safety of the operation and notify him of any modifications to the blasting operation as the work progresses.
4. The request for permission to use explosives on the Railroad's Right-of-Way shall include a blasting proposal providing the following details:
 - a. A drawing which shows the proposed blasting area, location of nearest hole and distance to Railway structures, all with reference to the centerline of track.
 - b. Hole diameter.
 - c. Hole spacing and pattern.
 - d. Maximum depth of hole.
 - e. Maximum number of decks per hole.
 - f. Maximum pounds of explosives per hole.
 - g. Maximum pounds of explosives per delay.
 - h. Maximum number of holes per detonation.
 - i. Type of detonator and explosives to be used. (Electronic detonating devices will not be permitted). Diameter of explosives if different from hole diameter.
 - j. Approximate dates and time of day when the explosives are to be detonated.
 - k. Type of flyrock protection.



- l. Type and patterns of audible warning and all clear signals to be used before and after each blast.
 - m. A copy of the blasting license and qualifications of the person directly in charge of the blasting operation, including their name, address and telephone number.
 - n. A copy of the Authority's permit granting permission to blast on the site.
 - o. A letter from the blasting consultant acknowledging that he has been engaged to oversee the entire blasting operation and that he approves of the blasting plan.
 - p. In addition to the insurance requirements outlined in Paragraph 14 of these Provisions, A certificate of insurance from the Contractor's insurer stating the amount of coverage for XCU (Explosive Collapse and Underground Hazard) insurance and that XCU Insurance is in force for this project.
 - q. A copy of the borings and Geotechnical information or report.
- I. Track Monitoring
- 1. At the direction of the Railroad Engineer, any activity that has the potential to disturb the Railroad track structure may require the Contractor to submit a detailed track monitoring program for approval by the Railroad Engineer.
 - 2. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. Railroad reserves the right to modify the survey locations and monitoring frequency as necessary during the project.
 - 3. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Railroad Engineer for analysis.
 - 4. If any movement has occurred as determined by the Railroad Engineer, the Railroad will be immediately notified. Railroad, at its sole discretion, shall have the right to immediately require all Contractor operations to be ceased and determine what corrective action is required. Any corrective action required by the Railroad or performed by the Railroad including the monitoring of corrective action of the Contractor will be at project expense.
- J. Maintenance of Railroad Facilities:
- 1. The Contractor will be required to maintain all ditches and drainage structures free of silt or other obstructions which may result from his operations and provide and maintain any erosion control measures as required. The Contractor will promptly repair eroded areas within Railroad rights-of-way and repair any other damage to the property of the Railroad or its tenants.
 - 2. If, in the course of construction, it may be necessary to block a ditch, pipe or other drainage facility, temporary pipes, ditches or other drainage facilities shall be installed to maintain adequate drainage, as approved by the Railroad Engineer. Upon completion

of the work, the temporary facilities shall be removed and the permanent facilities restored.

3. All such maintenance and repair of damages due to the Contractor's operations shall be done at the Contractor's expense.

K. Storage of Materials and Equipment:

1. Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the rights-of-way of the Railroad without first having obtained permission from the Railroad Engineer, and such permission will be with the understanding that the Railroad will not be liable for damage to such material and equipment from any cause and that the Railroad Engineer may move or require the Contractor to move, at the Contractor's expense, such material and equipment.
2. All grading or construction machinery that is left parked near the track unattended by a watchman shall be effectively immobilized so that it cannot be moved by unauthorized persons. The Contractor shall protect, defend, indemnify and save Railroad, and any associated, controlled or affiliated corporation, harmless from and against all losses, costs, expenses, claim or liability for loss or damage to property or the loss of life or personal injury, arising out of or incident to the Contractor's failure to immobilize grading or construction machinery.

L. Cleanup:

1. Upon completion of the work, the Contractor shall remove from within the limits of the Railroad rights-of-way, all machinery, equipment, surplus materials, falsework, rubbish or temporary buildings of the Contractor, and leave said rights-of-way in a neat condition satisfactory to the Railroad Engineer or his authorized representative.

6. DAMAGES:

- A. The Contractor shall assume all liability for any and all damages to his work, employees, servants, equipment and materials caused by Railroad traffic.
- B. Any cost incurred by the Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the Contractor, shall be paid directly to the Railroad by the Contractor.

7. FLAGGING SERVICES:

A. Requirements:

1. Flagging services will not be provided until the Contractor's insurance has been reviewed & approved by the Railroad.
2. Under the terms of the agreement between the Sponsor and the Railroad, the Railroad has sole authority to determine the need for flagging required to protect its operations. In general, the requirements of such services will be whenever the Contractor's personnel or equipment are or are likely to be, working on the Railroad's right-of-way, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a Railroad structure or the Railroad roadbed or

surface and alignment of any track to such extent that the movement of trains must be controlled by flagging.

3. Normally, the Railroad will assign one flagman to a project; but in some cases, more than one may be necessary, such as yard limits where three (3) flagmen may be required. However, if the Contractor works within distances that violate instructions given by the Railroad's authorized representative or performs work that has not been scheduled with the Railroad's authorized representative, a flagman or flagmen may be required full time until the project has been completed.
4. For Projects exceeding 30 days of construction, Contractor shall provide the flagmen a small work area with a desk/counter and chair within the field/site trailer, including the use of bathroom facilities, where the flagman can check in/out with the Project, as well as to the flagman's home terminal. The work area should provide access to two (2) electrical outlets for recharging radio(s), and a laptop computer; and have the ability to print off needed documentation and orders as needed at the field/site trailer. This should aid in maximizing the flagman's time and efficiency on the Project.

B. Scheduling and Notification:

1. The Contractor's work requiring Railroad flagging should be scheduled to limit the presence of a flagman at the site to a maximum of 50 hours per week. The Contractor shall receive Railroad approval of work schedules requiring a flagman's presence in excess of 40 hours per week.
2. Not later than the time that approval is initially requested to begin work on Railroad right-of-way, Contractor shall furnish to the Railroad and the Sponsor a schedule for all work required to complete the portion of the project within Railroad right-of-way and arrange for a job site meeting between the Contractor, the Sponsor, and the Railroad's authorized representative. Flagman or Flagmen may not be provided until the job site meeting has been conducted and the Contractor's work scheduled.
3. The Contractor will be required to give the Railroad representative at least 10 working days of advance written notice of intent to begin work within Railroad right-of-way in accordance with this special provision. Once begun, when such work is then suspended at any time, or for any reason, the Contractor will be required to give the Railroad representative at least 3 working days of advance notice before resuming work on Railroad right-of-way. Such notices shall include sufficient details of the proposed work to enable the Railroad representative to determine if flagging will be required. If such notice is in writing, the Contractor shall furnish the Engineer a copy; if notice is given verbally, it shall be confirmed in writing with copy to the Engineer. If flagging is required, no work shall be undertaken until the flagman, or flagmen are present at the job site. It may take up to 30 days to obtain flagging initially from the Railroad. When flagging begins, the flagman is usually assigned by the Railroad to work at the project site on a continual basis until no longer needed and cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, it may take up to 30 days to again obtain from the Railroad. Due to Railroad labor agreements, it is necessary to give 5 working days notice before flagging service may be discontinued and responsibility for payment stopped.

4. If, after the flagman is assigned to the project site, an emergency arises that requires the flagman's presence elsewhere, then the Contractor shall delay work on Railroad right-of-way until such time as the flagman is again available. Any additional costs resulting from such delay shall be borne by the Contractor and not the Sponsor or Railroad.

C. Payment:

1. The Sponsor will be responsible for paying the Railroad directly for any and all costs of flagging which may be required to accomplish the construction.
2. The estimated cost of flagging is the current rate per day based on a 10-hour work day. This cost includes the base pay for the flagman, overhead, and includes a per diem charge for travel expenses, meals and lodging. The charge to the Sponsor by the Railroad will be the actual cost based on the rate of pay for the Railroad's employees who are available for flagging service at the time the service is required.
3. Work by a flagman in excess of 8 hours per day or 40 hours per week, but not more than 12 hours a day will result in overtime pay at 1 and 1/2 times the appropriate rate. Work by a flagman in excess of 12 hours per day will result in overtime at 2 times the appropriate rate. If work is performed on a holiday, the flagging rate is 2 and 1/2 times the normal rate.
4. Railroad work involved in preparing and handling bills will also be charged to the Sponsor. Charges to the Sponsor by the Railroad shall be in accordance with applicable provisions of Subchapter B, Part 140, Subpart I and Subchapter G, Part 646, Subpart B of the Federal-Aid Policy Guide issued by the Federal Highway Administration on December 9, 1991, including all current amendments. Flagging costs are subject to change. The above estimates of flagging costs are provided for information only and are not binding in any way.

D. Verification:

1. Railroad's flagman will electronically enter flagging time via Railroad's electronic billing system. Any complaints concerning flagging must be resolved in a timely manner. If the need for flagging is questioned, please contact the Railroad Engineer. All verbal complaints will be confirmed in writing by the Contractor within 5 working days with a copy to the Sponsor's Engineer. Address all written correspondence electronically to Railroad Engineer.
2. The Railroad flagman assigned to the project will be responsible for notifying the Sponsor Engineer upon arrival at the job site on the first day (or as soon thereafter as possible) that flagging services begin and on the last day that he performs such services for each separate period that services are provided. The Sponsor's Engineer will document such notification in the project records. When requested, the Sponsor's Engineer will also sign the flagman's diary showing daily time spent and activity at the project site.

8. HAUL ACROSS RAILROAD TRACK:

- A. Where the plans show or imply that materials of any nature must be hauled across Railroad's track, unless the plans clearly show that the Sponsor has included arrangements for such

haul in its agreement with the Railroad, the Contractor will be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the Railroad's track. The Contractor or Sponsor will be required to bear all costs incidental to such crossings whether services are performed by his own forces or by Railroad personnel.

- B. No crossing may be established for use of the Contractor for transporting materials or equipment across the tracks of the Railroad unless specific authority for its installation, maintenance, necessary watching and flagging thereof and removal, until a temporary private crossing agreement has been executed between the Contractor and Railroad. The approval process for an agreement normally takes 90 days.

9. WORK FOR THE BENEFIT OF THE CONTRACTOR:

- A. All temporary or permanent changes in wire lines or other facilities which are considered necessary to the project are shown on the plans; included in the force account agreement between the Sponsor and the Railroad or will be covered by appropriate revisions to same which will be initiated and approved by the Sponsor and/or the Railroad.
- B. Should the Contractor desire any changes in addition to the above, then he shall make separate arrangements with the Railroad for same to be accomplished at the Contractor's expense.

10. COOPERATION AND DELAYS:

- A. It shall be the Contractor's responsibility to arrange a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Railroad. In arranging his schedule he shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.
- B. No charge or claim of the Contractor against either the Sponsor or the Railroad will be allowed for hindrance or delay on account of railroad traffic; any work done by the Railroad or other delay incident to or necessary for safe maintenance of railroad traffic or for any delays due to compliance with these special provisions.

11. TRAINMAN'S WALKWAYS:

- A. Along the outer side of each exterior track of multiple operated track, and on each side of single operated track, an unobstructed continuous space suitable for trainman's use in walking along trains, extending to a line not less than 10 feet from centerline of track, shall be maintained. Any temporary impediments to walkways and track drainage encroachments or obstructions allowed during work hours while Railroad's protective service is provided shall be removed before the close of each work day. If there is any excavation near the walkway, a handrail, with 10'-0" minimum clearance from centerline of track, shall be placed and must conform to AREMA and/or FRA standards.

12. GUIDELINES FOR PERSONNEL ON RAILROAD RIGHT-OF-WAY:

- A. The Contractor and/or the Sponsor's personnel authorized to perform work on Railroad's property as specified in Section 2 above are not required to complete Norfolk Southern Roadway Worker Protection Training; However the Contractor and the Sponsor's personnel must be familiar with Norfolk Southern's standard operating rules and guidelines, should conduct themselves accordingly, and may be removed from the property for failure to follow these guidelines.

- B. All persons shall wear hard hats. Appropriate eye and hearing protection must be used. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots is prohibited. Hard-sole, lace-up footwear, zippered boots or boots cinched up with straps which fit snugly about the ankle are adequate. Wearing of safety boots is strongly recommended. In the vicinity of at-grade crossings, it is strongly recommended that reflective vests be worn.
- C. No one is allowed within 25' of the centerline of track without specific authorization from the flagman.
- D. All persons working near track while train is passing are to lookout for dragging bands, chains and protruding or shifted cargo.
- E. No one is allowed to cross tracks without specific authorization from the flagman.
- F. All welders and cutting torches working within 25' of track must stop when train is passing.
- G. No steel tape or chain will be allowed to cross or touch rails without permission from the Railroad.

13. GUIDELINES FOR EQUIPMENT ON RAILROAD RIGHT-OF-WAY:

- A. No crane or boom equipment will be allowed to set up to work or park within boom distance plus 15' of centerline of track without specific permission from Railroad official and flagman.
- B. No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.
- C. All employees will stay with their machines when crane or boom equipment is pointed toward track.
- D. All cranes and boom equipment under load will stop work while train is passing (including pile driving).
- E. Swinging loads must be secured to prevent movement while train is passing.
- F. No loads will be suspended above a moving train.
- G. No equipment will be allowed within 25' of centerline of track without specific authorization of the flagman.
- H. Trucks, tractors or any equipment will not touch ballast line without specific permission from Railroad official and flagman. Orange construction fencing may be required as directed.
- I. No equipment or load movement within 25' or above a standing train or Railroad equipment without specific authorization of the flagman.

- J. All operating equipment within 25' of track must halt operations when a train is passing. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.
 - K. All equipment, loads and cables are prohibited from touching rails.
 - L. While clearing and grubbing, no vegetation will be removed from Railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.
 - M. No equipment or materials will be parked or stored on Railroad's property unless specific authorization is granted from the Railroad Engineer.
 - N. All unattended equipment that is left parked on Railroad property shall be effectively immobilized so that it cannot be moved by unauthorized persons.
 - O. All cranes and boom equipment will be turned away from track after each work day or whenever unattended by an operator.
 - P. Prior to performing any crane operations, the Contractor shall establish a single point of contact for the Railroad flagman to remain in communication with at all times. Person must also be in direct contact with the individual(s) directing the crane operation(s).
14. INSURANCE:
- A. In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the Prime Contractor will be required to carry insurance of the following kinds and amounts:
 - 1. a. Commercial General Liability Insurance having a combined single limit of not less than \$2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include explosion, collapse, and underground hazard (XCU) coverage, shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured, and shall include a severability of interests provision.
 - b. Automobile Liability Insurance with a combined single limit of not less than \$1,000,000 each occurrence for injury to or death of persons and damage to or loss or destruction of property. Said policy or policies shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured and shall include a severability of interests provision.
 - 2. Railroad Protective Liability Insurance having a combined single limit of not less than \$2,000,000 each occurrence and \$6,000,000 in the aggregate applying separately to each annual period. If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of \$5,000,000 each occurrence and \$10,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage or expense arising from bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site.

The standards for the Railroad Protective Liability Insurance are as follows:

- a. The insurer must be rated A- or better by A.M. Best Railroad, Inc.
NOTE: NS does not accept from insurers Chartis (AIG or Affiliated Company including Lexington Insurance Company), Hudson Group or ACE or Affiliated Company.
- b. The policy must be written using one of the following combinations of Insurance Services Office (“ISO”) Railroad Protective Liability Insurance Form Numbers:
- (1) CG 00 35 01 96 and CG 28 31 10 93; or
 - (2) CG 00 35 07 98 and CG 28 31 07 98; or
 - (3) CG 00 35 10 01; or
 - (4) CG 00 35 12 04; or
 - (5) CG 00 35 12 07; or
 - (6) CG 00 35 04 13.
- c. The named insured shall read:
- (As named in the Project Agreement with Project Sponsor)
 Three Commercial Place
 Norfolk, Virginia 23510-2191
 Attn: S. W. Dickerson Risk Management
- (NOTE: Railroad does not share coverage on RRPL with any other entity on this policy)**
- d. The description of operations must appear on the Declarations, must match the project description in this agreement, and must include the appropriate Sponsor project and contract identification numbers.
- e. The job location must appear on the Declarations and must include the city, state, and appropriate highway name/number. **NOTE: Do not include any references to milepost, valuation station, or mile marker on the insurance policy.**
- f. The name and address of the prime Contractor must appear on the Declarations.
- g. The name and address of the Sponsor must be identified on the Declarations as the “Involved Governmental Authority or Other Contracting Party.”
- h. Other endorsements/forms that will be accepted are:
- (1) Broad Form Nuclear Exclusion – Form IL 00 21
 - (2) 30-day Advance Notice of Non-renewal or cancellation
 - (3) Required State Cancellation Endorsement
 - (4) Quick Reference or Index Form CL/IL 240
- i. Endorsements/forms that are NOT acceptable are:

- (1) Any Pollution Exclusion Endorsement except CG 28 31
- (2) Any Punitive or Exemplary Damages Exclusion
- (3) Known injury or Damage Exclusion form CG 00 59
- (4) Any Common Policy Conditions form
- (5) Any other endorsement/form not specifically authorized in item no. 2.h above.

- B. If any part of the work is sublet, similar insurance, and evidence thereof as specified in A.1 above, shall be provided by or on behalf of the subcontractor to cover its operations on Railroad's right of way.
- C. All insurance required under the preceding subsection A shall be underwritten by insurers and be of such form and content, as may be acceptable to the Company. Prior to entry on Railroad right-of-way, the original Railroad Protective Liability Insurance Policy shall be submitted by the Prime Contractor to the Sponsor at the address below for its review and transmittal to the Railroad. In addition, certificates of insurance evidencing the Prime Contractor's and any subcontractors' Commercial General Liability Insurance shall be issued to the Railroad and the Sponsor at the addresses below, and forwarded to the Department for its review and transmittal to the Railroad. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without (30) days advance written notice to Railroad and the Sponsor. No work will be permitted by Railroad on its right-of-way until it has reviewed and approved the evidence of insurance required herein.

SPONSOR:RAILROAD:

Risk Management
 Norfolk Southern Railway Company
 Three Commercial Place
 Norfolk, Virginia 23510-2191

- D. The insurance required herein shall in no way serve to limit the liability of Sponsor or its Contractors under the terms of this agreement.
- E. Insurance Submission Procedures
1. Railroad will only accept initial insurance submissions via US Mail or Overnight carrier to the address noted in C above. Railroad will NOT accept initial insurance submissions via email or faxes. **Please provide point of contact information with the submission including a phone number and email address.**
 2. Railroad requires the following two (2) forms of insurance in the initial insurance submission to be submitted under a cover letter providing details of the project and contact information:
 - a. The full original or certified true countersigned copy of the railroad protective liability insurance policy in its entirety inclusive of all declarations, schedule of forms and endorsements along with the policy forms and endorsements.
 - b. The Contractor's commercial general, automobile, and workers' compensation liability insurance certificate of liability insurance



evidencing a combined single limit of a minimum of \$2M per occurrence of general and \$1M per occurrence of automobile liability insurance naming Norfolk Southern Railway Company, Three Commercial Place, Norfolk, VA 23510 as the certificate holder and as an additional insured on both the general and automobile liability insurance policy.

- 3. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30-45 days for the Railroad to review.

15. FAILURE TO COMPLY:

- A. In the event the Contractor violates or fails to comply with any of the requirements of these Special Provisions:
1. The Railroad Engineer may require that the Contractor vacate Railroad property.
2. The Sponsor’s Engineer may withhold all monies due the Contractor on monthly statements.
B. Any such orders shall remain in effect until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Sponsor’s Engineer.

16. PAYMENT FOR COST OF COMPLIANCE:

- A. No separate payment will be made for any extra cost incurred on account of compliance with these special provisions. All such costs shall be included in prices bid for other items of the work as specified in the payment items.

17. PROJECT INFORMATION

- A. Date: December 8, 2015
B. NS File No.: BR0029414
C. NS Milepost: CD-436.47
D. Sponsor’s Project No.:

EXHIBIT B

CONTRACTOR WORKING ON BEHALF OF PROJECT SPONSOR
COSTS REIMBURSED BY PROJECT SPONSOR
NS FILE: BR0029414

**NORFOLK SOUTHERN
CONTRACTOR RIGHT OF ENTRY AGREEMENT**

WHEREAS, _____ (“Principal”) has requested that Norfolk Southern Railway Company (“Company”) permit Principal to be on or about Company’s premises and/or facilities at or in the vicinity of Company Milepost CD-436.47, at or near South Bend, Saint Joseph County, Indiana (the “Premises”) for the sole purpose of installing signals for South Michigan Street to the substructure of the existing RAILWAY Bridge, on behalf of City of South Bend (the “Project Sponsor”) during the period _____, 20____, to _____, 20____ (the “Right of Entry”).

WHEREAS, Company is willing to grant the Right of Entry subject to the terms and conditions set forth herein.

NOW THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the parties hereby agree as follows.

Company hereby grants Principal the Right of Entry. The Right of Entry shall extend to Principal and to subcontractors and other entities affiliated with Principal who are specifically approved for entry by authorized representatives of Company in writing, as well as to the officers and employees of the foregoing (collectively “Licensees”). The Right of Entry shall apply to those portions of the Premises, and to such equipment, machinery, rolling stock and other personal property and fixtures belonging to Company or otherwise located on the Premises, only to the extent specifically designated and approved in writing by authorized representatives of Company (collectively, “Designated Property”).

Principal agrees:

- (i) that Licensees’ access to the Premises shall be limited to the Designated Property and that Principal shall be liable and fully responsible for all actions of Licensees while on the Premises pursuant to the Right of Entry;
- (ii) that Licensees shall (a) be subject to Company’s direction when upon the Premises, and (b) be subject to Company’s removal from the Premises, in Company’s sole discretion, due to negligence, misconduct, unsafe actions, breach of this agreement or the failure to act respectfully, responsibly, professionally, and/or in a manner consistent with Company’s desire to minimize risk and maintain its property with maximum security and minimum distractions or disruptions or for any other lawful reason;
- (iii) that Licensees shall perform all work with such care, diligence and cooperation with Company personnel as to reasonably avoid accidents, damage or harm to persons or property and delays or interference with the operations of any Company’s facilities and in accordance with Company’s “Special Provisions for Protection of Railway Interest”, attached and incorporated herein.
- (iv) to give Company’s officer signing this agreement, or his or her authorized representative, advance notification of the presence of Licensees on Designated Property in accordance with Company’s “Special Provisions for Protection of Railway Interest”;
- (v) to indemnify and save harmless Company, its officers, agents and employees from and against any and all claims, demands, losses, suits, judgments, costs, expenses (including without limitation reasonable attorney’s fees) and liability resulting from (a) injury to or death of any person, including without limitation the Licensees, and damage to or loss of any property, including without limitation that belonging to or in the custody of Licensees (the “Licensee Property”), arising or in any manner growing out of the presence of either the Licensees or the Licensee Property, or both, on or about the Premises, regardless of

EXHIBIT B

whether negligence on the part of Company, its officers, agents or employees caused or contributed to said loss of life, personal injury or property loss or damage in whole or in part; (b) any alleged violation of any law, statute, code, ordinance or regulation of the United States or of any state, county or municipal government (including, without limitation, those relating to air, water, noise, solid waste and other forms of environmental protection, contamination or pollution or to discrimination on any basis) that results in whole or in part, directly or indirectly, from the activities of Licensees related in any way to their presence on the Premises or from any other act or omission of Licensees contributing to such violation, regardless of whether such activities, acts or omissions are intentional or negligent, and regardless of any specification by Company without actual knowledge that it might violate any such law, statute, code, ordinance or regulation; (c) any allegation that Company is an employer or joint employer of a Licensee or is liable for related employment benefits or tax withholdings; or (d) any decision by Company to bar or exclude a Licensee from the Premises pursuant to subsection (ii)(b) above;

- (vi) to have and keep in effect the appropriate kinds of insurance as listed in the Company's "Special Provisions for Protection of Railway Interest, with insurance companies satisfactory to Company, during the entire time Licensees or Licensee Property, or both, is on the Premises: and to provide certificates of insurance showing the foregoing coverage, as well as any endorsements or other proper documentation showing and any change or cancellations in the coverage to the Company officer signing this agreement or to his or her authorized representative;
- (vii) to reimburse Company for any costs not covered under the existing project agreement between the Company and the Project Sponsor, including any material, labor, supervisory and protective costs (including flagging) and related taxes and overhead expenses required or deemed necessary by Company because of the presence of either Licensees or Licensee Property on the Premises;
- (viii) to exercise special care and precautions to protect the Premises and equipment, machinery, rolling stock and other personal property and fixtures belonging to Company or otherwise located on the Premises (whether or not constituting Designated Property) and to avoid interference with Company's operations;
- (ix) to not create and not allow drainage conditions which would be adverse to the Premises or any surrounding areas;
- (x) to refrain from the disposal or release of any trash, waste, and hazardous, dangerous or toxic waste, materials or substances on or adjacent to the Premises and to clean up or to pay Company for the cleanup of any such released trash, waste, materials or substances; and
- (xi) to restore the Premises and surrounding areas to its original condition or to a condition satisfactory to the Company officer signing this agreement or to his or her authorized representative (ordinary wear and tear to rolling stock and equipment excepted) upon termination of Licensees' presence on the Premises.

As a part of the consideration hereof, Principal further hereby agrees that Company shall mean not only Norfolk Southern Railway Company but also Norfolk Southern Corporation and any and all subsidiaries and affiliates of Norfolk Southern Railway Company or Norfolk Southern Corporation, and that all of Principal's indemnity commitments in this agreement in favor of Company also shall extend to and indemnify Norfolk Southern Corporation and any subsidiaries and affiliated companies of Norfolk Southern Railway Company or Norfolk Southern Corporation and its and/or their directors, officers, agents and employees.

EXHIBIT B

It is expressly understood that the indemnification obligations set forth herein cover claims by Principal's employees, agents, independent contractors and other representatives, and Principal expressly waives any defense to or immunity from such indemnification obligations and/or any subrogation rights available under any applicable state constitutional provision, laws, rules or regulations, including, without limitation, the workers' compensation laws of any state. Specifically, (i) in the event that all or a portion of the Premises is located in the State of Ohio, the following provision shall be applicable: "Principal, with respect to the indemnification provisions contained herein, hereby expressly waives any defense or immunity granted or afforded it pursuant to Section 35, Article II of the Ohio Constitution and Section 4123.74 of the Ohio Revised Code"; and (ii) in the event that all or a portion of the Premises is located in the Commonwealth of Pennsylvania, the following provision shall be applicable: "Principal, with respect to the indemnification provisions contained herein, hereby expressly waives any defense or immunity granted or afforded it pursuant to the Pennsylvania Workers' Compensation Act, 77 P.S. 481".

This agreement shall be governed by the internal laws of the State of Indiana, without regard to otherwise applicable principles of conflicts of laws. If any of the foregoing provisions is held for any reason to be unlawful or unenforceable, the parties intend that only the specific words found to be unlawful or unenforceable be severed and deleted from this agreement and that the balance of this agreement remain a binding enforceable agreement to the fullest extent permitted by law.

This agreement may be amended only in a writing signed by authorized representatives of the parties.

Name of Principal

NORFOLK SOUTHERN RAILWAY COMPANY

By _____

By _____

Title _____

Title _____

Date _____, 20____

Date _____, 20____

FORCE ACCOUNT ESTIMATE

Work to be Performed By: Norfolk Southern Railway Company
 For the Account of: City of South Bend
 Project Description: S. Michigan St. Roadway Signal Installation
 Location: St. Joseph County, IN - South Bend
 Project No.: 115-019
 Milepost: CD-436.47
 File: BR0029414
 Date: October 27, 2015

<u>SUMMARY</u>	
ITEM A - Preliminary Engineering	6,143
ITEM B - Construction Engineering	13,643
ITEM C - Accounting	2,073
ITEM D - Flagging Services	6,073
ITEM E - Communications Changes	0
ITEM F - Signal & Electrical Changes	0
ITEM G - Track Work	0
ITEM H - T-Cubed	0
GRAND TOTAL	\$ 27,932

ITEM A - Preliminary Engineering

(Review plans and special provisions,
prepare estimates, etc.)

Labor:	20 Hours @ \$60 / hour=	1,200
Labor Additives:		943
Travel Expenses:		500
Services by Contract Engineer:		3,500
NET TOTAL - ITEM A		\$ 6,143

EXHIBIT C

ITEM B - Construction Engineering

(Coordinate Railway construction activities,
review contractor submittals, etc.)

Labor:	20 Hours @ \$60 / hour=	1,200
Labor Additives:		943
Travel Expenses:		1,500
Services by Contract Engineer:		10,000
	NET TOTAL - ITEM B	<u>13,643</u>
		\$ 13,643

ITEM C - Administration

Agreement Construction, Review and/or Handling:		1,250
Accounting Hours (Labor):	15 Hours @ \$30 / hour=	450
Accounting Additives:		373
	NET TOTAL - ITEM C	<u>2,073</u>
		\$ 2,073

ITEM D - Flagging Services

(During construction on, over,
under, or adjacent to the track.)

Labor:	Flagging Foreman	
	5 days @ 390.00 per day=	1,950
	(based on working 12 hours/day)	
Labor Additive:		3,623
Travel Expenses, Meals & Lodging:		
	5 days @ \$100/day=	500
Rental Vehicle	0 months @ \$950/month=	0
	NET TOTAL - ITEM D	<u>6,073</u>
		\$ 6,073

ITEM E - Communications Changes

Material:		0
Labor:		0
Purchase Services:		0
Subsistence:		0
Additive:		0
	NET TOTAL - ITEM E	<u>-</u>
		\$ -

EXHIBIT C

ITEM F - Signal & Electrical Changes

Material:	0
Labor:	0
Purchase Services:	0
Other:	0
	<hr/>
NET TOTAL - ITEM F	\$ -

ITEM G - Track Work

Material:	(see attached summary)	0
Labor:	(see attached summary)	0
Additive:	(see attached summary)	0
Purchase Services:	(see attached summary)	0
		<hr/>
NET TOTAL - ITEM G		\$ -

ITEM H - T-CUBED

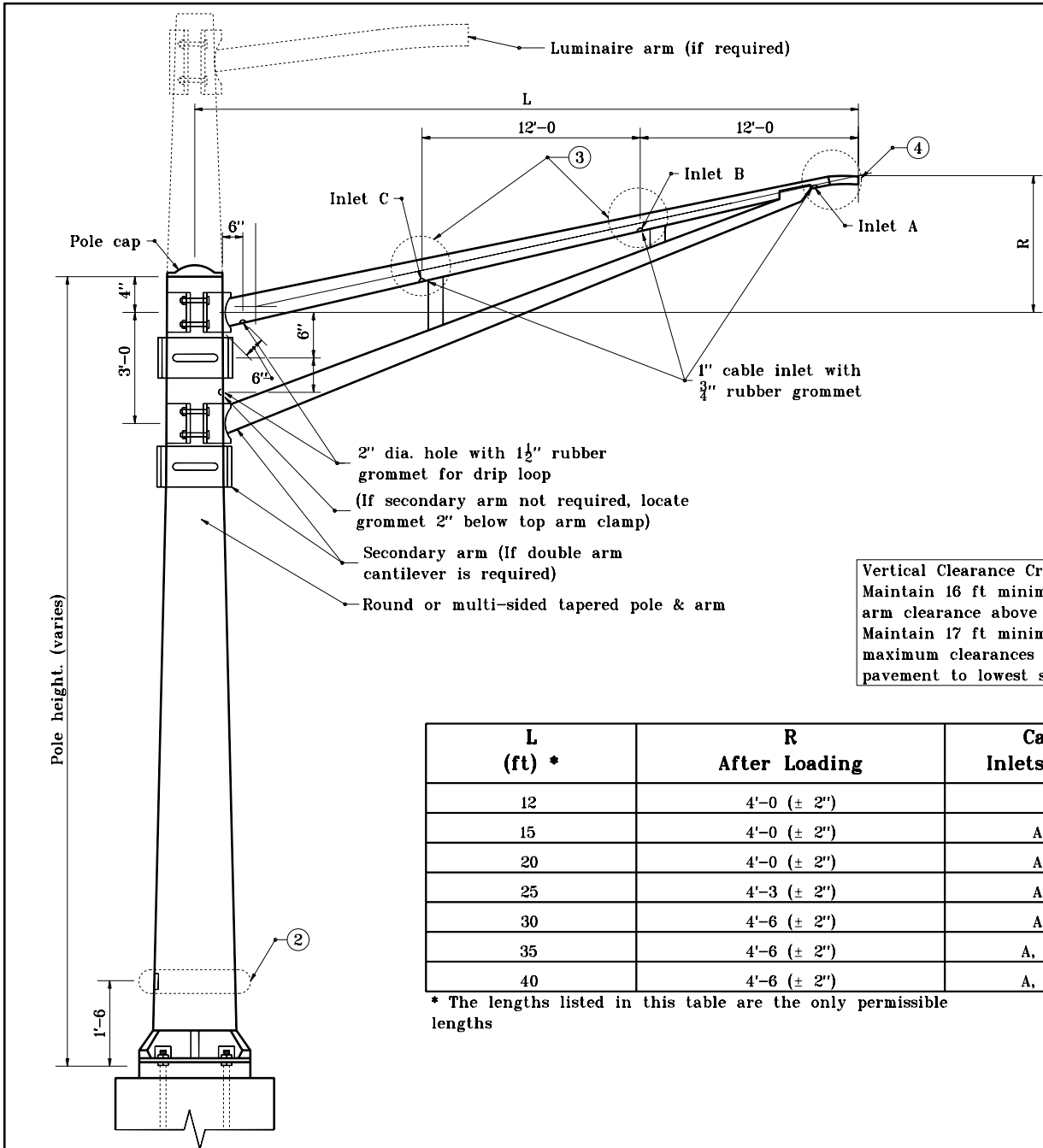
Lump Sum	\$ -
----------	------

NOTES

1. For all groups of CONTRACT employees, the composite labor surcharge rate used in this estimate (including insurance) is **185.81%**. Self Insurance - Public Liability Property Damage is estimated at 16.00%. Work will be billed at actual current audited rate in effect at the time the services are performed.
2. For all groups of NON-CONTRACT employees, the composite labor surcharge rate used in this estimate (including insurance) is **78.59%**. Self Insurance - Public Liability Property Damage is estimated at 16.00%. Work will be billed at actual current audited rate in effect at the time the services are performed.
3. All applicable salvage items due the Department will be made available to it at the jobsite for its disposal.
4. The Force Account Estimate is valid for one (1) year after the date of the estimate (10/27/2015). If the work is not performed within this time frame the Railway may revise the estimate to (1) include work not previously indicated as necessary and (2) reflect changes in cost to perform the force account work.

Appendix B Loop Tagging Table

Appendix C Truss Type Mast Arms



GENERAL NOTES

1. The upper 4 ft to 6 ft of the pole may be non-tapered.
- ② See Standard Drawing E 805-SGMA-04 for Detail B.
- ③ See Standard Drawing E 805-SGMA-04 for Detail C.
- ④ See Standard Drawing E 805-SGMA-04 for Detail D.

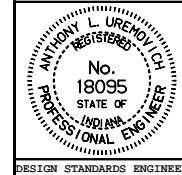
Vertical Clearance Criteria:
 Maintain 16 ft minimum mast arm clearance above pavement.
 Maintain 17 ft minimum and 19 ft maximum clearances from top of pavement to lowest signal head.

L (ft) *	R After Loading	Cable Inlets Req'd.
12	4'-0 (± 2")	A
15	4'-0 (± 2")	A, B
20	4'-0 (± 2")	A, B
25	4'-3 (± 2")	A, B
30	4'-6 (± 2")	A, B
35	4'-6 (± 2")	A, B, C
40	4'-6 (± 2")	A, B, C

* The lengths listed in this table are the only permissible lengths

INDIANA DEPARTMENT OF TRANSPORTATION
SIGNAL CANTILEVER ARM
TRUSS TYPE ARM
 MAY 1998

STANDARD DRAWING NO. **E 805-SGMA-02**

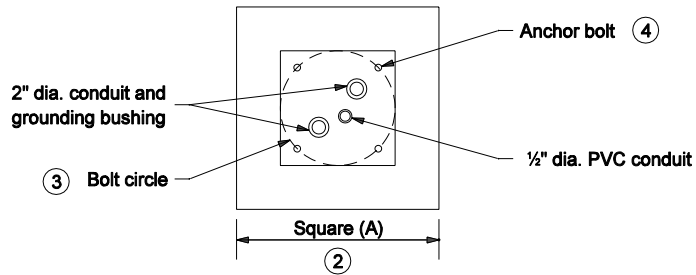


DETAILS PLACED IN THIS FORMAT 11-15-99

/s/ Anthony L. Uremovich 11-15-99
 DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 11-15-99
 CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER ORIGINALLY APPROVED 5-01-98

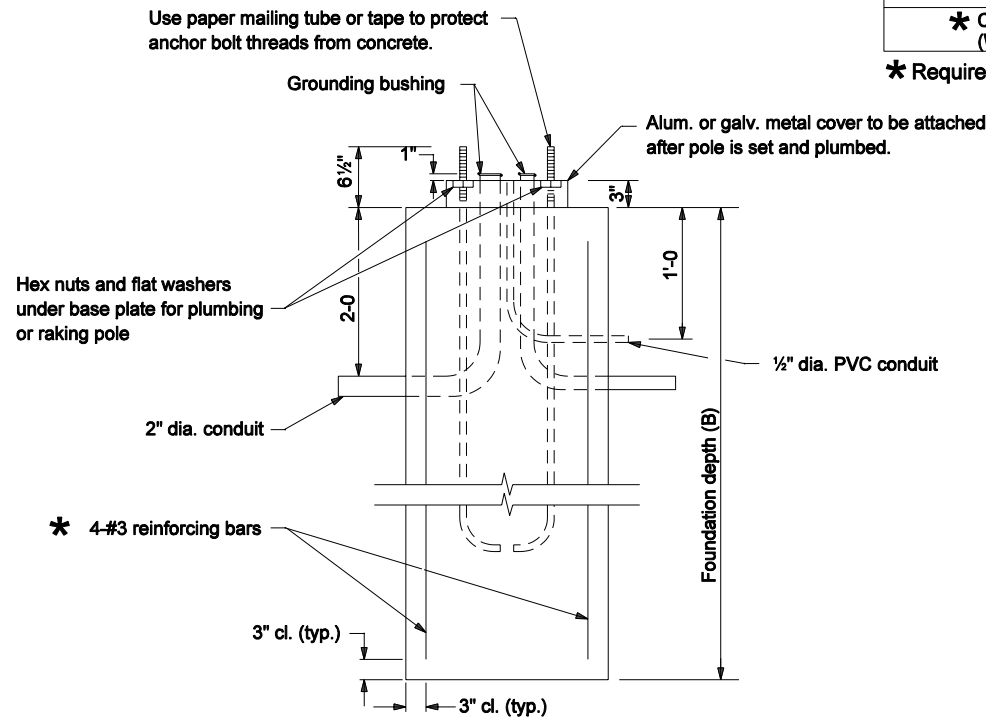


GENERAL NOTES

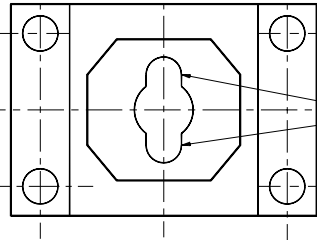
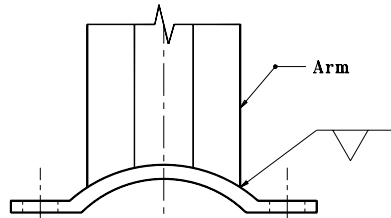
1. Top 6" of foundation may be squared.
- ② A round foundation may be supplied in lieu of square using the following equivalent (A) dimensions:
2'-6 Square = 3'-0 Round
3'-0 Square = 3'-6 Round
- ③ See Base Plate Detail on Standard Drawing E 805-SGMA-05.
- ④ See Standard Drawing E 805-SGMA-05 for Detail D.

SIGNAL CANTILEVER FOUNDATION DIMENSIONS		
ARM LENGTH (L), ft	SQUARE (A)	FDN. DEPTH (B)
12, 15, 20, 25	2'-6	7 ft
* 30, 35, 40	3'-0	8 ft
All Twin Arms		
* Combination Pole (With Luminaire)	3'-0	8 ft

* Requires 4-#3 x 7'-9 as shown on foundation detail.



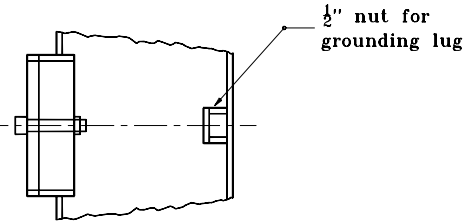
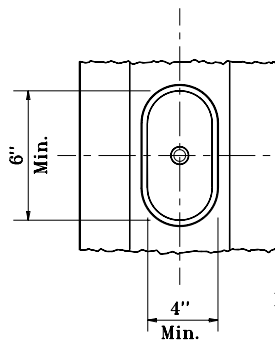
INDIANA DEPARTMENT OF TRANSPORTATION	
SIGNAL CANTILEVER FOUNDATION DETAIL	
SEPTEMBER 2006	
STANDARD DRAWING NO. E 805-SGMA-03	
	/s/ Richard L. VanCleave 9-01-06 DESIGN STANDARDS ENGINEER DATE
	/s/ Richard K. Smutzer 9-01-06 CHIEF HIGHWAY ENGINEER DATE
DESIGN STANDARDS ENGINEER	



NOTE: Slot inside face of arm for galvanized drainage (steel structures only)

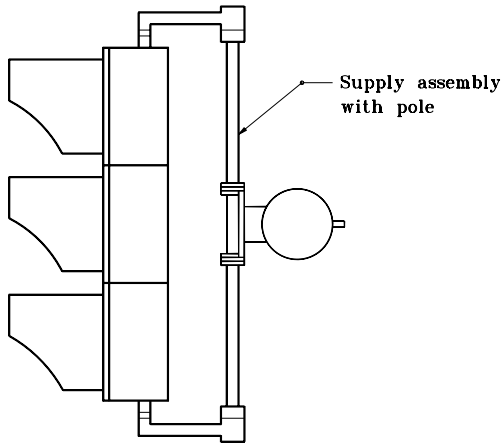
(Connection clamp)

DETAIL A



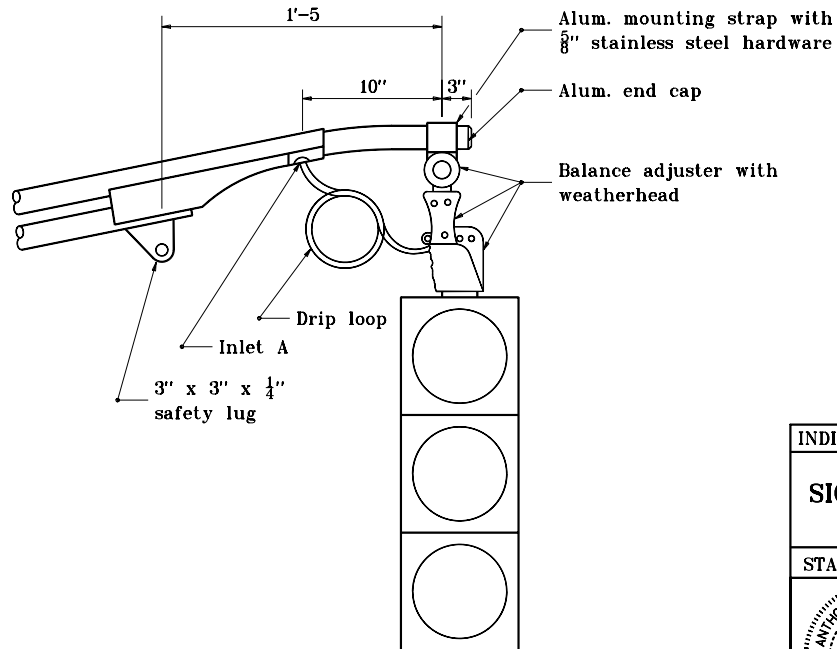
NOTE: For combination signal luminaire pole, handhole shall be 8" min. x 6" min. Inside dimensions
(Handhole and grounding lug)

DETAIL B



(Signal Head Mounting Assembly - Typ.)

DETAIL C



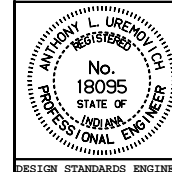
DETAIL D

INDIANA DEPARTMENT OF TRANSPORTATION

SIGNAL CANTILEVER DETAILS

MAY 1998

STANDARD DRAWING NO. **E 805-SGMA-04**



DETAILS PLACED IN THIS FORMAT 11-15-99

/s/ Anthony L. Uremovich 11-15-99
DESIGN STANDARDS ENGINEER DATE

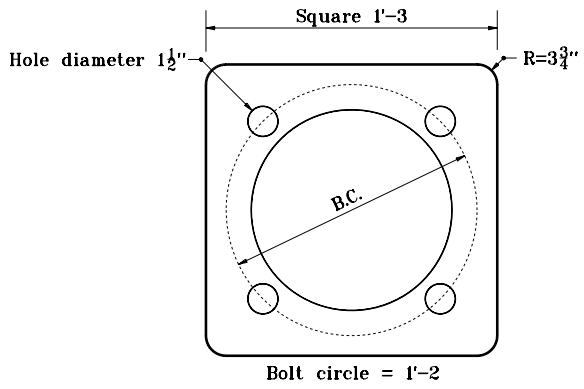
/s/ Firooz Zandi 11-15-99
CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER

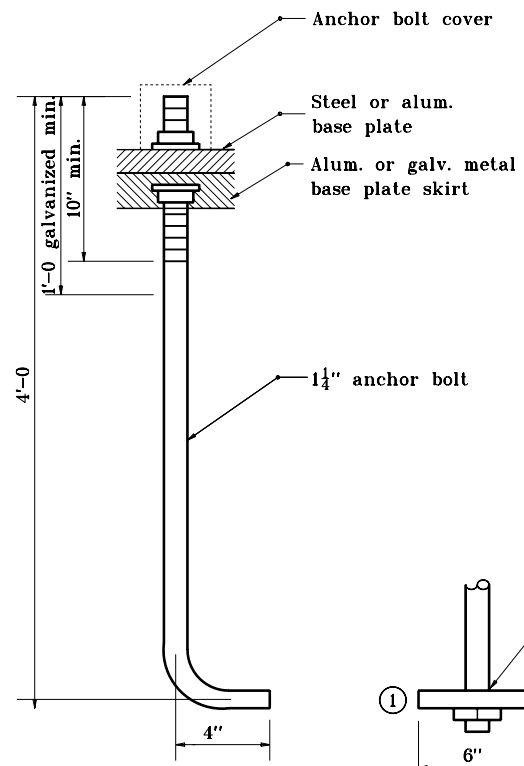
ORIGINALLY APPROVED 5-01-98

GENERAL NOTES

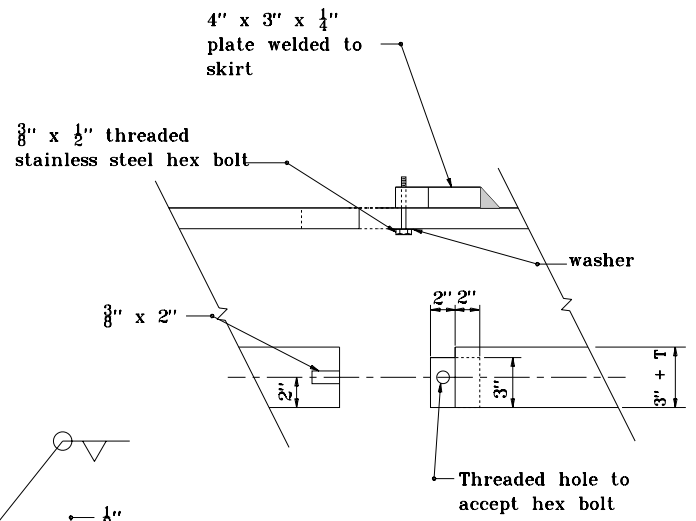
① Alternate 6" x 6" x 1/2" sq. washer with hex nut welded to lower end.



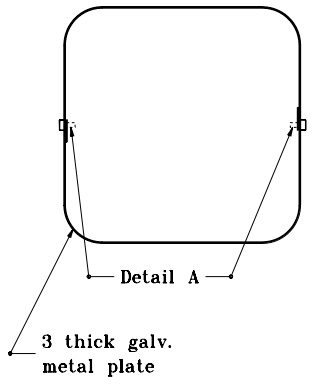
STEEL BASE PLATE DETAIL



DETAIL D



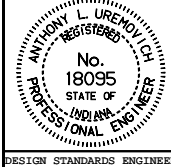
DETAIL A



METAL COVER DETAIL

INDIANA DEPARTMENT OF TRANSPORTATION
SIGNAL CANTILEVER ANCHOR BOLTS, PLATES, AND COVERS
 SEPTEMBER 1998

STANDARD DRAWING NO. **E 805-SGMA-05**



DETAILS PLACED IN THIS FORMAT 11-15-99

/s/ Anthony L. Uremovich 11-15-99
 DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 11-15-99
 CHIEF HIGHWAY ENGINEER DATE

DESIGN STANDARDS ENGINEER ORIGINALLY APPROVED 9-01-98

GENERAL NOTES

1. A minimum of three 2" conduit inlets shall be installed per foundation.
2. Conduit inlet not used shall be capped below grade. More inlets shall be installed as required on plans.
3. Foundation types P-1 and M shall conform to all minor differences of individual designs for all accepted cabinets.
4. The ground rod for the M, P-1, and A foundations may be installed inside the foundations as shown if there is a minimum length of 8 ft protruding from the bottom of the foundation. If the ground rod is installed outside the foundation it shall be 8 ft long. The ground wire shall be brought through the foundation via 3/8" conduit elbow or straight section installed at an angle.
5. A round foundation may be supplied in lieu of the square type A or signal mast arm foundations.
Use the following equivalents:
 - 2'-0 square = 2'-6 round
 - 2'-6 square = 3'-0 round
 - 3'-0 square = 3'-6 round

**MAST ARM POLE AND STEEL STRAIN
POLE FOUNDATION DATA**

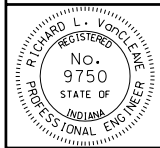
SIGNAL MAST ARM					
LENGTH OF MAST ARM	A	B	C	D	E
12', 15', 20', 25'	2'-6"	7'-0"	6'-1/4"	1'-3"	1'- 1/4" x 4'-0"
30', 35', 40' ALL TWIN M.A.	3'-0"	8'-0"	6'-1/4"	1'-3"	1'- 1/4" x 4'-0"
SIGNAL MAST ARM					
Length of Mast Arm					
18' or 22'	3'-0"	8'-0"	6'-1/4"	1'-1/2"	1'- 1/2" x 5'-0"
STEEL STRAIN POLE					
Size					
12" x 24"	3'-0"	8'-0"	5'-3/4"	1'-4"	1'- 3/4" x 7'-6"
15" x 30"	3'-0"	12'-0"	7'-3/4"	1'-10"	2'- 1/4" x 7'-6"
COMBINATION POLE (With Luminaire)					
	3'-0"	8'-0"	6'-1/4"	1'-3"	1'- 1/4" x 4'-0"

1

2

1

- 1 Four #3 reinforcing bars of 7'-6 length required approximately 4 in. from outside surface of concrete.
- 2 Dimension A denotes the diameter of the foundation. The steel strain pole shall be 3'-0 round.

INDIANA DEPARTMENT OF TRANSPORTATION	
FOUNDATION DATA AND GENERAL NOTES	
MARCH 2005	
STANDARD DRAWING NO. E 805-SGMA-07	
	/s/ Richard L. VanCleave 3-01-05 DESIGN STANDARDS ENGINEER DATE
DESIGN STANDARDS ENGINEER	/s/ Richard K. Smutzer 3-01-05 CHIEF HIGHWAY ENGINEER DATE

Appendix D Permits

**RULE 5 - NOTICE OF INTENT (NOI)**

State Form 47487 (R6 / 2-15)
 Indiana Department of Environmental Management
 Office of Water Quality
 Approved by State Board of Accounts, 2005

Type of Submittal (Check Appropriate Box):
 Initial Amendment Renewal

Permit Number:

(Note: The initial submittal does not require a permit number; the Department will assign a number. A permit number is required when filing an amendment, applying for renewal, or correspondence related to this permit).

Note: Submission of this Notice of Intent letter constitutes notice that the project site owner is applying for coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit Rule for Storm Water Discharges Associated with Construction Activity. Permitted project site owners are required to comply with all terms and conditions of the General Permit Rule 327 IAC 15-5 (Rule 5).

NAME AND LOCATION OF PROJECT

Name of Project: Roundabout Intersection at Michigan Street and Chippewa Avenue	County: St. Joseph
---	------------------------------

Brief Description of Project Location:
Michigan Street and Main Street from 500 ft. south to 400 ft. north of Chippewa Avenue, and Chippewa Avenue from 500 ft. west of Main Street to 500 ft. east of Michigan Street

Project Location: Describe location in Latitude and Longitude (Degrees, Minutes, and Seconds or Decimal representation) and by legal description (Section, Township, and Range, Civil Township)

Latitude: N 41d38'10"	Longitude: W 86d15'00"
---------------------------------	----------------------------------

Quarter: **SW/NW** Section: **24/25** Township: **37N** Range: **2E** Civil Township: **Portage**

Does all or part of this project lie within the jurisdictional boundaries of a Municipal Separate Storm Sewer System (MS4) as defined in 327 IAC 15-13?
 Yes No If yes, name the MS4(s):

City of South Bend

SITE OWNER OF PROJECT AND CONTACT INFORMATION OF PROJECT

Name of Company (If Applicable):
City of South Bend, Department of Public Works, Division of Engineering

Name of Project Site Owner: (An Individual) Corbitt Kerr	Title/Position: City Engineer
--	---

Address:
227 W. Jefferson Blvd. Room 1316

City: South Bend	State: Indiana	ZIP Code: 46601
----------------------------	--------------------------	---------------------------

Phone: (574) 235-9351	FAX: (574) 235-9171	E-Mail Address: (If Available) pckerr@southbendin.gov
---------------------------------	-------------------------------	---

Ownership Status (check one):
 Governmental Agency: Federal State Local Non-Governmental: Public Private Other: (Explain)

Contact Person: Vance G. Epple, P.E.	Name of Company: (If Applicable) Beam, Longest and Neff, L.L.C.
--	---

Affiliation to Project Site Owner:
Design Consultant

Address: (if different from above)
8126 Castleton Road

City: Indianapolis	State: Indiana	ZIP Code: 46250
------------------------------	--------------------------	---------------------------

Phone: (317) 849-5832	FAX: (317) 841-4280	E-Mail Address: (If Available) vepple@b-l-n.com
---------------------------------	-------------------------------	---

PROJECT INFORMATION

Project Description:
 Residential-Single Family Residential-Multi-Family Commercial Industrial Other: (Explain) **Public Infrastructure**

Name of Receiving Water:
City of South Bend, Department of Public Works, Bureau of Sewers; Saint Joseph River
 (Note: If applicable, name of municipal operator of storm sewer and the ultimate receiving water. If a retention pond is present on the property, the name of the nearest possible receiving water receiving discharge must be provided).

Project Acreage
 Total Acreage: **5.14** Proposed Land Disturbance: (in acres) **4.18**
 Total Impervious Surface Area: (in square feet, estimated for completed project) **155,043**

Project Duration
 Estimated Start Date: **March 1, 2016** Estimated End Date for all Land Disturbing Activity: **May 31, 2017**

(Continued on Reverse Side)

CONSTRUCTION PLAN CERTIFICATION

By signing this Notice of Intent letter, I certify the following:

- A. The storm water quality measures included in the Construction Plan comply with the requirements of 327 IAC 15-5-6.5, 327 IAC 15-5-7, and 327 IAC 15-5-7.5;
- B. the storm water pollution prevention plan complies with all applicable federal, state, and local storm water requirements;
- C. the measures required under 327 IAC 15-5-7 and 327 IAC 15-5-7.5 will be implemented in accordance with the storm water pollution prevention plan;
- D. if the projected land disturbance is One (1) acre or more, the applicable Soil and Water Conservation District or other entity designated by the Department, has been sent a copy of the Construction Plan for review;
- E. storm water quality measures beyond those specified in the storm water pollution prevention plan will be implemented during the life of the permit if necessary to comply with 327 IAC 15-5-7; and
- F. implementation of storm water quality measures will be inspected by trained individuals.

In addition to this form, I have enclosed the following required information:

- Verification by the reviewing agency of acceptance of the Construction Plan.
- Proof of publication in a newspaper of general circulation in the affected area that notified the public that a construction activity is to commence, including all required elements contained in 327 IAC 15-5-5 (9). The Proof of Publication **Must** include company name and address, project name, address/location of the project, and the receiving stream to which storm water will be discharged. Following is a sample Proof of Publication:

"XERT Development Inc. (10 Willow Lane, Indianapolis, Indiana 46206) is submitting a Notice of Intent to the Indiana Department of Environmental Management of our intent to comply with the requirements of 327 IAC 15-5 to discharge storm water from construction activities associated with Water Garden Estates located at 24 Washout Lane, Indianapolis, Indiana 46206. Runoff from the project site will discharge to the White River. Questions or comments regarding this project should be directed to Walter Water of XERT Development Inc."

- \$100 check or money order payable to the Indiana Department of Environmental Management. A permit fee is required for all NOI submittals (initial and renewal). A fee is not required for amendments.

SITE OWNER OF PROJECT RESPONSIBILITY STATEMENT

By signing this Notice of Intent letter, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information or violating the provisions of 327 IAC 15-5, including the possibility of fine and imprisonment for knowing violations.

Printed Name of Project Owner: _____

Signature of Project Owner: _____ Date (month, day, year): _____

This Notice of Intent must be signed by an individual meeting the signatory requirements in 327 IAC 15-4-3(g).

All NOI submittals must include an original signature (FAX and photo copies are not acceptable).

Note: Within 48 hours of the initiation of construction activity, the project site owner must notify the appropriate plan review agency and IDEM, Office of Water Quality of the actual project start date if it varies from the date provided above.

Note: A permit issued under 327 IAC 15-5 is granted by the commissioner for a period of five (5) years from the date coverage commences. Once the five (5) year permit term duration is reached, a general permit issued under this rule will be considered expired, and as necessary for construction activity continuation, a new Notice of Intent letter (Renewal) is required to be submitted ninety (90) days prior to the termination of coverage. The submittal must include the NOI Letter, Proof of Publication, Fee, and verification that the plan for the project was approved (original verification of plan approval is acceptable provided the scope of the project has not changed from the original submittal).

**Mail this form to: Indiana Department of Environmental Management
Storm Water Program, IGCN, Room 1255
100 North Senate Avenue
Indianapolis, IN 46204-2251**

327 IAC 15-5-6 (a) also requires a copy of the completed Notice of Intent letter be submitted to the local Soil and Water Conservation District or other entity designated by the Department, where the land disturbing activity is to occur.

Questions regarding the development or implementation of the Construction Plan/Storm Water Pollution Prevention Plan should be directed to the local county Soil and Water Conservation District (SWCD). If you are unable to reach the SWCD or have other questions please direct those inquiries to the IDEM Storm Water Permit Coordinator at 317/233-1864 or 800/451-6027 ext.3-1864.
For information and forms visit <http://www.in.gov/idem/4896.htm>.

Construction/Stormwater Pollution Prevention Plan Technical Review and Comment (Form 1)

Project Information	Project Name: Roundabout Intersection at Michigan St and Chippewa Ave County: St. Joseph
	Plan Submittal Date: 10/26/15 Hydrologic Unit Code: O4050001240030
	Project Location Description: Chippewa Ave from 500' W of Main to 500' E of Michigan
	Latitude and Longitude: 41 deg 38' 10" North, 86 deg 15' 00" West
	Civil Township: Portage Quarter: SW/NW Section: 24/25 Township: 37N Range: 2E
	Project Owner Name: City of South Bend, Dept of PublicWorks, Division of Engineering
	Contact: Corbitt Kerr
	Address: 227 West Jefferson Blvd., Room 1316
	City: South Bend State: IN Zip: 46601
	Phone: 574-235-9351 FAX: 574-235-9171 E-Mail: pckerr@southbendin.gov
Plan Preparer Name: Vance G. Epple, P.E.	
Affiliation: Beam, Longestand Neff, LLC	
Address: 8126 Castleton Road	
City: Indianapolis State: IN Zip: 46250	
Phone: 317-849-5832 FAX: 317-841-4280 E-Mail: vepple@b-l-n.com	

Plan Review	Review Date: 11/25/15
	Principal Plan Reviewer: Sarah Longenecker
	Agency: St. Joseph County Soil & Water Conservation District
	Address: 2903 Gary Dr.
	City: Plymouth State: IN Zip: 46563
	Phone: 574-936-2024 x 4 FAX: E-Mail: sarah.harville@in.nacdnet.net
Assisted By: n/a	

<input checked="" type="checkbox"/>	PLAN IS ADEQUATE: A comprehensive plan review has been completed and it has been determined that the plan satisfies the minimum requirements and intent of 327 IAC 15-5.
<input checked="" type="checkbox"/>	Please refer to additional information included on the following page(s).
<input checked="" type="checkbox"/>	Submit Notice of Intent (NOI): Attach a copy of this cover page when submitting the NOI to the Indiana Department of Environmental Management. Construction activities may begin 48 hours following the submittal of the NOI. A copy of the NOI must also be sent to the Reviewing Authority (e.g. SWCD, DNR).
<input type="checkbox"/>	A preliminary plan review has been completed; a comprehensive review will not be completed within the 28-day review period. The reviewing authority reserves the right to perform a comprehensive review at a later date and revisions to the plan may be required at that time to address deficiencies.
<input type="checkbox"/>	Please refer to additional information included on the following page(s).
<input type="checkbox"/>	Submit Notice of Intent (NOI): Attach a copy of this cover page when submitting the NOI to the Indiana Department of Environmental Management. Construction activities may begin 48 hours following the submittal of the NOI. A copy of the NOI must also be sent to the Reviewing Authority (e.g. SWCD, DNR).
<input type="checkbox"/>	PLAN IS DEFICIENT: Significant deficiencies were identified during the plan review.
<input type="checkbox"/>	Please refer to additional information included on the following page(s).
<input type="checkbox"/>	DO NOT file a Notice of Intent for this project.
<input type="checkbox"/>	DO NOT commence land disturbing activities until all deficiencies are adequately addressed, the plan re-submitted, and notification has been received that the minimum requirements have been satisfied.
<input type="checkbox"/>	Plan Revisions <input type="checkbox"/> Deficient Items should be mailed or delivered to the Principal Plan Reviewer identified in the Plan Review Section above.

Construction/Storm water Pollution Prevention Plan - Technical Review and Comment (Form 1)

Project Name: Roundabout Intersection at Michigan St and Chippewa Ave
Date Reviewed: 11/25/15

The technical review and comments are intended to evaluate the completeness of the Construction/Storm Water Pollution Prevention Plan for the project. The Plan submitted was not reviewed for the adequacy of the engineering design. All measures included in the plan, as well as those recommended in the comments should be evaluated as to their feasibility by a qualified individual with structural measures designed by a qualified engineer. The Plan has not been reviewed for other local, state, or federal permits that may be required to proceed with this project. Additional information, including design calculations may be requested to further evaluate the Plan.

All proposed storm water pollution prevention measures and those referenced in this review must meet the design criteria and standards set forth in the "Indiana Storm Water Quality Manual" from the Indiana Department of Environmental Management or similar Guidance Documents.

Please direct questions and/or comments regarding this plan review to:
 Sarah Longenecker
Please refer to the address and contact information identified in the Plan Review Section on page 1.

Assessment of Construction Plan Elements (Section A)

The Construction Plan Elements are adequately represented to complete a plan review:
 Yes **No**

The items checked below are deficient and require submittal to meet the requirements of the rule.

A		A	
<input type="checkbox"/>	1 Index showing locations of required Plan Elements	<input type="checkbox"/>	2 11 by 17 inch plat showing building lot numbers/boundaries and road layout/names
<input type="checkbox"/>	3 Narrative describing the nature and purpose of the project	<input type="checkbox"/>	4 Vicinity map showing project location
<input type="checkbox"/>	5 Legal Description of the Project Site (Include Latitude and Longitude - NOI Requirement)	<input type="checkbox"/>	6 Location of all lots and proposed site improvements (roads, utilities, structures, etc.)
<input type="checkbox"/>	7 Hydrologic unit code (14 Digit)	<input type="checkbox"/>	8 Notation of any State or Federal water quality permits
<input type="checkbox"/>	9 Specific points where storm water discharge will leave the site	<input type="checkbox"/>	10 Location and name of all wetlands, lakes and water courses on and adjacent to the site
<input type="checkbox"/>	11 Identification of all receiving waters	<input type="checkbox"/>	12 Identification of potential discharges to ground water (abandoned wells, sinkholes, etc.)
<input type="checkbox"/>	13 100 year floodplains, floodways, and floodway fringes	<input type="checkbox"/>	14 Pre-construction and post construction estimate of Peak Discharge (10 Year storm event)
<input type="checkbox"/>	15 Adjacent landuse, including upstream watershed	<input type="checkbox"/>	16 Locations and approximate boundaries of all disturbed areas (Construction Limits)
<input type="checkbox"/>	17 Identification of existing vegetative cover	<input type="checkbox"/>	18 Soils map including soil descriptions and limitations
<input type="checkbox"/>	19 Locations, size and dimensions of proposed storm water systems (e.g. pipes, swales and channels)	<input type="checkbox"/>	20 Plans for any off-site construction activities associated with this project (sewer/water tie-ins)
<input type="checkbox"/>	21 Locations of proposed soil stockpiles and/or borrow/disposal areas	<input type="checkbox"/>	22 Existing site topography at an interval appropriate to indicate drainage patterns
<input type="checkbox"/>	23 Proposed final topography at an interval appropriate to indicate drainage patterns		

Construction/Stormwater Pollution Prevention Plan - Technical Review and Comment (Form 1)

Project Name: Roundabout Intersection at Michigan St and Chippewa Ave
Date Reviewed: 11/25/15

Assessment of Stormwater Pollution Prevention Plan (Sections B & C)

Stormwater Pollution Prevention Plan - Construction Component (Section B)

Adequate	Deficient	Not Applicable	B	
				<i>The construction component of the Stormwater Pollution Prevention Plan includes stormwater quality measures to address erosion, sedimentation, and other pollutants associated with land disturbance and construction activities. Proper implementation of the plan and inspections of the construction site are necessary to minimize the discharge of pollutants. The Project Site Owner should be aware that unforeseen construction activities and weather conditions may affect the performance of a practice or the effectiveness of the plan. The plan must be a flexible document, with provisions to modify or substitute practices as necessary.</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		1 Description of potential pollutant sources associated with construction activities
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2 Sequence describing stormwater quality measure implementation relative to land disturbing activities
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3 Stable construction entrance locations and specifications (at all points of ingress and egress)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		4 Sediment control measures for sheet flow areas
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 Sediment control measures for concentrated flow areas
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		6 Storm sewer inlet protection measure locations and specifications
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		7 Runoff control measures (e.g. diversions, rock check dams, slope drains, etc.)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		8 Storm water outlet protection specifications
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		9 Grade stabilization structure locations and specifications
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		10 Location, dimensions, specifications, and construction details of each stormwater quality measure
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		11 Temporary surface stabilization methods appropriate for each season (include sequencing)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		12 Permanent surface stabilization specifications (include sequencing)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		13 Material handling and spill prevention plan
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		14 Monitoring and maintenance guidelines for each proposed stormwater quality measure
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		15 Erosion & sediment control specifications for individual building lots

Stormwater Pollution Prevention Plan - Post Construction Component (Section C)

Adequate	Deficient	Not Applicable	C	
				<i>The post construction component of the Stormwater Pollution Prevention Plan includes the implementation of stormwater quality measures to address pollutants that will be associated with the final landuse. Post construction stormwater quality measures should be functional upon completion of the project. Long term functionality of the measures are critical to their performance and should be monitored and maintained.</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		1 Description of pollutants and their sources associated with the proposed land use
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2 Sequence describing stormwater quality measure implementation
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3 Description of proposed post construction stormwater quality measures (Include a written description of how these measures will reduce discharge of expected pollutants)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		4 Location, dimensions, specifications, and construction details of each stormwater quality measure
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 Description of maintenance guidelines for post construction stormwater quality measures

Construction/Stormwater Pollution Prevention Plan - Technical Review and Comment

Project Name: Roundabout Intersection at Michigan St and Chippewa Ave

Date Reviewed: 11/25/15

You may send the Notice of Intent (NOI), proof of publication, and \$100 IDEM fee to the following address: IDEM, Storm Water Program, IGCN, Room 1255, 100 N. Senate Avenue, MC 50-10C, Indianapolis, IN 46204-2251. Within 48 hours of the start of construction, please notify Sarah Longenecker of the St. Joseph County SWCD ((574)936-2024, Ext. 4) of the actual project start date.

CONSTRUCTION / STORMWATER POLLUTION PREVENTION PLAN

INDEX OF TECHNICAL REVIEW ITEMS

SECTION A: ASSESSMENT OF CONSTRUCTION PLAN ELEMENTS

- A1. **Index showing locations of required Plan Elements:** *Shown herein.*
- A2. **Plat showing building lot numbers/boundaries and road layout/names:** *See Plat 1 (Appendix A). Lot numbers, property boundaries and existing road are shown within the project vicinity.*
- A3. **Narrative describing the nature and purpose of the project:** *The proposed project is the reconstruction of Chippewa Avenue from 500 ft. west of Main Street to 500 ft. east of Michigan Street. The intersection of Chippewa Avenue and Michigan Street will be reconstructed into a single lane roundabout while the Chippewa Avenue and Main Street intersection will remain a signalized intersection with the addition of a dedicated right turn lane from westbound Chippewa Avenue to northbound Main Street. This project is a part of the conversion of Michigan Street and Main Street from one-way to two-way operation.*
- A4. **Vicinity map showing project location:** *See Topographic Exhibit (pg.51) and Title Sheet (Appendix A).*
- A5. **Legal Description of the Project Site (Include Latitude and Longitude – NOI Requirement):** *Roadway reconstruction from approximately 500 ft. west of Main Street to 500 ft. east of Michigan Street. The project is located in Sections 24 and 25, T 37N, R 2E in Portage Township, St. Joseph County, Indiana. The latitude is 41°38'10"N and the longitude is 86°15'00"W.*
- A6. **Location of all lots and proposed site improvements (roads, utilities, structures, etc.):** *See Plan & Profile Sheets (Appendix A).*
- A7. **Hydrologic unit code (14 Digit):** *04050001240030*
- A8. **Notation of any State or Federal water quality permits:** *No other State or Federal water quality permits are required for this project.*
- A9. **Specific points where stormwater discharge will leave the site:** *Stormwater within the project limits will be collected by inlets and catch basins that drain into an existing enclosed storm sewer system owned by the City of South Bend, Department of Public Works, Bureau of Sewers and will ultimately discharge into the Saint Joseph River.*
- A10. **Location and name of all wetlands, lakes and water resources on and adjacent to the site:** *There are no wetlands or lakes on or adjacent to the site (See Wetlands Map pg. 144).*
- A11. **Identification of all receiving waters:** *Water will leave the site via an enclosed storm sewer system and will ultimately discharge into the Saint Joseph River.*
- A12. **Identification of potential discharges to ground water (abandoned wells, sinkholes, etc.):** *Drywells are utilized in various locations throughout the limits of the project on private property. Two new drywells will be constructed as a part of this project as well as a third drywell to replace an existing drywell that will be impacted by the reconstruction of this roadway. The drywells will be located outside of the permanent right-of-way and will collect stormwater from existing parking lots and associated features.*
- A13. **100 year floodplains, floodways, and floodway fringes:** *The project limits are not within a floodplain or floodway. See attached Flood Insurance Rate Map (pg. 145-146).*

CONSTRUCTION / STORMWATER POLLUTION PREVENTION PLAN

INDEX OF TECHNICAL REVIEW ITEMS

- A14. **Pre-construction and post construction estimate of Peak Discharge (10 year storm event):** *The pre-construction estimate of peak discharge for the entire site is 22.5 cfs, and the post-construction estimate of peak discharge for the entire site is 20.8 cfs. The decrease in runoff is a result of a decrease in the amount of pavement within the project limits. See Peak Discharge Data (pg. 43-50).*
- A15. **Adjacent land use, including upstream watershed:** *The adjacent land use is residential and commercial. See Plan Sheets (Appendix A).*
- A16. **Locations and approximate boundaries of all disturbed areas (Construction Limits):** *See Plan Sheets for Construction Limits (Appendix A).*
- A17. **Identification of existing vegetative cover:** *See Plan Sheets for existing vegetation descriptions (Appendix A).*
- A18. **Soils map including soil descriptions and limitations:** *See attached Soils Report and Geotechnical Report.*
- A19. **Locations, size and dimensions of proposed stormwater systems (e.g. pipes, swales and channels):** *The proposed construction consists of a combination of widening, resurfacing and full-depth reconstruction of Chippewa Avenue and installing new curb and gutter as well as an enclosed storm sewer system. The proposed storm sewer system is composed of curb inlets to collect water along the roadway. Where ditches are necessary, they have been designed to convey the stormwater into catch basins which connect to the enclosed storm sewer system. See Structure Data Table for sizes and locations (Appendix A).*
- A20. **Plans for any off-site construction activities associated with this project (sewer/water tie-ins):** *There are no plans for any off-site construction activities.*
- A21. **Locations of proposed soil stockpiles and/or borrow/disposal areas:** *The contractor will determine stockpile/borrow/disposal areas and is responsible for providing proper documentation.*
- A22. **Existing site topography at an interval appropriate to indicate drainage patterns:** *See Plan Sheets (Appendix A) and Cross Sections (Appendix B).*
- A23. **Proposed final topography at an interval appropriate to indicate drainage patterns:** *See Plan Sheets (Appendix A) and Cross Sections (Appendix B).*

SECTION B: ASSESSMENT OF STORMWATER POLLUTION PREVENTION PLAN – CONSTRUCTION COMPONENT

- B1. **Description of potential pollutant sources associated with construction activities:** *Potential pollutants from construction activities include sediment from exposed soil, concrete and asphalt debris from paving operations, as well as diesel fuel, hydraulic fluid and other equipment-related substances.*
- B2. **Sequence describing stormwater quality measure implementation relative to land disturbing activities:** *Prior to construction, the contractor shall submit a revised erosion control plan identifying the exact sequence of operations and the installation of erosion control features.*
- B3. **Stable construction entrance locations and specifications (at all points of ingress and egress):** *Prior to construction, the contractor shall submit a revised erosion control plan identifying the location of stable construction entrances.*

CONSTRUCTION / STORMWATER POLLUTION PREVENTION PLAN

INDEX OF TECHNICAL REVIEW ITEMS

- B4. **Sediment control measures for sheet flow areas:** *Temporary seeding will be placed throughout the project as a means to control sediment in areas of sheet flow. Silt fences will be placed outside the toe of slopes where appropriate to help deposit sediment from overland. Where possible, the existing vegetation shall not be disturbed so it may act as a vegetative filter and remove sediment from sheet flow. For stormwater sheet flowing onto the project site, silt fences will be used as a perimeter diversion.*
- B5. **Sediment control measures for concentrated flow areas:** *Concentrated flows will be limited to short lengths of shallow swales directing small amounts of water to catch basins between the sidewalk and curb and gutter or just behind the sidewalks. Ditch inlet protection will be utilized at these catch basins.*
- B6. **Storm sewer inlet protection measure locations and specifications:** *Ditch inlet protection will be placed around the all ditch inlets and drywells while curb inlet protection will be placed around all curb inlets. Ditch inlets will be protected from sediment through one of the methods specified in the City of South Bend Design & Construction Standards.*
- B7. **Runoff control measures (e.g. diversions, rock check dams, slope drains, etc.):** *There are no areas of large embankment on this project. Therefore, runoff control measures besides those previously mentioned are not applicable.*
- B8. **Stormwater outlet protection specifications:** *Stormwater collected by inlets and catch basins will be connected to an existing enclosed storm sewer system owned by the City of South Bend. The existing system has established outlets and no additional stabilization of the outlets is anticipated.*
- B9. **Grade stabilization structure locations and specifications:** *Not Applicable.*
- B10. **Location, dimensions, specifications, and construction details of each stormwater quality measure:** *See Erosion Control Plans and Erosion Control Table (Appendix A) and the City of South Bend Design & Construction Standards for the locations and specifications of each stormwater quality measure.*
- B11. **Temporary surface stabilization methods appropriate for each season (include sequencing):** *The existing vegetation shall be left in place as long as possible to maintain surface stabilization and act as a vegetative filter. Once existing vegetation is disturbed, temporary seeding shall be used on exposed areas to prevent erosion. Temporary seeding shall be applied at a rate of 150 lb/ac as prescribed in 205.04 of the Indiana Department of Transportation (INDOT) Standard Specifications. Spring Mix shall be used from January 1 to June 15, and Fall Mix shall be used from September 1 to December 31. Mulching shall be in accordance with 205.04.*
- B12. **Permanent surface stabilization specifications (include sequencing):** *After final grading operations, sodding shall be used for surface stabilization. Sodding shall be in accordance with 621 of the INDOT Specifications.*
- B13. **Material handling and spill prevention plan:** *Prior to construction, the contractor shall submit a revised erosion control plan. A material handling and spill prevention plan shall also be included with this submission.*

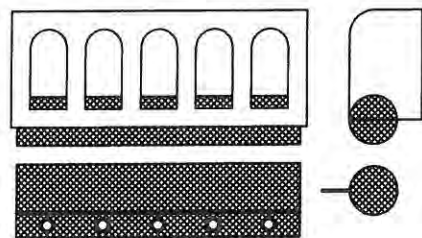
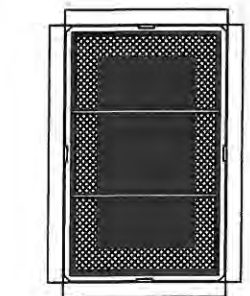
CONSTRUCTION / STORMWATER POLLUTION PREVENTION PLAN

INDEX OF TECHNICAL REVIEW ITEMS

- B14. **Monitoring and maintenance guidelines for each proposed stormwater quality measure:** *This project will be constructed in accordance with the INDOT Specifications and will include measures for temporary erosion control. Where the Indiana Stormwater Quality Manual exceeds the requirements of the INDOT Specifications, these measures shall be implemented. All stormwater quality measures (temporary and permanent) will be installed, monitored and maintained according to these specifications.*
- B15. **Erosion & sediment control specifications for individual building lots:** *Not Applicable.*

SECTION C: ASSESSMENT OF STORMWATER POLLUTION PREVENTION PLAN – POST CONSTRUCTION COMPONENT

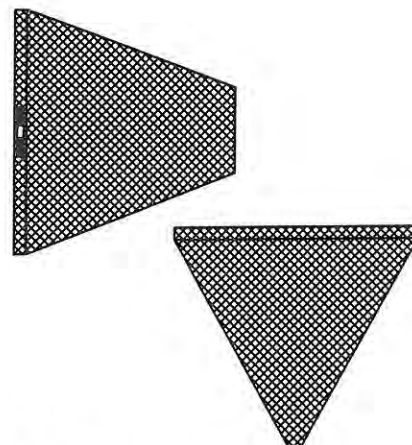
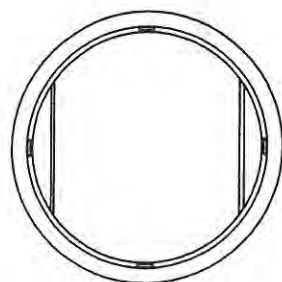
- C1. **Description of pollutants and their sources associated with the proposed land use:** *Post construction pollutants are typically grit from the natural wear on the road surface and grit deposited by vehicles, rubber fragments from tires, brake dust from vehicles, oil, gasoline, and littering.*
- C2. **Sequence describing stormwater quality measure implementation:** *The actual sequence of construction and implementation of erosion control and stormwater quality measures shall be provided by the contractor with the revised erosion control plan.*
- C3. **Description of proposed post construction stormwater quality measures (Include a written description of how these measures will reduce discharge of expected pollutants):** *The post-construction estimate of peak discharge is 20.8 cfs as shown in the peak discharge data (pg. 43-50) which is a reduction in discharge due to a decrease in the amount of impervious area and an increase in the amount of grassed area. Permanent erosion control measures consisting of sodding will be placed in swales and at all disturbed areas which will prevent water from eroding the soil as it moves to the inlets and catch basins and will help filter out sediment before entering into the enclosed storm sewer system.*
- C4. **Location, dimensions, specifications, and construction details of each stormwater quality measure:** *See Typical Sections and Plan Sheets for the location of stormwater quality measures (Appendix A). See the City of South Bend Design & Construction Standards for dimensions and details of stormwater quality measures and INDOT Standard Specifications 205 and 621 for specifications (pg. 12-35).*
- C5. **Description of maintenance guidelines for post construction stormwater quality measures:** *Upon completion of construction, the City of South Bend will be responsible for ensuring the sodding grows properly and make any necessary repairs.*



This detail depicts the typical placement of the HR (hydrocarbon removal) pillow. An HR pillow is hemmed to the entire perimeter of the sediment bag +/- 4" from the top of the bag and extends +/- 4" towards center. Curb boxes are protected with a separate pillow that is secured to either the curb box vanes or the top flange of the Catch-All frame.



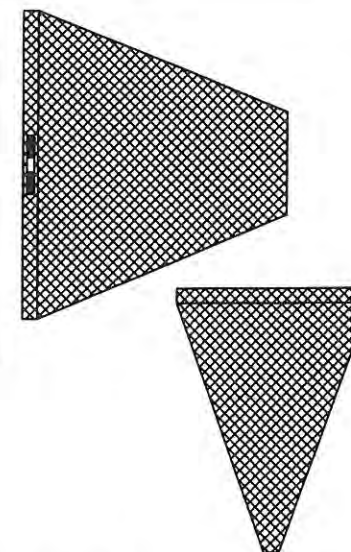
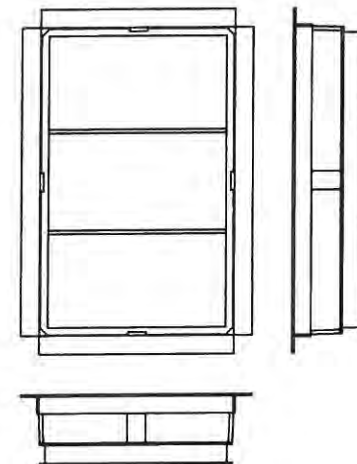
CATCH-ALL HR ABSORBENT PILLOW
PRE & POST CONSTRUCTION



GENERAL NOTES:

FRAME: Top flange fabricated from 1 1/4"x1 1/4"x3/8" angle. Base rim fabricated from 1 1/2"x3/2"x3/8" channel. Handles and suspension brackets fabricated from 1 1/4"x3/4" flat stock. All steel conforming to ASTM-A36.
SEDIMENT BAG: Bag fabricated from 4 oz./sq.yd. non-woven polypropylene geotextile reinforced with polyester mesh. Bag secured to base rim with a stainless steel band and lock.

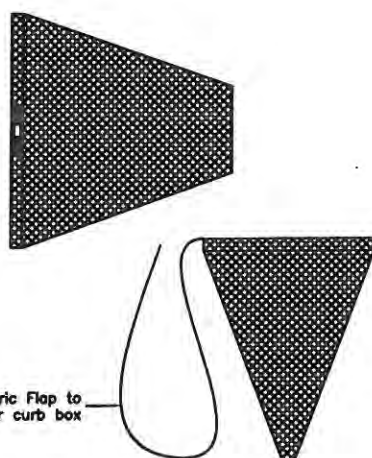
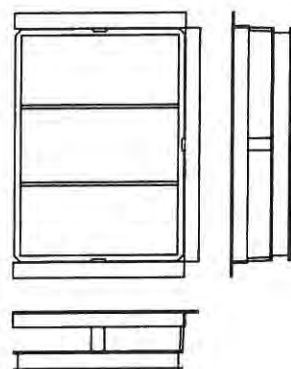
TYPICAL ROUND CATCH-ALL
PRE & POST CONSTRUCTION



GENERAL NOTES:

FRAME: Top flange fabricated from 1 1/4"x1 1/4"x3/8" angle. Base rim fabricated from 1 1/2"x3/2"x3/8" channel. Handles and suspension brackets fabricated from 1 1/4"x3/4" flat stock. All steel conforming to ASTM-A36.
SEDIMENT BAG: Bag fabricated from 4 oz./sq.yd. non-woven polypropylene geotextile reinforced with polyester mesh. Bag secured to base rim with a stainless steel band and lock.

TYPICAL RECTANGULAR CATCH-ALL
PRE & POST CONSTRUCTION

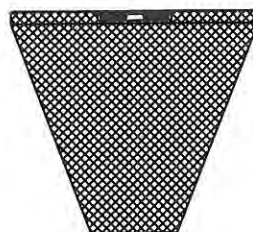
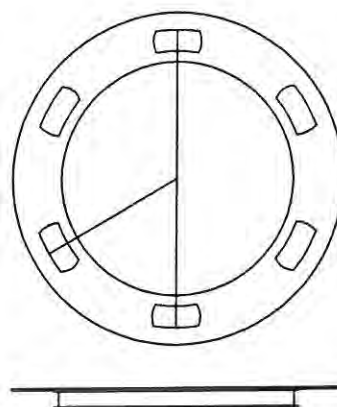


Fabric Flap to cover curb box

GENERAL NOTES:

FRAME: Top flange fabricated from 1 1/4"x1 1/4"x3/8" angle. Base rim fabricated from 1 1/2"x3/2"x3/8" channel. Handles and suspension brackets fabricated from 1 1/4"x3/4" flat stock. All steel conforming to ASTM-A36.
SEDIMENT BAG: Bag fabricated from 4 oz./sq.yd. non-woven polypropylene geotextile reinforced with polyester mesh. Bag secured to base rim with a stainless steel band and lock.

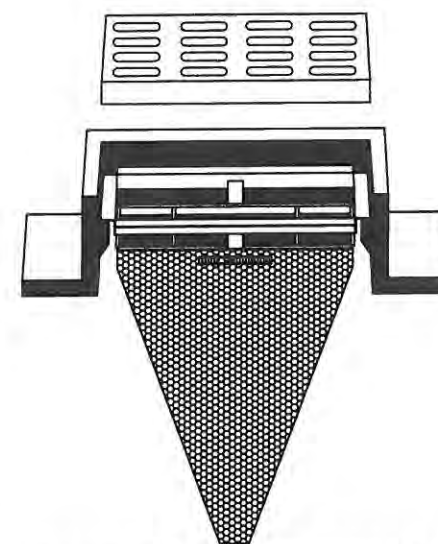
TYPICAL CURB BOX CATCH-ALL
PRE & POST CONSTRUCTION



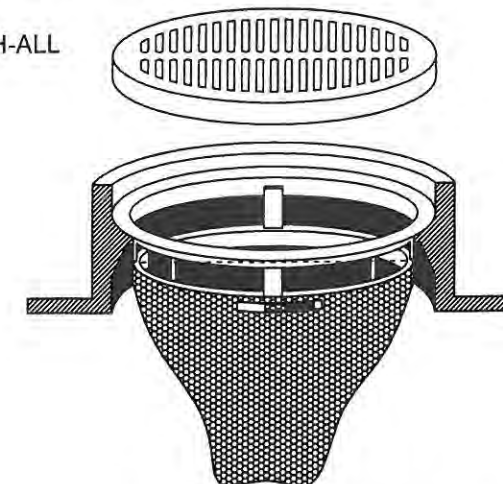
GENERAL NOTES:

FRAME: Top flange fabricated from 1 1/4"x1 1/4"x3/8" angle. Base rim fabricated from 1 1/2"x3/2"x3/8" channel. Handles and suspension brackets fabricated from 1 1/4"x3/4" flat stock. All steel conforming to ASTM-A36.
SEDIMENT BAG: Bag fabricated from 4 oz./sq.yd. non-woven polypropylene geotextile reinforced with polyester mesh. Bag secured to base rim with a stainless steel band and lock.

TYPICAL BEEHIVE CATCH-ALL
PRE & POST CONSTRUCTION

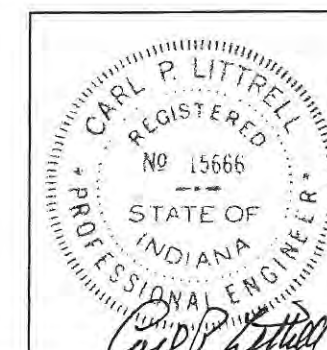


RECTANGULAR CASTING 3D CATCH-ALL
PRE & POST CONSTRUCTION



ROUND CASTING 3D CATCH-ALL
PRE & POST CONSTRUCTION

NOTES:
* OR APPROVED EQUAL



No.	BY	DATE	REVISION	DATE
		1/12/2010		
			DRAWN	RSG
			CHECKED	RAN
			APRVD	C.P.L.
			SCALE	NONE



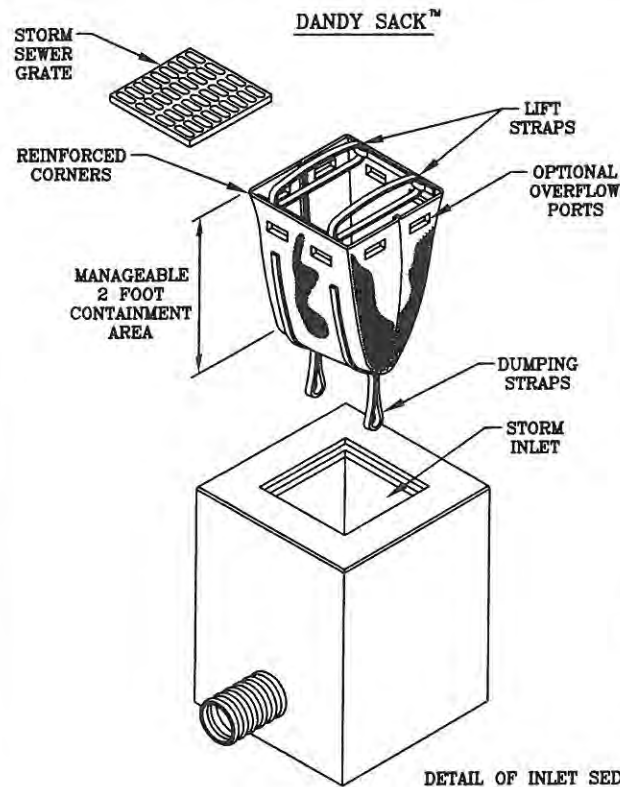
DEPARTMENT OF PUBLIC WORKS
CITY OF SOUTH BEND, INDIANA

DIVISION
<input checked="" type="checkbox"/> CIVIL
<input type="checkbox"/> TRAFFIC
<input type="checkbox"/> WATER
<input type="checkbox"/> WASTE WATER

CONSTRUCTION BMP'S

STANDARD
DRAWING

SHEET NO.
ES-1



NOTE: THE DANDY SACK™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

REGULAR FLOW DANDY SACK™ (BLACK)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.78 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4632	%	15 x 15
Puncture Strength	ASTM D 4833	kN (lbs)	0.67 (150)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	5506 (800)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.73 (165)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	2852 (70)
Permittivity	ASTM D 4491	Sec ⁻¹	0.90

HI-FLOW DANDY SACK™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 x 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

*Note: All Dandy Sacks™ can be ordered with our optional oil absorbent pillows

DETAIL OF INLET SEDIMENT CONTROL DEVICE

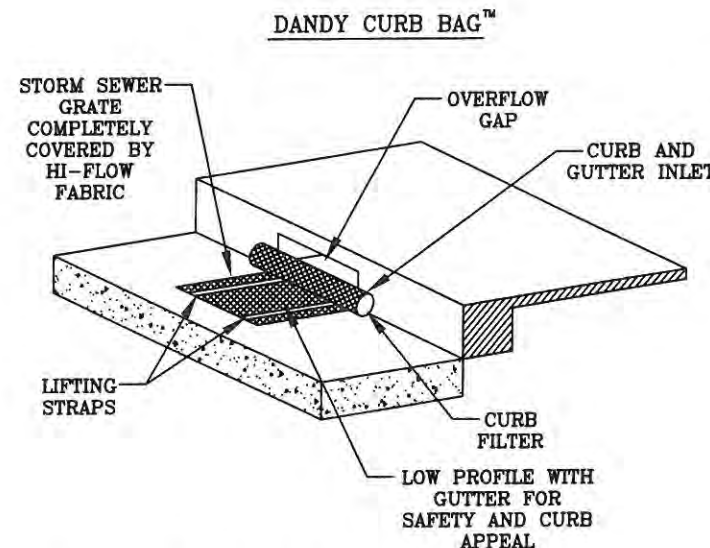
DANDY SACK SPECIFICATION

NOTE: THE DANDY CURB BAG™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

DANDY CURB BAG™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 x 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

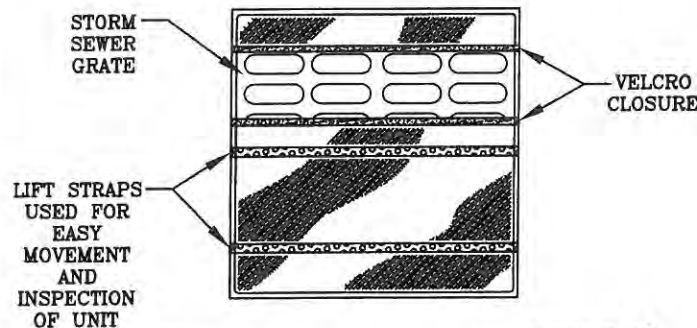
*Note: All Dandy Curb Bags™ can be ordered with our optional oil absorbents



DETAIL OF CURB INLET SEDIMENT CONTROL DEVICE WITH CURB FILTER

DANDY CURB BAG SPECIFICATION

DANDY BAG

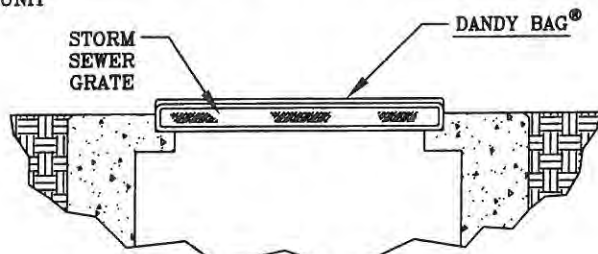


NOTE: THE DANDY BAG® WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

HI-FLOW DANDY BAG® (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 x 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

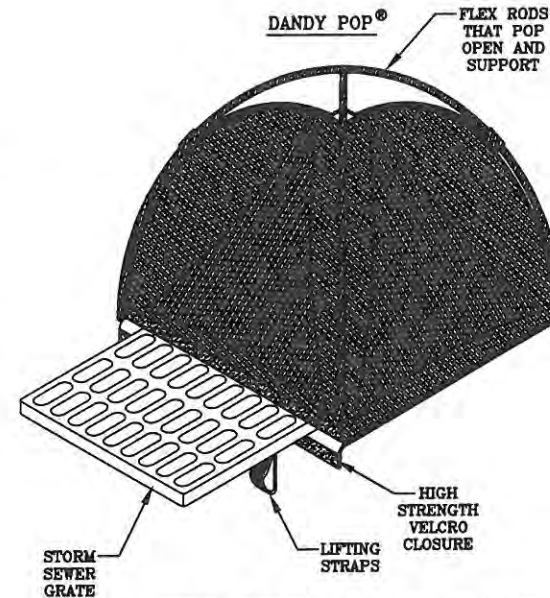
*Note: All Dandy Bags® can be ordered with our optional oil absorbent pillows



DETAIL OF INLET SEDIMENT CONTROL DEVICE

DANDY BAG SPECIFICATION

DANDY POP®



DETAIL OF INLET SEDIMENT CONTROL DEVICE

DANDY POP SPECIFICATION

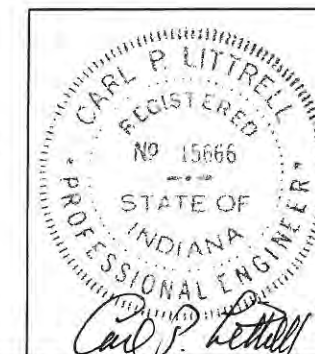
NOTE: THE DANDY SACK™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

DANDY POP® (BLACK & SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 x 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

*Note: All Dandy Pops® can be ordered with our optional oil absorbent pillows

NOTES:
* OR APPROVED EQUAL



No.	BY	DATE	REVISION	DATE
				1/12/2010
				DRAWN RSG
				CHECKED RAN
				APRVD C.P.L.
				SCALE
				NONE



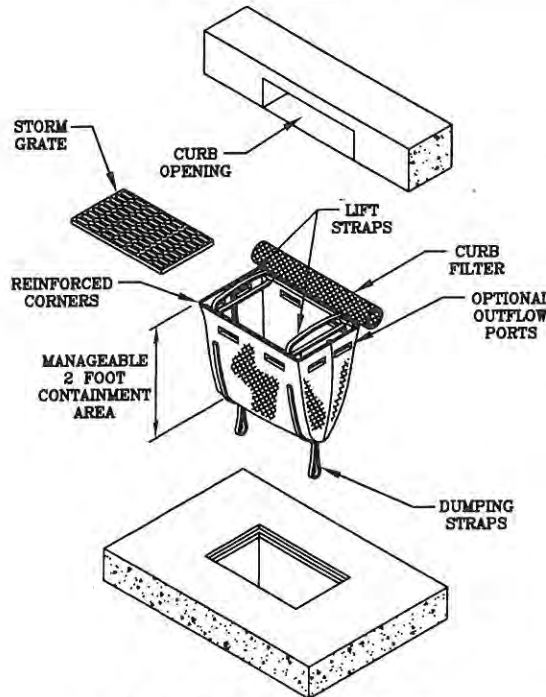
DEPARTMENT OF PUBLIC WORKS
CITY OF SOUTH BEND, INDIANA

DIVISION	
<input checked="" type="checkbox"/>	CIVIL
<input type="checkbox"/>	TRAFFIC
<input type="checkbox"/>	WATER
<input type="checkbox"/>	WASTE WATER

CONSTRUCTION BMP'S

STANDARD DRAWING
SHEET NO.
ES-2

DANDY CURB SACK™



NOTE: THE DANDY CURB SACK™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

REGULAR FLOW DANDY CURB SACK™ (BLACK)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.78 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4632	%	15 x 15
Puncture Strength	ASTM D 4833	kN (lbs)	0.67 (150)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	5506 (800)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.73 (165)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	1/min/m ² (gal/min/ft ²)	2852 (70)
Permittivity	ASTM D 4491	Sec ⁻¹	0.90

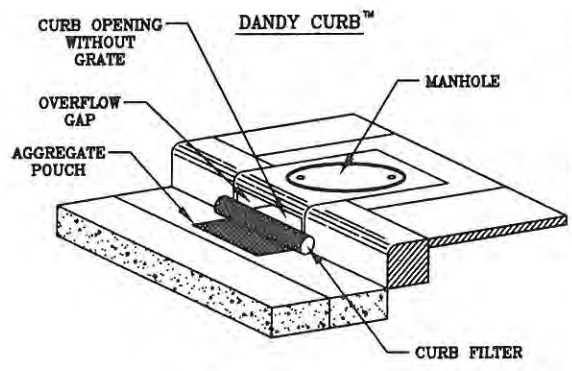
HI-FLOW DANDY CURB SACK™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 x 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	1/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

*Note: All Dandy Sacks™ can be ordered with our optional oil absorbent pillows

DETAIL OF INLET SEDIMENT CONTROL DEVICE WITH CURB FILTER

DANDY CURB SACK SPECIFICATION



DETAIL OF CURB INLET SEDIMENT CONTROL DEVICE WITH CURB FILTER

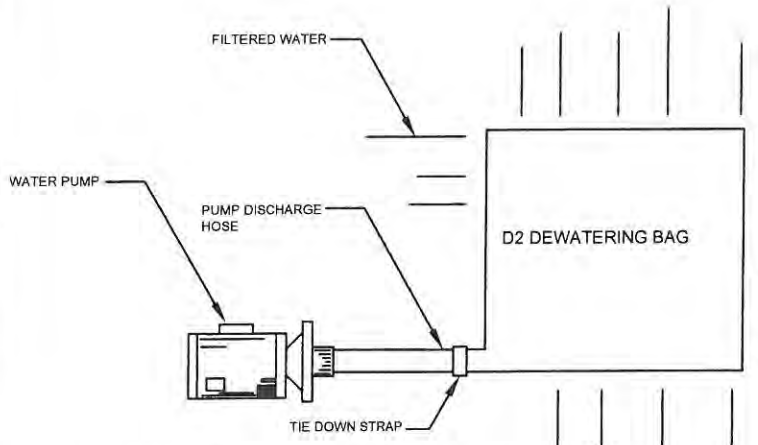
DANDY CURB SPECIFICATION

DANDY CURB™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 x 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	1/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

*Note: All Dandy Curbs™ can be ordered with our optional oil absorbents

NOTES:
* OR APPROVED EQUAL



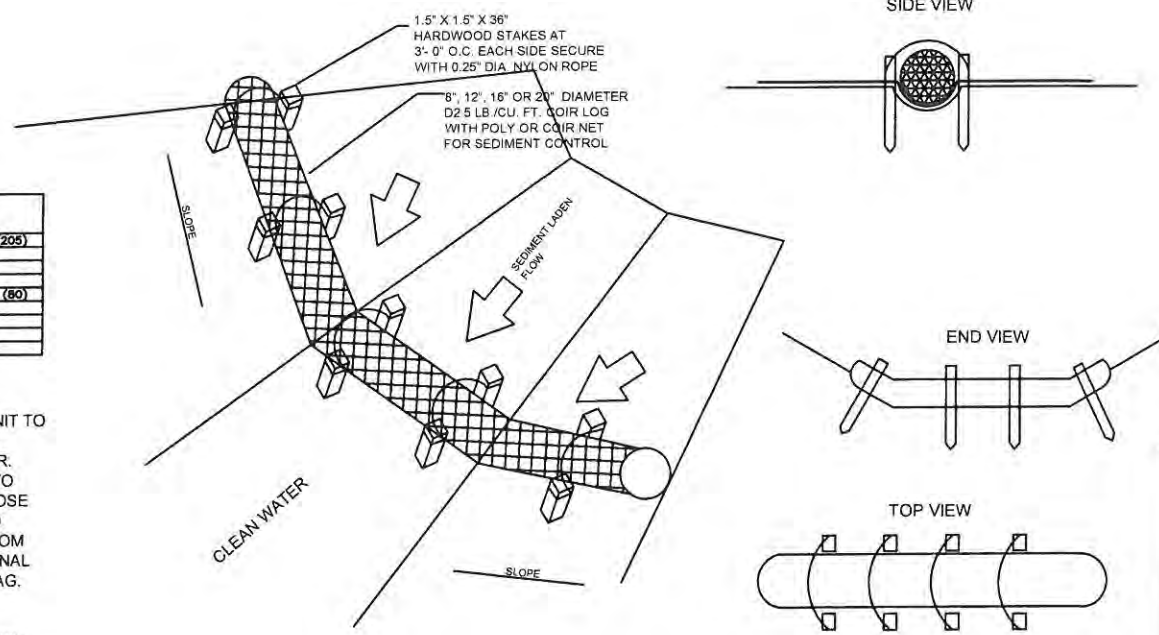
D2 DEWATERING BAG™

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 90
Puncture Strength	ASTM D 4833	kN (lbs)	0.58 (130)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	2818 (380)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.36 (80) x 0.36 (80)
UV Resistance	ASTM D 4355	%	70
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.180 (80)
Flow Rate	ASTM D 4491	1/min/m ² (gal/min/ft ²)	3868 (95)
Permittivity	ASTM D 4491	Sec ⁻¹	1.2

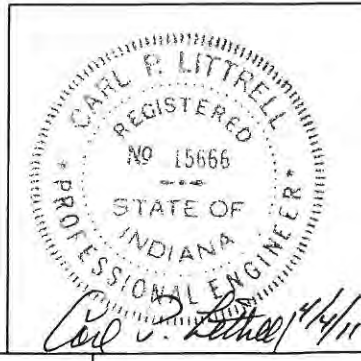
INSTALLATION AND MAINTENANCE GUIDELINES

INSTALLATION: PLACE LIFTING STRAPS (NOT INCLUDED) UNDER THE UNIT TO FACILITATE REMOVAL AFTER USE. UNFOLD D2 DEWATERING BAG ON A STABILIZED AREA OVER DENSE VEGETATION, STRAW OR OTHER COVER. PLACE BAG OVER OPEN GRADED STONE, SUCH AS INDOT #2 GRAVEL, TO ACHIEVE MAXIMUM FILTRATION AND DRAINAGE. INSERT DISCHARGE HOSE FROM PUMP INTO D2 DEWATERING BAG A MINIMUM OF SIX INCHES AND TIGHTLY SECURE WITH THE ATTACHED STRAP TO PREVENT WATER FROM FLOWING OUT OF THE UNIT WITHOUT BEING FILTERED. IF USING OPTIONAL ABSORBENTS, PLACE ABSORBENT BOOM INTO THE D2 DEWATERING BAG. CLIP ABSORBENT BOOM TO TETHER PROVIDED INSIDE THE UNIT.

MAINTENANCE: REPLACE THE UNIT WHEN 1/2 FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW RATE OF THE PUMP DISCHARGE TO AN IMPRACTICAL RATE. IF USING OPTIONAL OIL ABSORBENTS; REMOVE AND REPLACE ABSORBENT WHEN NEAR SATURATION.



D2 COIR LOG DITCH CHECK FOR SEDIMENT AND ENERGY CONTROL 006



No.	BY	DATE	REVISION	DATE
		1/12/2010		
			DRAWN RSG	
			CHECKED RAN	
			APRVD C.P.L.	
			SCALE	
			NONE	

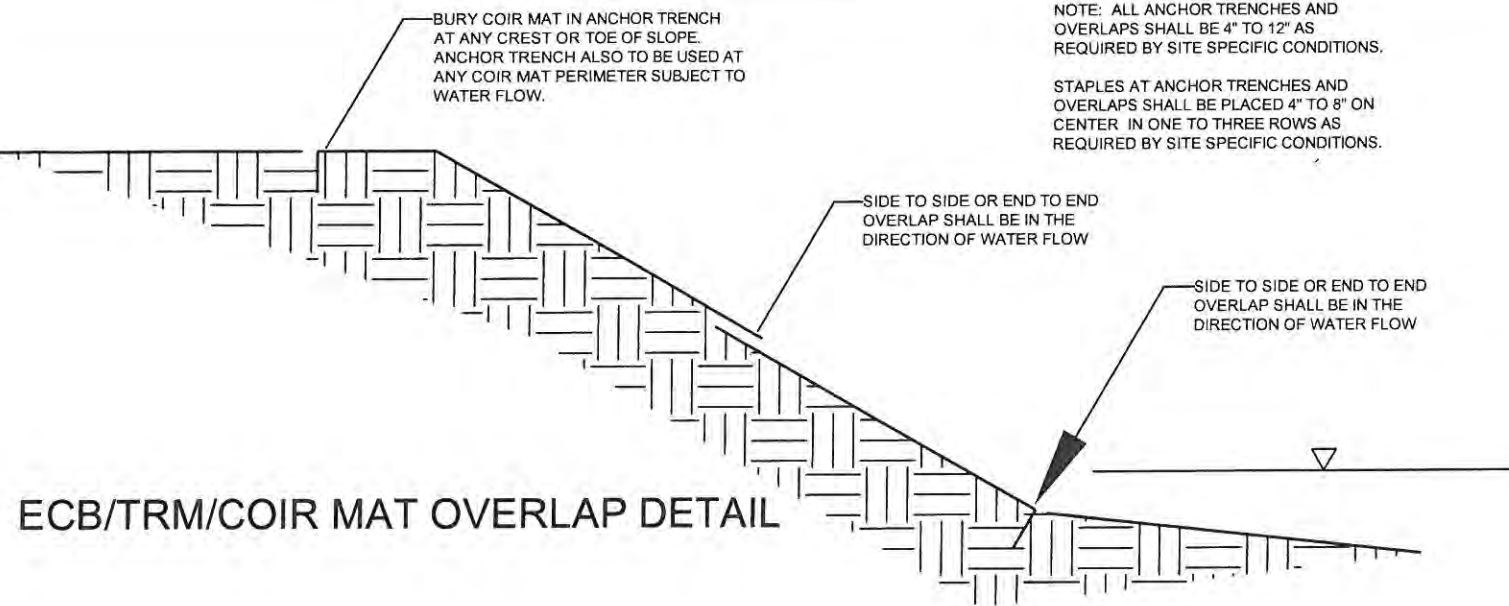


DEPARTMENT OF PUBLIC WORKS
CITY OF SOUTH BEND, INDIANA

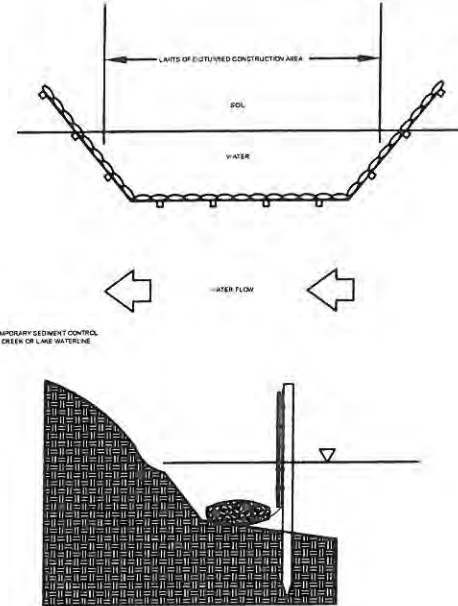
DIVISION

<input checked="" type="checkbox"/> CIVIL
<input type="checkbox"/> TRAFFIC
<input type="checkbox"/> WATER
<input type="checkbox"/> WASTE WATER

CONSTRUCTION BMP'S
STANDARD DRAWING
SHEET NO.
ES-3



ECB/TRM/COIR MAT OVERLAP DETAIL



SILT FENCE AT THE WATERLINE SPECIFICATION AND INSTALLATION DETAIL

SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC SPECIFICATION 090311

DESCRIPTION: SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC SHALL CONSIST OF FOUR PARTS:
 1. SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN GEOTEXTILE SHALL BE A 39 1/2" NON-WOVEN FILTER FABRIC MACHINE PRODUCED FROM 100% POLYPROPYLENE. GEOTEXTILE SHOULD BE DESIGNED SPECIFICALLY TO RETAIN SEDIMENT AND REMAIN HIGHLY PERMEABLE TO WATER. DESIRED CHARACTERISTICS INCLUDE SMALL PORE SIZE, HIGH U.V. RESISTANCE, HIGH PERMITTIVITY, AND A HIGH PERCENT OPEN AREA.
 2. FULL 2" X 2" X 43" HARDWOOD STAKE WITH A SHARPENED POINT
 3. NOMINAL 1/2" X 2" X 25 1/2" HARDWOOD LATH
 4. 1.5" GS16 STAPLES

GEOTEXTILE PROPERTIES SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC:

MECHANICAL/ PHYSICAL PROPERTIES	DESCRIPTION/MINIMUM AVERAGE ROLL VALUES	TEST METHOD
STRUCTURE	NON-WOVEN	
REINFORCEMENT	BELT STRAND SCRIM	
POLYMER	POLYPROPYLENE	
MASS PER UNIT AREA	5.2 oz/sq.yd.	ASTM D3776
GRAB TENSILE STRENGTH MD	297lbs.	ASTM D4632
GRAB TENSILE STRENGTH CD	223lbs.	ASTM D4632
GRAB ELONGATION MD	58%	ASTM D4632
GRAB ELONGATION CD	59%	ASTM D4632
TRAP TEAR MD X CD	81 lbs. X 75 lbs.	ASTM D4533
MULLEN BURST STRENGTH	340 psi	ASTM D3786
PUNCTURE RESISTANCE	99 lbs	ASTM D4833
WATER FLOW RATE	192 gpm/sq.ft.	ASTM D4491
PERMITTIVITY	2.60 per. sec.	ASTM D4491
#60 SIEVE	ASTM D4751	
COLOR	Gray	AOS (U.S. SIEVE)

ASSEMBLY: SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC GEOTEXTILE SHALL BE ATTACHED TO HARDWOOD STAKES WITH HARDWOOD LATHS AND SECURED WITH FIVE 1 1/2" STAPLES. HARDWOOD STAKES SHALL BE 6" IN CENTER. THE BOTTOM 14 1/2" OF FABRIC SHALL BE LEFT UNSECURED TO ALLOW FOR ENTRENCHMENT.
PREPARATION/INSTALLATION: CREATE A 6" DEEP TRENCH ALONG PROPOSED FENCE LINE. DRIVE THE STAKES INTO THE TRENCH 8-12" OR UNTIL SECURE. BE SURE TO STRETCH FABRIC TAUT WHEN DRIVING STAKES. STAKES MUST BE INSTALLED ON THE DOWNHILL OR DOWNSTREAM SIDE OF FENCE. DRAPE LOOSE END OF GEOTEXTILE INTO TRENCH, THEN BACKFILL AND COMPACT SOIL ON BOTH SIDES.

AVAILABLE: D2 Land & Water Resource, INC. 2600 Boyd Ave. Indianapolis, IN 46218.

SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC SPECIFICATION 090311

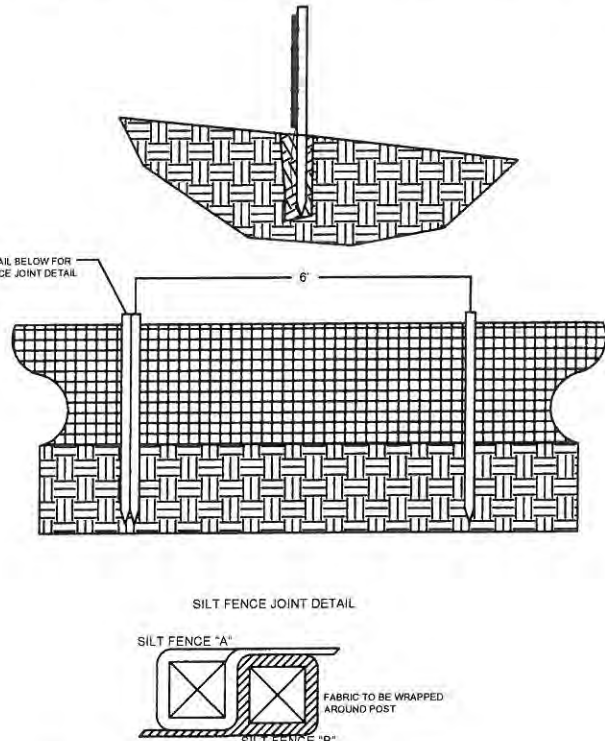
DESCRIPTION: SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC SHALL CONSIST OF FOUR PARTS:
 1. SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN GEOTEXTILE SHALL BE A 39 1/2" NON-WOVEN FILTER FABRIC MACHINE PRODUCED FROM 100% POLYPROPYLENE. GEOTEXTILE SHOULD BE DESIGNED SPECIFICALLY TO RETAIN SEDIMENT AND REMAIN HIGHLY PERMEABLE TO WATER. DESIRED CHARACTERISTICS INCLUDE SMALL PORE SIZE, HIGH U.V. RESISTANCE, HIGH PERMITTIVITY, AND A HIGH PERCENT OPEN AREA.
 2. FULL 2" X 2" X 43" HARDWOOD STAKE WITH A SHARPENED POINT
 3. NOMINAL 1/2" X 2" X 25 1/2" HARDWOOD LATH
 4. 1.5" GS16 STAPLES

GEOTEXTILE PROPERTIES SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC:

MECHANICAL/ PHYSICAL PROPERTIES	DESCRIPTION/MINIMUM AVERAGE ROLL VALUES	TEST METHOD
STRUCTURE	NON-WOVEN	
REINFORCEMENT	BELT STRAND SCRIM	
POLYMER	POLYPROPYLENE	
MASS PER UNIT AREA	5.2 oz/sq.yd.	ASTM D3776
GRAB TENSILE STRENGTH MD	297lbs.	ASTM D4632
GRAB TENSILE STRENGTH CD	223lbs.	ASTM D4632
GRAB ELONGATION MD	58%	ASTM D4632
GRAB ELONGATION CD	59%	ASTM D4632
TRAP TEAR MD X CD	81 lbs. X 75 lbs.	ASTM D4533
MULLEN BURST STRENGTH	340 psi	ASTM D3786
PUNCTURE RESISTANCE	99 lbs	ASTM D4833
WATER FLOW RATE	192 gpm/sq.ft.	ASTM D4491
PERMITTIVITY	2.60 per. sec.	ASTM D4491
AOS (U.S. SIEVE)	#60 SIEVE	ASTM D4751
COLOR	Gray	

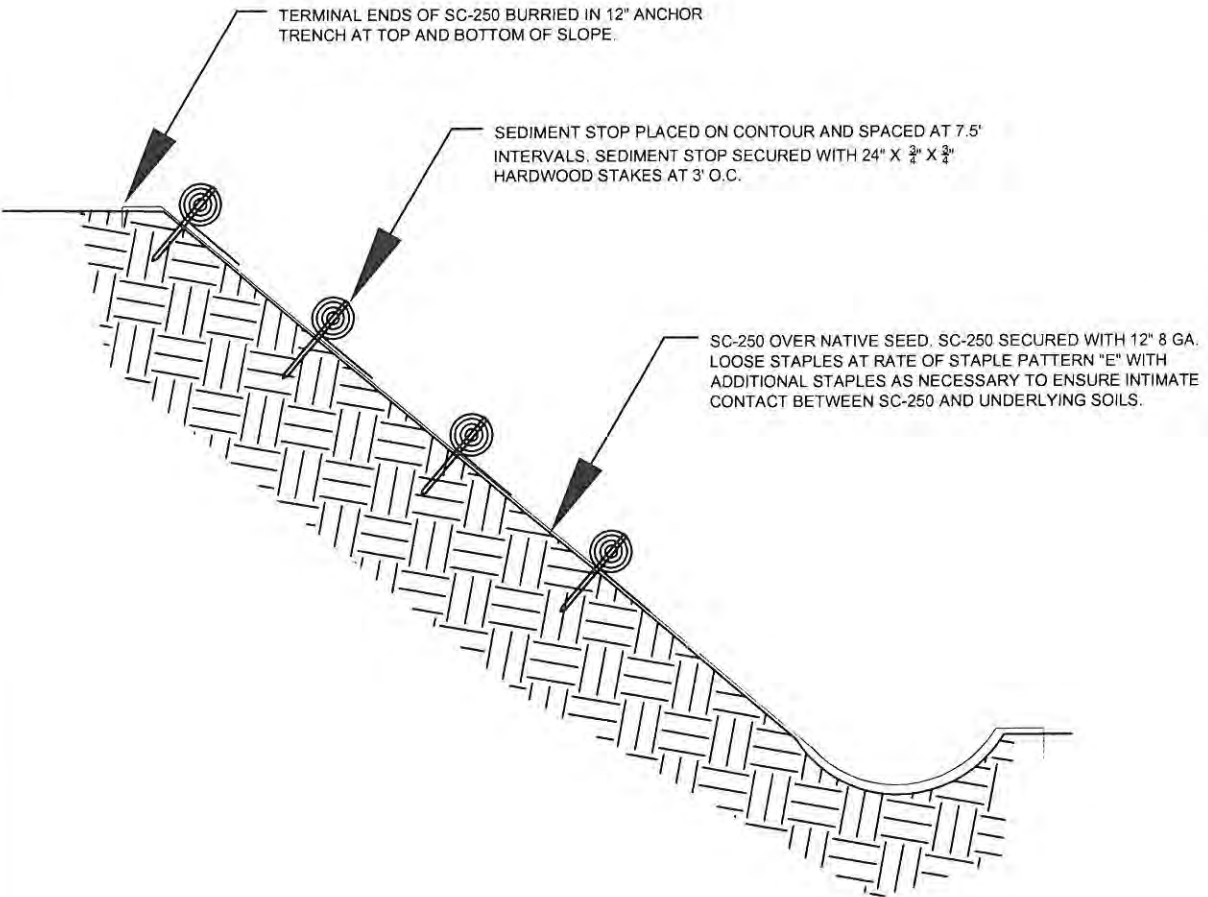
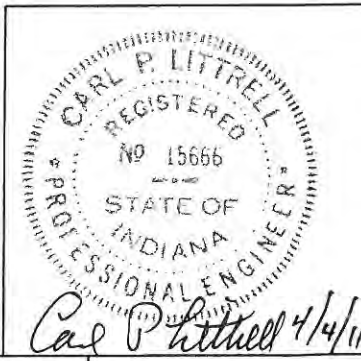
ASSEMBLY: SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC GEOTEXTILE SHALL BE ATTACHED TO HARDWOOD STAKES WITH HARDWOOD LATHS AND SECURED WITH FIVE 1 1/2" STAPLES. HARDWOOD STAKES SHALL BE 6" IN CENTER. THE BOTTOM 14 1/2" OF FABRIC SHALL BE LEFT UNSECURED TO ALLOW FOR ENTRENCHMENT.
PREPARATION/INSTALLATION: CREATE A 6" DEEP TRENCH ALONG PROPOSED FENCE LINE. DRIVE THE STAKES INTO THE TRENCH 8-12" OR UNTIL SECURE. BE SURE TO STRETCH FABRIC TAUT WHEN DRIVING STAKES. STAKES MUST BE INSTALLED ON THE DOWNHILL OR DOWNSTREAM SIDE OF FENCE. DRAPE LOOSE END OF GEOTEXTILE INTO TRENCH, THEN BACKFILL AND COMPACT SOIL ON BOTH SIDES.

AVAILABLE: D2 Land & Water Resource, INC. 2600 Boyd Ave. Indianapolis, IN 46218.



SILT FENCE SPECIFICATION AND INSTALLATION

NOTES:
* OR APPROVED EQUAL



SEDIMENT STOP APPLICATION 001

No.	BY	DATE	REVISION	DATE
		1/12/2010		
			DRAWN RSG	
			CHECKED RAN	
			APRVD C.P.L.	
			SCALE	
			NONE	



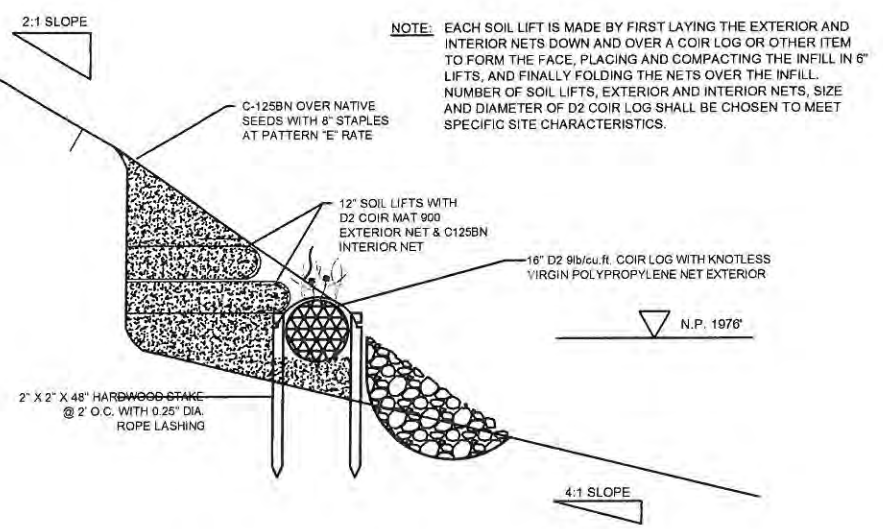
DEPARTMENT OF PUBLIC WORKS
CITY OF SOUTH BEND, INDIANA

DIVISION
<input checked="" type="checkbox"/> CIVIL
<input type="checkbox"/> TRAFFIC
<input type="checkbox"/> WATER
<input type="checkbox"/> WASTE WATER

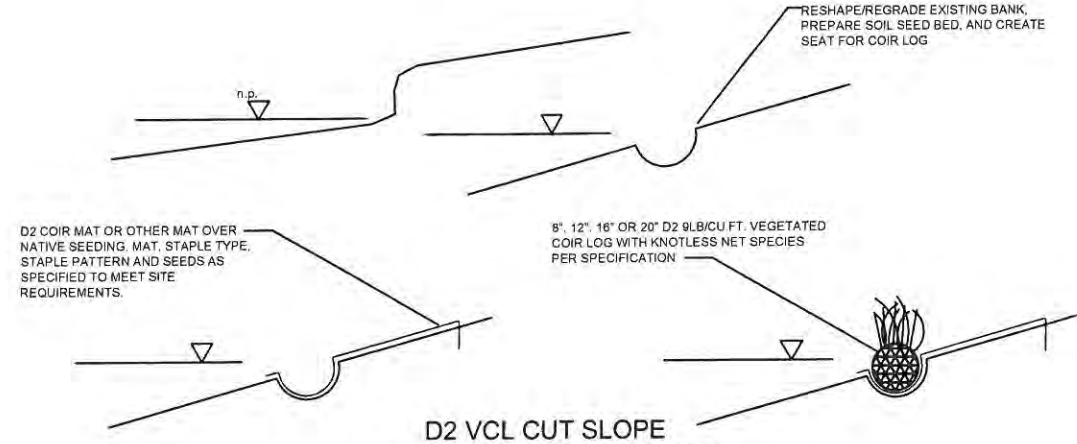
CONSTRUCTION BMP'S

STANDARD DRAWING
SHEET NO.
ES-4

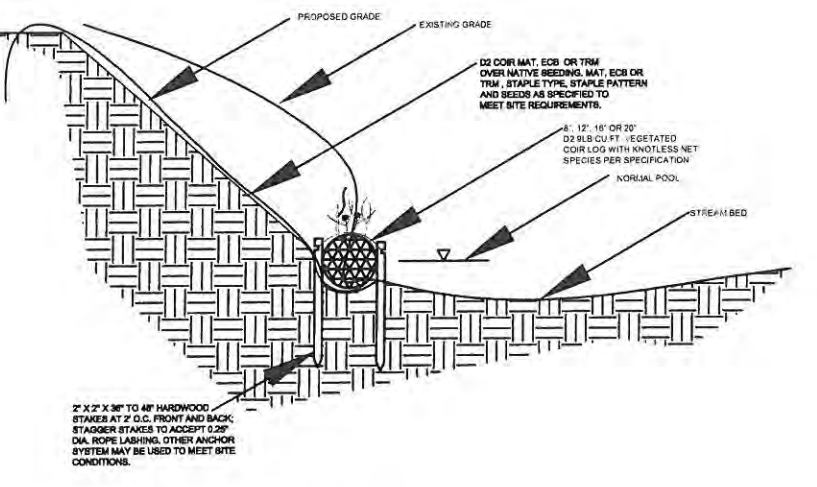
NOTE: CONSTRUCTION SEQUENCE
 1. DRIVE 2" X 2" X 48" HARDWOOD STAKES
 2. CREATE 1.0' DEEP KEYWAY FOR ROCK
 3. PLACE FABRIC IN KEYWAY; DRAPE FABRIC OVER STAKE FOR CONSTRUCTION
 4. PLACE ROCK
 5. TRIM EXCESS FABRIC.



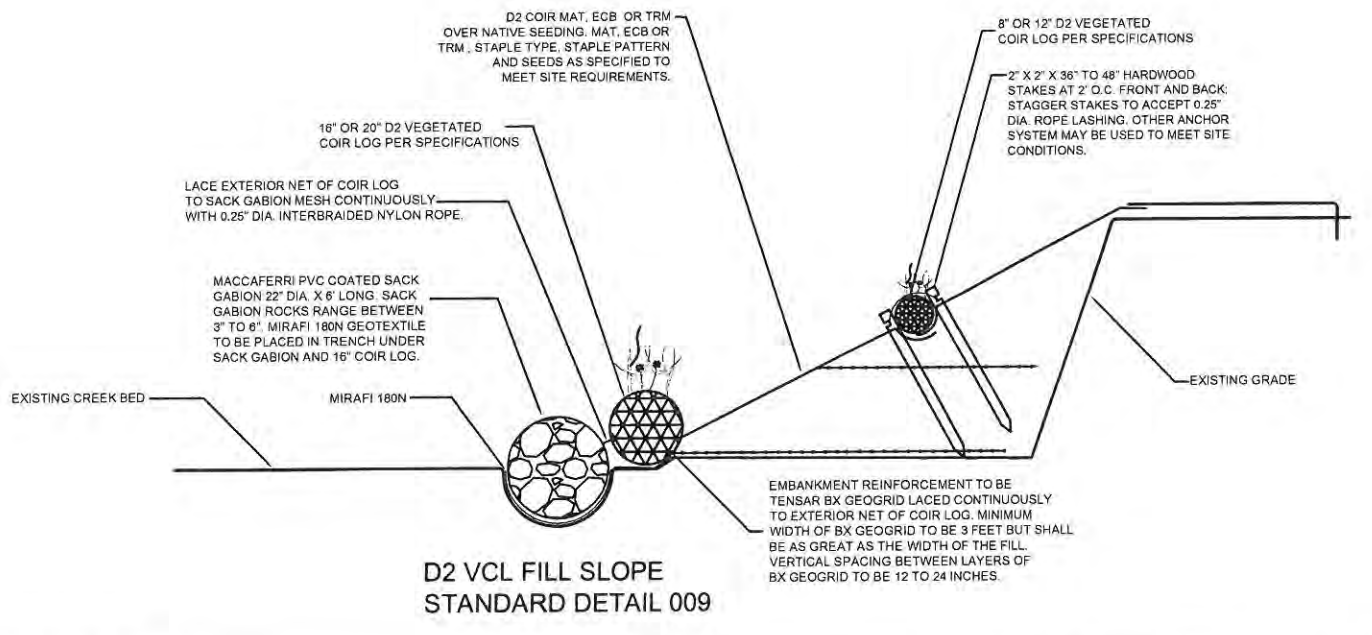
D2 VCL FILL SLOPE
 STANDARD DETAIL 006



D2 VCL CUT SLOPE
 STANDARD DETAIL 004



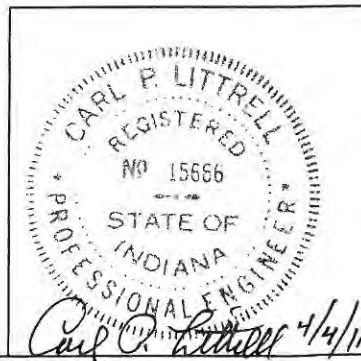
D2 VCL CUT SLOPE
 STANDARD DETAIL 005



D2 VCL FILL SLOPE
 STANDARD DETAIL 009

SCALE 0.5" = 1.0'
 D2 VCL FILL SLOPE
 STANDARD DETAIL 005

NOTES:
 * OR APPROVED EQUAL



No.	BY	DATE	REVISION	DATE
		1/12/2010		
			DRAWN RSG	
			CHECKED RAN	
			APRVD C.P.L.	
			SCALE	
			NONE	

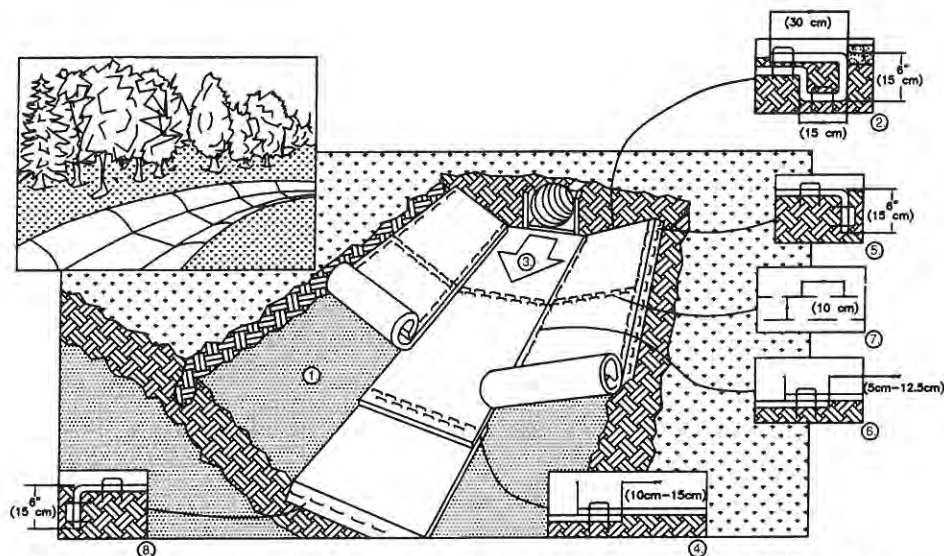


DEPARTMENT OF PUBLIC WORKS
 CITY OF SOUTH BEND, INDIANA

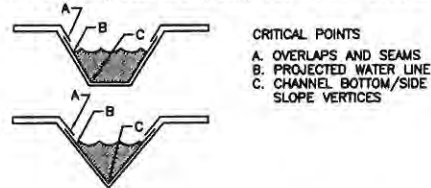
DIVISION
<input checked="" type="checkbox"/> CIVIL
<input type="checkbox"/> TRAFFIC
<input type="checkbox"/> WATER
<input type="checkbox"/> WASTE WATER

POST CONSTRUCTION BMP'S

STANDARD DRAWING
 SHEET NO.
 ES-5



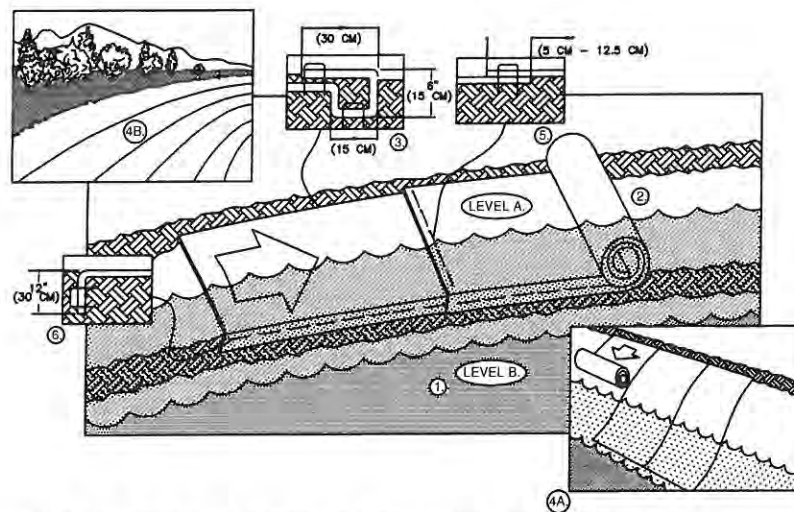
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEMSM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" (10cm-15cm) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (5cm-12.5cm) (DEPENDING ON BLANKET TYPE) AND STAPLED. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCHSM ON THE BLANKET BEING OVERLAPPED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9m-12m) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



CRITICAL POINTS
 A. OVERLAPS AND SEAMS
 B. PROJECTED WATER LINE
 C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

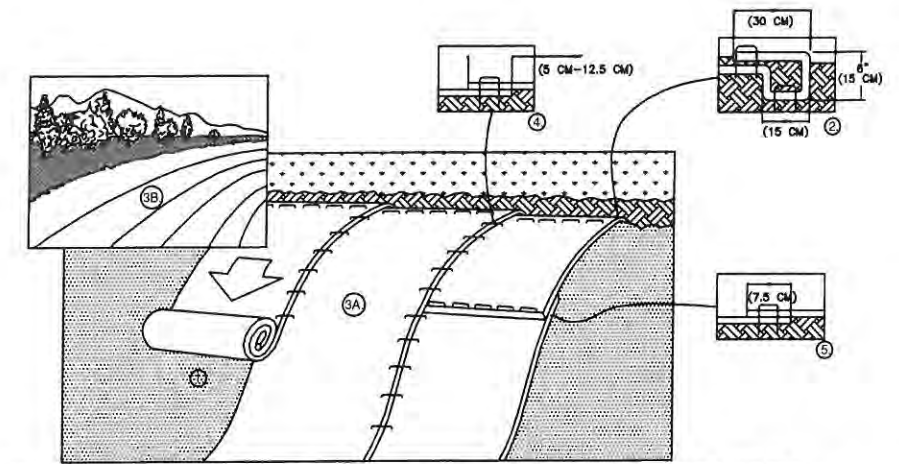
NOTE:
 * HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
 ** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

CHANNEL INSTALLATION



1. FOR EASIER INSTALLATION, LOWER WATER FROM LEVEL A TO LEVEL B BEFORE INSTALLATION.
2. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED, DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
3. BEGIN AT THE TOP OF THE SHORELINE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
4. ROLL BLANKETS EITHER (A) DOWN THE SHORELINE FOR LONG BANKS, (TOP TO BOTTOM) OR (B.) HORIZONTALLY ACROSS THE SHORELINE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEMSM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
5. THE EDGES OF ALL HORIZONTAL AND VERTICAL BLANKET SEAMS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP.
 NOTE:
 * SEAM OVERLAP SHOULD BE SHINGLED ACCORDING TO PREDOMINANT EROSION ACTION.
6. THE EDGE OF THE BLANKET AT OR BELOW NORMAL WATER LEVEL MUST BE ANCHORED BY PLACING THE BLANKET IN A 12" (30 CM) DEEP X 6" (15 CM) WIDE ANCHOR TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART IN THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING (STONE OR SAND MAY BE USED AS BACKFILL).
 NOTE:
 * IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

SHORELINE INSTALLATION



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEMSM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE.
5. CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE BLANKET WIDTH.
 NOTE:
 * IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

SLOPE INSTALLATION

NOTES:
 * OR APPROVED EQUAL



No.	BY	DATE	REVISION	DATE
				1/12/2010
				DRAWN RSG
				CHECKED RAN
				APRVD C.P.L.
				SCALE
				NONE

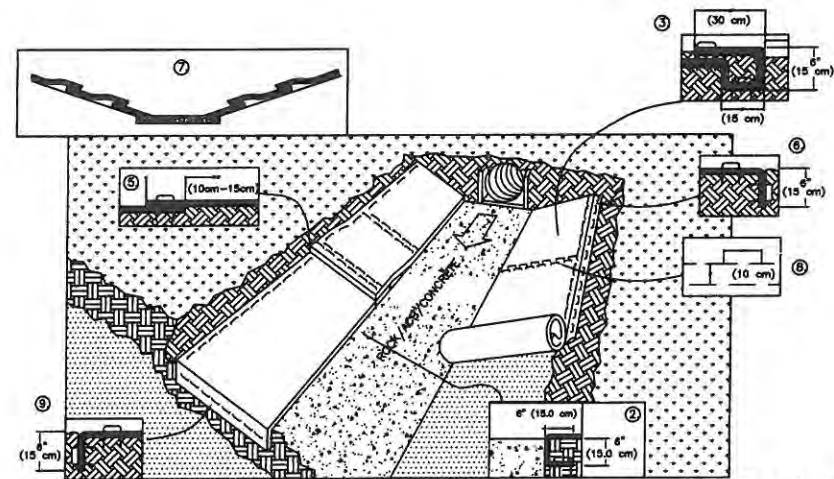


DEPARTMENT OF PUBLIC WORKS
 CITY OF SOUTH BEND, INDIANA

DIVISION	
<input checked="" type="checkbox"/>	CIVIL
<input type="checkbox"/>	TRAFFIC
<input type="checkbox"/>	WATER
<input type="checkbox"/>	WASTE WATER

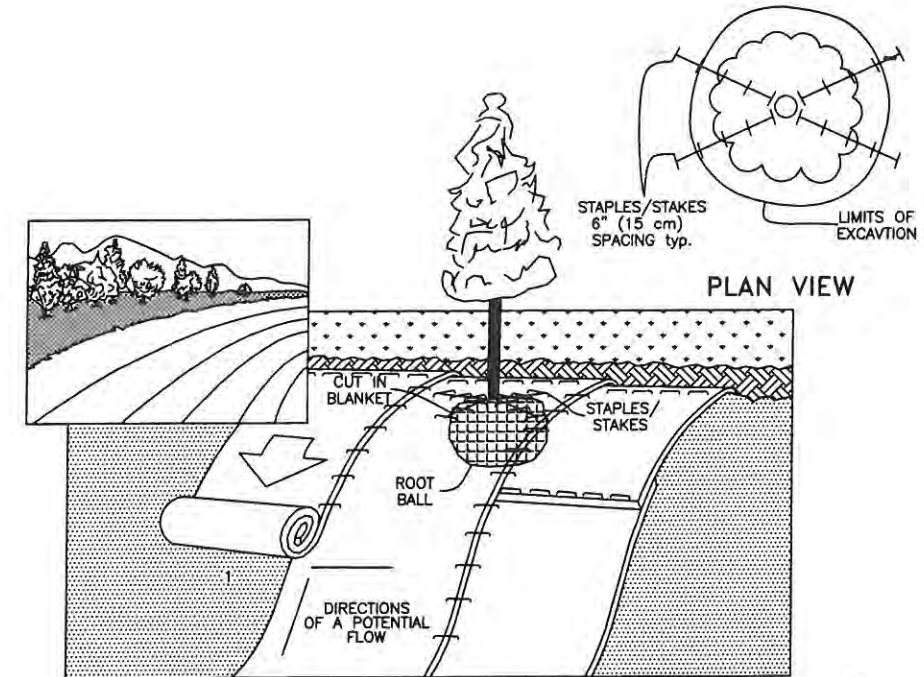
POST CONSTRUCTION BMP'S

STANDARD DRAWING
 SHEET NO.
 ES-6



1. Prepare soil before installing the rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed. note: when using Cell-O-Seed do not seed prepared area. Cell-O-Seed must be installed with paper side down.
2. Begin by excavating a 8" (15 cm) deep X 8" (15 cm) wide trench along the edge of the rock/concrete/articulated concrete block (ACB) low flow channel liner. Unroll the RECPs along the soil surface and then flip the RECPs over onto the rock/concrete/ACB low flow channel liner. After flipping the RECPs over (the RECPs topside is exposed when blanket is unrolled must invert so this side is against ACB/concrete surface, only for rolls placed at base of side slopes), extend one end of the RECP into the anchor trench. Anchor the blanket with a row of staples/stakes approximately 12" (30 cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to compacted soil and fold remaining RECPs back over seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12" (30 cm) apart across the width of the RECPs.
3. At the beginning of the channel excavate a 8" (15 cm) deep X 8" (15 cm) wide anchor trench and secure the RECPs into the trench with approximately 12" (30 cm) of material extended beyond the trench. Anchor the RECPs with a row of staples/stakes approximately 12" (30 cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to compacted soil and fold remaining RECPs back over seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes spaced approximately 12" (30 cm) apart across the width of the RECPs.
4. All RECPs must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide. When using the DOT System(tm), staples/stakes should be placed through each of the colored dots corresponding to the appropriate staple pattern.
5. Place consecutive RECPs end over end (shingle style) with a 4" - 6" (10 cm - 15 cm) overlap. Use a double row of staples staggered 4" (10 cm) apart and 4" (10 cm) on center to secure RECPs.
6. Full length edge of the RECPs at top of side slopes must be anchored with a row of staples/stakes approximately 12" (30 cm) apart in a 8" (15 cm) deep X 8" (15 cm) wide trench. Backfill and compact the trench after stapling.
7. Adjacent RECPs must be overlapped approximately 2" - 5" (5 cm - 12.5 cm) (depending on blanket type) and stapled. To ensure proper seam alignment, place the edge of the overlapping RECPs (blanket being installed on top) even with the colored Seam Stitch(tm) on the RECP being overlapped.
8. In high flow channel applications, a staple check slot is recommended at 30 to 40 foot (9m - 12m) intervals. Use a double row of staples staggered 4" (10 cm) apart and 4" (10 cm) on center over entire width of the channel.
9. The terminal end of the RECPs must be anchored with a row of staples/stakes approximately 12" (30 cm) apart in a 8" (15 cm) deep X 8" (15 cm) wide trench. Backfill and compact the trench after stapling.
note: horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.
In loose soil conditions, the use of staple or stake lengths greater than 8" (15 cm) may be necessary to properly anchor the RECPs.

RECP & ROCK/ACB/CONCRETE INTERFACE



1. INSTALL BLANKETS USING APPROPRIATE STAPLE PATTERN AND ACCORDING TO APPLICATION REQUIREMENTS (I.E. SLOPE, CHANNEL, OR SHORELINE). CUT AN "X" PARALLEL TO PREDOMINANT FLOW DIRECTION THROUGH THE BLANKET USING SCISSORS OR UTILITY KNIFE. THE LENGTH OF CUTS SHOULD EXCEED THE DIAMETER OF THE PLANTS ROOT BALL BY APPROXIMATELY 12" (30cm) WITHOUT LIMITING PLANT PLACEMENT ACTIVITIES (I.E. PLANT ROOT BALL EQUALS 6" (15cm) CUT "X" 18 (46cm) IN LENGTH).

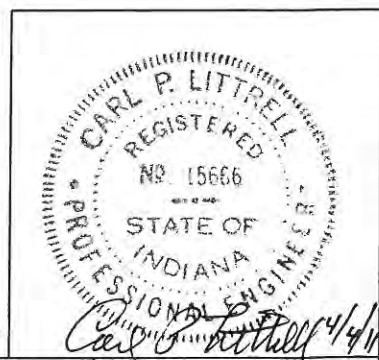
NOTE: IF PLANT ROOT BALL DOES NOT EXCEED 3" (8cm) IN DIAMETER THEN SIMPLY CUT A SINGLE CUT PARALLEL TO PREDOMINANT FLOW DIRECTION. THE CUT ONLY NEEDS TO EXCEED ROOT BALL DIAMETER BY APPROXIMATELY 6" (15cm).

CAUTION: DO NOT PLACE EXCAVATED SOIL FROM PLANTING PROCESS ON BLANKET. THIS MAY RESULT IN DAMAGE TO THE BLANKET AND REDUCED EROSION CONTROL PERFORMANCE.
2. AFTER PLACING PLANT AND REPLACING PREVIOUSLY REMOVED SOIL FOLD FLAPS OF BLANKET BACK INTO PLACE.
3. STAPLE/STAKE CUTS CLOSED STARTING AS CLOSE TO THE PLANT STEM AS POSSIBLE AND CONTINUE PLACING STAPLES EVERY 6" (15cm) WORKING OUTWARDS (SEE PLAN VIEW ABOVE).
4. CONTINUE PLACING STAPLES ALONG SEAM UNTIL ALL CUTS HAVE BEEN SECURELY FASTENED CLOSED (SEE DIAGRAM ABOVE).

NOTE: IN SOME INSTANCES ADDITIONAL BLANKET MAY BE REQUIRED TO PROTECT ALL EXPOSED SOIL DUE TO MOUNDING ASSOCIATED WITH PLANTS ROOT BALL INSTALLATION.

LIVE PLANT INSTALLATION THROUGH RECPS

NOTES:
* OR APPROVED EQUAL



No.	BY	DATE	REVISION	DATE
				1/12/2010
			DRAWN	RSG
			CHECKED	RAN
			APRVD	C.P.L.
			SCALE	
			NONE	



DEPARTMENT OF PUBLIC WORKS
CITY OF SOUTH BEND, INDIANA

DIVISION
<input checked="" type="checkbox"/> CIVIL
<input type="checkbox"/> TRAFFIC
<input type="checkbox"/> WATER
<input type="checkbox"/> WASTE WATER
<input type="checkbox"/>

POST CONSTRUCTION BMP'S

STANDARD DRAWING
SHEET NO.
ES-7



RULE 5 - NOTICE OF INTENT (NOI)

State Form 47487 (R6 / 2-15)
Indiana Department of Environmental Management
Office of Water Quality
Approved by State Board of Accounts, 2005

Type of Submittal (Check Appropriate Box): <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Amendment <input type="checkbox"/> Renewal
Permit Number:
(Note: The initial submittal does not require a permit number; the Department will assign a number. A permit number is required when filing an amendment, applying for renewal, or correspondence related to this permit).

Note: Submission of this Notice of Intent letter constitutes notice that the project site owner is applying for coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit Rule for Storm Water Discharges Associated with Construction Activity. Permitted project site owners are required to comply with all terms and conditions of the General Permit Rule 327 IAC 15-5 (Rule 5).

NAME AND LOCATION OF PROJECT			
Name of Project: One-Way to Two-Way Traffic Conversion of Main, Michigan, & St. Joseph Streets		County: St. Joseph County	
Brief Description of Project Location: Along Main, Michigan and St. Joseph Streets from Chippewa Avenue to LaSalle Avenue			
Project Location: Describe location in Latitude and Longitude (Degrees, Minutes, and Seconds or Decimal representation) and by legal description (Section, Township, and Range, Civil Township)			
Latitude: 41 deg 40 min 45 sec (North)		Longitude: 86 deg 15 min 02 sec (West)	
Quarter:	Section: 12,13,24	Township: 37 N	Range: 2 E Civil Township: Portage
Does <input checked="" type="checkbox"/> all or <input type="checkbox"/> part of this project lie within the jurisdictional boundaries of a Municipal Separate Storm Sewer System (MS4) as defined in 327 IAC 15-13? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, name the MS4(s): City of South Bend (INR040114) & St. Joseph County (INR040041)			
SITE OWNER OF PROJECT AND CONTACT INFORMATION OF PROJECT			
Name of Company (If Applicable): City of South Bend			
Name of Project Site Owner: (An Individual) Roger Nawrot		Title/Position: Asst. City Engineer	
Address: 227 West Jefferson Boulevard			
City: South Bend		State: Indiana	ZIP Code: 46601
Phone: (574) 235-9251	FAX: (574) 235-9171	E-Mail Address: (If Available) rnawrot@southbendin.gov	
Ownership Status (check one): Governmental Agency: <input type="checkbox"/> Federal <input type="checkbox"/> State <input checked="" type="checkbox"/> Local Non-Governmental: <input type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Other: (Explain)			
Contact Person: Patrick K. Wooden		Name of Company: (If Applicable) American Structurepoint, Inc.	
Affiliation to Project Site Owner: Consultant			
Address: (if different from above) 7260 Shadeland Station			
City: Indianapolis		State: Indiana	ZIP Code: 46256
Phone: (317) 547-5580	FAX: (317) 543-0270	E-Mail Address: (If Available) pwooden@structurepoint.com	
PROJECT INFORMATION			
Project Description: <input type="checkbox"/> Residential-Single Family <input type="checkbox"/> Residential-Multi-Family <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Other: (Explain) Roadway			
Name of Receiving Water: City of South Bend MS4 - Ultimate Receiving Water: St. Joseph River (Note: If applicable, name of municipal operator of storm sewer and the ultimate receiving water. If a retention pond is present on the property, the name of the nearest possible receiving water receiving discharge must be provided).			
Project Acreage Total Acreage: 82.4 Acres Proposed Land Disturbance: (in acres) 66.4 Acres Total Impervious Surface Area: (in square feet, estimated for completed project) 2,778,900sq ft			
Project Duration Estimated Start Date: February 2016 Estimated End Date for all Land Disturbing Activity: December 2016			

(Continued on Reverse Side)

CONSTRUCTION PLAN CERTIFICATION

By signing this Notice of Intent letter, I certify the following:

- A. The storm water quality measures included in the Construction Plan comply with the requirements of 327 IAC 15-5-6.5, 327 IAC 15-5-7, and 327 IAC 15-5-7.5;
- B. the storm water pollution prevention plan complies with all applicable federal, state, and local storm water requirements;
- C. the measures required under 327 IAC 15-5-7 and 327 IAC 15-5-7.5 will be implemented in accordance with the storm water pollution prevention plan;
- D. if the projected land disturbance is One (1) acre or more, the applicable Soil and Water Conservation District or other entity designated by the Department, has been sent a copy of the Construction Plan for review;
- E. storm water quality measures beyond those specified in the storm water pollution prevention plan will be implemented during the life of the permit if necessary to comply with 327 IAC 15-5-7; and
- F. implementation of storm water quality measures will be inspected by trained individuals.

In addition to this form, I have enclosed the following required information:

- Verification by the reviewing agency of acceptance of the Construction Plan.
- Proof of publication in a newspaper of general circulation in the affected area that notified the public that a construction activity is to commence, including all required elements contained in 327 IAC 15-5-5 (9). The Proof of Publication **Must** include company name and address, project name, address/location of the project, and the receiving stream to which storm water will be discharged. Following is a sample Proof of Publication:

"XERT Development Inc. (10 Willow Lane, Indianapolis, Indiana 46206) is submitting a Notice of Intent to the Indiana Department of Environmental Management of our intent to comply with the requirements of 327 IAC 15-5 to discharge storm water from construction activities associated with Water Garden Estates located at 24 Washout Lane, Indianapolis, Indiana 46206. Runoff from the project site will discharge to the White River. Questions or comments regarding this project should be directed to Walter Water of XERT Development Inc."

- \$100 check or money order payable to the Indiana Department of Environmental Management. A permit fee is required for all NOI submittals (initial and renewal). A fee is not required for amendments.

SITE OWNER OF PROJECT RESPONSIBILITY STATEMENT

By signing this Notice of Intent letter, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information or violating the provisions of 327 IAC 15-5, including the possibility of fine and imprisonment for knowing violations.

Printed Name of Project Owner: _____

Signature of Project Owner: _____ Date (month, day, year): _____

This Notice of Intent must be signed by an individual meeting the signatory requirements in 327 IAC 15-4-3(g). All NOI submittals must include an original signature (FAX and photo copies are not acceptable).

Note: Within 48 hours of the initiation of construction activity, the project site owner must notify the appropriate plan review agency and IDEM, Office of Water Quality of the actual project start date if it varies from the date provided above.

Note: A permit issued under 327 IAC 15-5 is granted by the commissioner for a period of five (5) years from the date coverage commences. Once the five (5) year permit term duration is reached, a general permit issued under this rule will be considered expired, and as necessary for construction activity continuation, a new Notice of Intent letter (Renewal) is required to be submitted ninety (90) days prior to the termination of coverage. The submittal must include the NOI Letter, Proof of Publication, Fee, and verification that the plan for the project was approved (original verification of plan approval is acceptable provided the scope of the project has not changed from the original submittal).

**Mail this form to: Indiana Department of Environmental Management
Storm Water Program, IGCN, Room 1255
100 North Senate Avenue
Indianapolis, IN 46204-2251**

327 IAC 15-5-6 (a) also requires a copy of the completed Notice of Intent letter be submitted to the local Soil and Water Conservation District or other entity designated by the Department, where the land disturbing activity is to occur.

Questions regarding the development or implementation of the Construction Plan/Storm Water Pollution Prevention Plan should be directed to the local county Soil and Water Conservation District (SWCD). If you are unable to reach the SWCD or have other questions please direct those inquiries to the IDEM Storm Water Permit Coordinator at 317/233-1864 or 800/451-6027 ext.3-1864. For information and forms visit <http://www.in.gov/idem/4896.htm> .

**CONSTRUCTION STORMWATER
POLLUTION PREVENTION PLAN**

For:

**City of South Bend
ONE-WAY TO TWO-WAY TRAFFIC CONVERSION OF MAIN,
MICHIGAN, & ST. JOSEPH STREETS**

**Prepared by:
American Structurepoint, Inc.
7260 Shadeland Station
Indianapolis, Indiana 46256**

December 2015

**CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN
ONE-WAY TO TWO-WAY TRAFFIC CONVERSION**

INDEX

Item	Description	Location
A1	PLAN INDEX	incorporated herein
A2	11" X 17" PLAT	2
A3	PROJECT NARRATIVE	2
A4	VICINITY MAP	2
A5	LEGAL DESCRIPTION OF PROJECT SITE	2
A6	LOCATION OF PROPOSED SITE IMPROVEMENTS	2
A7	HYDROLOGIC UNIT CODE	2
A8	STATE AND FEDERAL WATER QUALITY PERMITS	2
A9	SPECIFIC POINT WHERE STORMWATER DISCHARGE WILL LEAVE THE SITE ...	3
A10	LOCATION AND NAME OF ALL WETLANDS, LAKES, AND WATERCOURSES ON AND ADJACENT TO THE SITE	3
A11	IDENTIFICATION OF ALL RECEIVING WATERS	3
A12	IDENTIFICATION OF ALL POTENTIAL DISCHARGES TO GROUNDWATER.....	3
A13	100-YEAR FLOODPLAINS, FLOODWAYS, AND FLOODWAY FRINGES	3
A14	PRECONSTRUCTION AND POST-CONSTRUCTION ESTIMATE OF PEAK DISCHARGE	4
A15	ADJACENT LAND USE	4
A16	LOCATIONS AND APPROXIMATE BOUNDARIES OF ALL DISTURBED AREAS	4
A17	IDENTIFICATION OF EXISTING VEGETATIVE COVER	4
A18	SOILS MAP, INCLUDING SOIL DESCRIPTIONS AND LIMITATIONS	4
A19	LOCATIONS, SIZE, AND DIMENSIONS OF PROPOSED STORMWATER SYSTEMS	4
A20	PLANS FOR ANY OFF-SITE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT	5
A21	LOCATIONS OF PROPOSED SOIL STOCKPILES AND/OR BORROW/DISPOSAL AREAS	5
A22	EXISTING SITE TOPOGRAPHY	5
A23	PROPOSED FINAL SITE TOPOGRAPHY	5
B1	DESCRIPTION OF POTENTIAL POLLUTANT SOURCES ASSOCIATED WITH CONSTRUCTION ACTIVITIES	5
B2	SEQUENCE DESCRIBING STORMWATER QUALITY MEASURE IMPLEMENTATION RELATIVE TO LAND DISTURBING ACTIVITIES.....	6

B3	STABLE CONSTRUCTION ENTRANCE LOCATIONS AND SPECIFICATIONS.....	7
B4	SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS.....	7
B5	SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS.....	8
B6	STORM SEWER INLET PROTECTION MEASURE LOCATIONS AND SPECIFICATIONS.....	8
B7	RUNOFF CONTROL MEASURES.....	8
B8	STORMWATER OUTLET PROTECTION SPECIFICATIONS.....	8
B9	GRADE STABILIZATION STRUCTURE LOCATIONS AND SPECIFICATIONS.....	8
B10	LOCATION, DIMENSIONS, SPECIFICATIONS, AND CONSTRUCTION DETAILS OF EACH STORMWATER QUALITY MEASURE.....	8
B11	TEMPORARY SURFACE STABILIZATION METHODS APPROPRIATE FOR EACH SEASON.....	9
B12	PERMANENT SURFACE STABILIZATION SPECIFICATIONS.....	9
B13	MATERIAL HANDLING AND SPILL PREVENTION PLAN.....	9
B14	MONITORING AND MAINTENANCE GUIDELINES FOR EACH PROPOSED STORMWATER QUALITY MEASURE.....	11
B15	EROSION AND SEDIMENT CONTROL SPECIFICATIONS FOR INDIVIDUAL BUILDING LOTS.....	12
C1	DESCRIPTION OF POLLUTANTS AND THEIR SOURCES ASSOCIATED WITH THE PROPOSED LAND USE.....	12
C2	SEQUENCE DESCRIBING STORMWATER QUALITY MEASURE IMPLEMENTATION.....	13
C3	DESCRIPTION OF PROPOSED POST CONSTRUCTION STORMWATER QUALITY MEASURES.....	13
C4	LOCATION, DIMENSIONS, SPECIFICATIONS, AND CONSTRUCTION DETAILS OF EACH STORMWATER QUALITY MEASURE.....	13
C5	DESCRIPTION OF MAINTANENCE GUIDELINES FOR POST-CONSTRUCTION STORMWATER QUALITY MEASURES.....	13

APPENDICES

- EXHIBIT A – PLAT NO. 1 (11” x 17”)
- EXHIBIT B – NATIONAL WETLANDS INVENTORY - WETLANDS MAP
- EXHIBIT C – FLOOD INSURANCE MAPS
- EXHIBIT D – NRCS SOIL SURVEY
- EXHIBIT E – STORM WATER, EROSION, AND SEDIMENT CONTROL INSPECTION REPORT

SITE NAME

The area scheduled for construction is known as “One-Way to Two-Way Traffic Conversion of Main, Michigan, & St. Joseph Streets” (hereinafter referred to as the “Project”).

PROJECT LOCATION

The project is located on Main and Michigan Streets in South Bend, IN from Chippewa Avenue to LaSalle Avenue. In the downtown area, work will follow St. Joseph Street. The latitude is 41°40’45” north and the longitude is 86° 15’ 02” west.

USE OF STANDARDS

Wherever a number reference is given, the number refers to the applicable portion of the Indiana Department of Transportation (INDOT) standard specifications. In addition, INDOT standard drawings and recurring special provisions have been referenced throughout this Stormwater Pollution Prevention Plan (SWPPP). All INDOT standards can be found on their website at <http://www.in.gov/dot/div/contracts/standards>. The 2015 INDOT Storm Water Management Field Guide (hereinafter referred to as INDOT Field Guide) and the IDEM Stormwater Quality Manual have also been referenced in this document.

OWNER’S INFORMATION

Name: City of South Bend
Address: 227 West Jefferson Boulevard, South Bend, Indiana 46601
Representative: Roger Nawrot, PE
Title: Asst. City Engineer
Telephone: (574) 235-9251

OPERATOR’S INFORMATION

Same as above.

NOTICE OF INTENT

All parties defined as owners or operators must submit a Notice of Intent (NOI) at least 48 hours prior to commencement of on-site construction activities. Submittal of late NOI’s is not prohibited; however, authorization under the construction general permit is only for discharges occurring after permit coverage is granted. Unpermitted discharges may be subject to enforcement actions by the Environmental Protection Agency (EPA). For the purposes of this permit, an operator is defined as any party meeting either of the following requirements.

- a) The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications.

- b) The party has day-to-day operational control of those activities at a project necessary to ensure compliance with a stormwater pollution prevention plan for the site or other permit conditions.

A2 11" X 17" PLAT

The property owners and boundaries are located on the Plat Sheets (Exhibit A) and Plan Sheets (Sheets 41-52) of the construction plans.

A3 PROJECT NARRATIVE

The project involves roadway rehabilitation; consisting of HMA pavement, curb and gutter, landscaping, lighting, signals, minor stormsewer, pavement markings and signage, and ADA compliant sidewalks and curb ramps. Any utility in conflict with the proposed construction will be relocated as necessary. This roadway is intended to be an upgrade of existing conditions to benefit all pedestrians, cyclists, and vehicles. This SWPPP is intended to be for the road construction and does not include any land disturbance not contained within the project limits of the roadway.

A4 VICINITY MAP

A portion of the St. Joseph County map in the vicinity of the project and a copy of the State of Indiana map are shown on the title sheet of the construction plans.

A5 LEGAL DESCRIPTION OF PROJECT SITE

The project is located in Sections 12, 13, and 24, Township 37 North, Range 2 East, Portage Township, in St. Joseph County, Indiana.

A6 LOCATION OF PROPOSED SITE IMPROVEMENTS

The locations of the roadway construction items are shown on the plan sheets (Sheets 41-52), intersection detail sheets (Sheets 55-72), landscaping detail sheets (Sheets 116-124) and the traffic signal detail sheets (Sheets 125-158) of the construction plans.

A7 HYDROLOGIC UNIT CODE

04050001240030 – St. Joseph River – Auten Ditch
04050001240040 – St. Joseph River – Airport

A8 STATE AND FEDERAL WATER QUALITY PERMITS

No state or federal water quality permits will be required as part of this project.

A9 SPECIFIC POINT WHERE STORMWATER DISCHARGE WILL LEAVE THE SITE

Storm water along Main, Michigan and St. Joseph Streets will sheet flow either to the new or existing curb line. Generally, where a new curb line is proposed, new drainage structures have been proposed to collect the runoff. In locations where the existing curb line is to remain in place, existing inlets will collect runoff. Once collected by existing inlets, it shall be conveyed via the existing sewer network to an offsite location. Sheet flow collected by proposed inlets (where new curb and gutter is proposed) will flow through proposed pipes connecting ultimately to the existing storm sewer network. Existing Storm sewer network falls under the jurisdiction of the City of South Bend MS4 and the St. Joseph County MS4. See the plan sheets (Sheets 41-52) and the intersection detail sheets (Sheets 55-72) of the construction plans.

A10 LOCATION AND NAME OF ALL WETLANDS, LAKES, AND WATERCOURSES ON AND ADJACENT TO THE SITE

The National Wetlands Inventory does not show any wetlands or lakes within the vicinity of the project. See Appendix B.

A11 IDENTIFICATION OF ALL RECEIVING WATERS

The storm water will be collected by the City's existing storm sewer networks. Existing storm sewer network falls under the jurisdiction of the City of South Bend MS4 and the St. Joseph County MS4. The ultimate receiving water will be the St. Joseph River either directly or via Auten Ditch.

A12 IDENTIFICATION OF ALL POTENTIAL DISCHARGES TO GROUNDWATER

Stormwater discharge during construction may include oil, fuel, and other vehicular fluids that may discharge directly to the groundwater via sump areas. See Section B1 for additional information regarding potential discharges.

A13 100-YEAR FLOODPLAINS, FLOODWAYS, AND FLOODWAY FRINGES

A portion of the project lies within the 100-year floodplain. This is for the portion of the project where Bowman Creek crosses Main St. and Michigan St. (approximately between the Eckman St. intersection and the Bowman St. intersection). See Appendix C for the FIRM maps for St. Joseph County, City of South Bend and incorporated areas (18141C0192D, 18141C0194D, 18141C0211D, 18141C0213D).

A14 PRECONSTRUCTION AND POST-CONSTRUCTION ESTIMATE OF PEAK DISCHARGE

The site currently discharges via sheet flow to inlets tying into stormsewer. For this project the amount of existing hard scape features (mainly pavement) will be reduced; therefore the total runoff C value will be reduced from pre-construction to post construction. Existing pavement will be replaced with “soft” scape features such as permeable paving blocks for parking, permeable decorative brick, sodding as well as various landscaping features (trees, shrubs, etc.)

A15 ADJACENT LAND USE

The adjacent land use is primarily residential and commercial, entirely within an urbanized environment.

A16 LOCATIONS AND APPROXIMATE BOUNDARIES OF ALL DISTURBED AREAS

The construction limits serve as the limit for disturbed areas. The construction limits for the project are shown on the plan sheets (Sheets 41-52) and the intersection detail sheets (Sheets 55-72) of the construction plans.

A17 IDENTIFICATION OF EXISTING VEGETATIVE COVER

The majority of existing vegetative cover is consistent with an urban area. This vegetation includes some landscaping features, such as grass lawns, trees, and bushes. The downtown district is mainly all sidewalk outside of the road way.

A18 SOILS MAP, INCLUDING SOIL DESCRIPTIONS AND LIMITATIONS

All soils information was obtained from the NRCS Web Soil Survey for St. Joseph County (<http://websoilsurvey.nrcs.usda.gov/app/>). This site contains the following soils: Urban land Morocco complex (UgaA), Urban land Tyner complex (UgvA), Urban land Hilldale complex (UhmB), Urban land Hillsdale-Tracy complex (UhpC), Urban land Tracy complex (UmwB and UmwC), and Urban land Troxel complex (UmxA).

Soft, loose, and other unsuitable soils will be removed in accordance with 203.09 and replaced with engineered fill in accordance with 211. In locations of full depth pavement replacement in addition to removing the unsuitable materials, the roadbed will be strengthened utilizing Subgrade Treatment, Type IB in accordance with 207.04. NRCS Soil Survey is included in Appendix D.

A19 LOCATIONS, SIZE, AND DIMENSIONS OF PROPOSED STORMWATER SYSTEMS

The proposed pipe structures are detailed on the plan sheets (Sheets 41-52) and the intersection detail sheets (Sheets 55-72). Detailed structure information, including size and length of pipe and invert elevations are shown in the structure data tables (Sheets 211-216). Detailed specifications for installation are found in 715 and 720; product specifications are found in 907 and 908.

A20 PLANS FOR ANY OFF-SITE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT

Utility relocations and other work, as specified, may be completed coincident to, or in conjunction with, this project. Should these works include a land disturbance of greater than one acre, a separate Rule 5 shall be submitted for these works by the utilities.

A21 LOCATIONS OF PROPOSED SOIL STOCKPILES AND/OR BORROW/DISPOSAL AREAS

Stockpiling of selected materials shall be in accordance with 212 and as directed by the Engineer. The location of any soil stockpiles shall be determined by the Contractor. The Contractor is directed to provide specific information regarding the location of borrow or disposal areas to the Indiana Department of Environmental Management (IDEM) Wet Weather Section prior to establishing the stockpiles. Information that shall be provided is listed in 203.08. See section 205 for additional details.

A22 EXISTING SITE TOPOGRAPHY

Refer to the typical sections (Sheets 3-7), the plan sheets (Sheets 41-52) and the intersection detail sheets (Sheets 55-72) of the construction plans.

A23 PROPOSED FINAL SITE TOPOGRAPHY

Refer to the typical sections (Sheets 3-7), the plan sheets (Sheets 41-52) and the intersection detail sheets (Sheets 55-72) of the construction plans.

B1 DESCRIPTION OF POTENTIAL POLLUTANT SOURCES ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Pollutant sources that may be associated with construction activities on site include, but are not limited to, the following:

1. Exposed soils
2. Windblown dust
3. Leaking vehicles and equipment
4. Construction waste material
5. Fuel storage areas and fueling stations
6. Sanitary waste from temporary toilet facilities
7. Litter
8. Soil tracking off site from construction equipment
9. Material storage areas
10. Concrete wash out
11. Demolition debris
12. Fertilizers and pesticides

Construction materials that may be staged or stored on site at various points during development of the site include, but are not limited to, the following:

1. Structural fill
2. Road base
3. Aggregate for stable construction entrance
4. Pipe Materials
5. Precast concrete structures
6. Underdrain materials and geotextiles
7. Signing and lighting materials

Right-of-way clearing shall be performed, as needed, to remove any objects, such as trees, shrubs, etc., considered obstructions, as shown on the plans. Clearing shall be conducted in accordance with 201.03. The act of clearing and removing of obstructions may result in unintentional ground disturbances that may, in turn, result in the possibility of sediment removal from the site. Little right-of-way acquisition is required for this project. Locations of right-of-way clearing are typically existing sidewalk or lawn. The Contractor shall monitor surface stabilization throughout the removal process and implement measures necessary to maintain appropriate surface stabilization as required. Any areas left undisturbed for more than 7 days shall be stabilized by the use of temporary seeding and/or sodding, as directed in section 205.

The Contractor is responsible for all construction activities and the pollutants associated with them, as well as their remediation in accordance with 108.04. The Contractor is directed to submit an amended erosion control plan to the St. Joseph County Soil and Water Conservation District and the project owner prior to earthmoving activities.

B2 SEQUENCE DESCRIBING STORMWATER QUALITY MEASURE IMPLEMENTATION RELATIVE TO LAND DISTURBING ACTIVITIES

The following is a generic sequence of operations. The contractor is required to submit a plan for sequence of operations and implementation of erosion control measures following awarding of the contract. Due to construction phasing, the sequence outlined below may be repeated for each phase.

1. Install temporary erosion control measures appropriate for stable construction entrance construction and right-of-way clearing
2. Install construction entrances and perimeter controls
3. Site clearing
4. Install temporary erosion control measures in disturbed areas (i.e. silt fence)
5. All storm water outlets should be stabilized with permanent or interim measures prior to conducting flows.
6. Install staging areas, material storage areas, and fueling stations and protection measures
7. Begin existing pavement removal

8. Begin pipe installations
9. Install temporary erosion control measures within 7 days, or temporary seed disturbed areas if the areas are to be undisturbed for more than 7 days
10. Complete subgrade operations
11. Paving / curb and gutter operations
12. Install inlet protection measures in new inlets
13. Install lighting, signals, and signs
14. Final grade, seed, and sod

The Contractor may be required to adjust the proposed erosion control plan as needed for the construction phasing of the project. The Contractor is required to submit a plan for their sequence of operations and implementation of erosion control measures following awarding of the contract to the Engineer and the St. Joseph County SWCD.

B3 STABLE CONSTRUCTION ENTRANCE LOCATIONS AND SPECIFICATIONS

The location(s) of the construction entrance(s) for the Contractor, all subcontractors, employees, and vehicles shall be determined by the Contractor. The stable construction entrance shall be constructed as directed in the special provisions. If an area of existing roadway is to be used, the Contractor shall maintain the roadway and the area around it for conformance to the requirements stipulated in 108.04 and 205.03. See ISWQM Chapter 7 and INDOT Field Guide (pages 106-109) for details and good practices.

B4 SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS

Anticipated sheet flow areas are limited to the areas between the curb and sidewalk in the proposed locations. All disturbed areas shall be temporarily seeded during construction, if left undisturbed for more than 7 calendar days, and permanently stabilized upon completion of the final grade. Silt fence is located beyond the toe of slopes where sediment may be washed from the right-of-way. Vegetation beyond construction limits is not to be disturbed. See the erosion control tables (Sheets 205-207) in the construction plans for locations.

B5 SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS

Concentrated flow areas will occur in the gutter areas of the roadway. The Contractor shall be responsible for providing appropriate curb inlet protection for the existing inlets prior to conducting work and for the proposed inlets after installation. The Contractor is instructed to protect all curb inlets from sediment during construction using INDOT approved methods in accordance with 205.05. Refer to Standard Drawings E 205-TECI-01 through E 205-TECI-06 for details. Locations for installation of inlet protection are shown on the erosion control tables (Sheets 205-207) of the constructions plans.

B6 STORM SEWER INLET PROTECTION MEASURE LOCATIONS AND SPECIFICATIONS

The Contractor shall provide curb inlet protection for each of the existing inlets prior to their removal. Once the proposed inlets have been installed, they shall be protected by using approved INDOT methods in accordance with 205.07. Refer to Standard Drawings E 205-TECI-01 through E 205-TECI-06 for details. Locations for installation of inlet protection are shown on the erosion control tables (Sheets 205-207) of the constructions plans.

B7 RUNOFF CONTROL MEASURES

Stormwater runoff will be controlled by temporary seeding, if disturbed ground is left undisturbed more than 7 calendar days. Existing vegetative buffers will be maintained along disturbed areas. Temporary seeding shall be done in accordance with 205.04 and 621.

B8 STORMWATER OUTLET PROTECTION SPECIFICATIONS

There are no proposed or existing storm water outlets within the limits of this project.

B9 GRADE STABILIZATION STRUCTURE LOCATIONS AND SPECIFICATIONS

No grade stabilization structures are required for this project. However, it is the responsibility of the Contractor to notify the engineer of any areas appearing to be eroding so adequate grade stabilization measures may be employed.

B10 LOCATION, DIMENSIONS, SPECIFICATIONS, AND CONSTRUCTION DETAILS OF EACH STORMWATER QUALITY MEASURE

All temporary erosion control measures shall be installed and maintained in accordance with 205 and the applicable standard drawings and material specifications contained within the INDOT standard specifications. All temporary erosion control measures are shown on the erosion control tables (Sheets 205-207) of the constructions plans.

Silt fence shall be installed in accordance with standard drawing E 205-TECP-02. The materials shall be in accordance with 918.

Inlet protection measures should be in accordance with 205.05. See Standard Drawings E 205-TECI-01 through E 205-TECI-06.

B11 TEMPORARY SURFACE STABILIZATION METHODS APPROPRIATE FOR EACH SEASON

Surface stabilization measures include permanent seeding all areas within 7 days. If the final grade has not been achieved within 7 days and will remain undisturbed, temporary seed shall be applied to all areas that will be left are defined in Section 205.04.

B12 PERMANENT SURFACE STABILIZATION SPECIFICATIONS

Seeding, sodding, or other landscaping features shall be placed in all areas that will not be paved or are not proposed multi-use paths or sidewalks and are within the construction limits. The seed mixtures and sod shall be in accordance with 914 and shall be applied in accordance with 621. All incidentals including ground preparation, fertilizing, and mulching shall be in accordance with 621. Seed mixtures and sod shall be placed within seven days of final grade. See landscaping detail sheets (Sheets 116-124) for additional details about proposed permanent surface stabilization.

B13 MATERIAL HANDLING AND SPILL PREVENTION PLAN

Materials handling and prevention plans shall be the responsibility of the Contractor. If an environmental spill occurs, the Contractor shall notify IDEM (888-233-7745) immediately.

Materials Handling and Spill Prevention

Materials should be stored in a manner that prevents or minimizes the chance a spill will reach soils, groundwater, or surface water. Materials stored inside shall be placed in a manner to prevent a spill from migrating outside the confines of the building or into any drain leaving the building and discharging to soils, groundwater, or surface water.

If a spill does occur, then the spill must be contained immediately utilizing appropriate response techniques, including diking and absorbents. Clean up of the spill should occur as soon as possible once the spill is stabilized and contained. Spills shall be cleaned up using acceptable methods, such as absorbents on impervious surfaces or removal of contaminated soils. In all cases, cleanup standards must adhere to local, state, and federal requirements. Failure to clean up any spill is a violation of the Indiana State Spill Rule (327 IAC 2-6.1), which is enforced by IDEM. Certain spills must be reported to the local response agency, Local Emergency Planning Committee, and/or IDEM. Initial calls should be made to the 911 system if the spill exceeds reportable quantities or is a threat to public safety. IDEM, which can be contacted at (888) 233-7745, can typically assist with information on cleanup operations or clean up contractors.

All spills that occur near an inlet to the storm water conveyance system must have “curbing” implemented immediately. “Curbing” is the use of a barrier (absorbent material) that prevents the spill from making contact with the storm water conveyance system or storm water runoff.

Spill prevention starts with preplanning. A spill prevention and control plan should be developed and utilized prior to any emergency. This plan should be shared with all employees and reviewed annually.

Solid Waste Disposal

No solid material, including construction materials, is permitted to be discharged to surface waters or buried on site. All solid waste materials, including disposable materials incidental to the construction activities, must be collected in containers or closed dumpsters. The collection containers must be emptied periodically and the collected material hauled to a landfill permitted by the state and/or appropriate local municipality to accept the waste for disposal.

Hazardous Waste

Whenever possible, minimize the use of hazardous materials and generation of hazardous wastes. All hazardous waste materials shall be disposed in the manner specified by federal, state, or local regulations, or by the manufacturer.

Chemicals, paints, solvents, fertilizers, and other toxic or hazardous materials should be stored in their original containers. (If original container is not resealable, store the products in clearly labeled, waterproof containers.) Except during application, the containers should be kept in trucks or in bermed areas within covered storage facilities. Runoff containing such materials shall be collected, removed from the site, and disposed of in accordance with federal, state, and local regulations.

As may be required by federal, state, or local regulations, the Contractor shall have a Hazardous Materials Management Plan and/or Hazardous Materials Spill and Prevention Program in place. The location of any hazardous material storage areas shall be included in the amended storm water pollution prevention plan prepared by the Contractor prior to the start of construction.

Equipment Fueling and Storage Areas

Equipment fueling, maintenance, and cleaning shall only be done in protected areas (i.e., bermed area). Leaking equipment and maintenance fluids shall be collected and not allowed to discharge onto soil where they may be washed away during a rain event. A spill kit and appropriate signage are required for these areas.

Equipment wash down (except for wheel washes) shall take place within an area surrounded by a berm. The use of detergents is prohibited.

Dust Control/Off-Site Vehicle Tracking

During construction, water trucks shall be used, as needed, by each Contractor or subcontractor to reduce dust. After construction, the site shall be stabilized to reduce dust.

Construction traffic shall enter and exit the site at a construction entrance with a rock pad or equivalent device. The purpose of the rock pad is to minimize the amount of soil and mud tracked onto existing streets. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts. See B3 for additional construction entrance requirements.

Sanitary/Septic

Contractors and subcontractors must comply with all state and local sanitary sewer, portable toilet, or septic system regulations. Sanitary facilities shall be provided at the site by each Contractor or subcontractor throughout construction activities. The sanitary facilities shall be utilized by all construction personnel and serviced regularly. All expenses associated with providing sanitary facilities are the responsibility of the contractors and subcontractors. The location of any sanitary facilities shall be indicated on the Stormwater Pollution Prevention Plan.

Water Source

Water used to establish and maintain grass, to control dust, and for other construction purposes must originate from a public water supply or private well approved by the state or local health department.

B14 MONITORING AND MAINTENANCE GUIDELINES FOR EACH PROPOSED STORMWATER QUALITY MEASURE

The monitoring and maintenance of all temporary erosion control measures shall be in accordance with 205.07 and the recurring special provision 108-C-192d, "Storm Water, Erosion, and Sediment Control Inspection Report" (Exhibit E). Regular inspections of all erosion control measures shall occur at least once weekly. In addition to regular inspections of the measures, a post event inspection shall occur within 24 hours of each 0.5-inch storm event. Contractor shall notify the St. Joseph County SWCD with name and contact information for the Trained Individual responsible for implementation of the SWPPP.

Construction Entrance

Locations where vehicles exit the site shall be inspected for evidence of off-site sediment tracking.

Material Storage Inspection

Inspectors must evaluate areas used for storage of materials exposed to precipitation to ensure materials are protected and/or impounded so pollutants cannot discharge from storage areas.

Material Handling and Spill Prevention

Discharge of hazardous substances or oil into storm water is subject to reporting requirements. In the event of a spill, the Contractor is required to notify IDEM at (888)-233-7745 to properly report the spill. In addition, the Contractor shall submit a written description of the release, per 327 IAC 2-6.1-7(4), including type and amount of materials released, date of release, circumstances, and steps taken to prevent future spills, to the Indiana Department of Environmental Management and to the St. Joseph County Soil and Water Conservation District.

Notice of Termination

Compliance of the site with the NOI remains the responsibility of the Contractor and sub-contractors until such time as a Notice of Termination (NOT) has been submitted and approved by the St. Joseph County SWCD. The owner will submit the NOT once all construction activities have been completed and final approval has been granted to the Contractor.

B15 EROSION AND SEDIMENT CONTROL SPECIFICATIONS FOR INDIVIDUAL BUILDING LOTS

No individual building lots are associated with this project.

C1 DESCRIPTION OF POLLUTANTS AND THEIR SOURCES ASSOCIATED WITH THE PROPOSED LAND USE

The proposed land use is a public roadway. The pollutants and sources of each pollutant normally expected from this type of land use are listed below.

Pollutant Source: Pedestrians, passenger vehicles, delivery vehicles, and trucks

Type of Pollutant: Oil, gasoline, diesel fuel, any hydrocarbon associated with vehicular fuels and lubricants, grease, antifreeze, windshield cleaner solution, brake fluid, brake dust, rubber, glass, metal and plastic fragments, grit, road de-icing materials, and litter and other trash. In addition, the use of fertilizers and insecticides are likely for the residential and commercial landscaping.

C2 SEQUENCE DESCRIBING STORMWATER QUALITY MEASURE IMPLEMENTATION

The Contractor shall implement permanent erosion control measures as soon as it is practical. Permanent seeding, sodding, or landscaping feature shall occur when the disturbed area is at final grade. Once the project has been completed and before final approval of the project, the Contractor shall inspect all previously installed measures for compliance with the recurring special provision 108-C-192d (Exhibit E), standard specifications, and construction plans. The Contractor shall remove any built-up sediment deposits and repair any measures that have failed, including reseeding or sodding any areas where surface runoff has removed the previously installed measure.

All disturbed ground shall be temporarily seeded if it is left undisturbed for more than 7 calendar days, and any additional seeding or sodding shall be completed when the project is substantially complete.

C3 DESCRIPTION OF PROPOSED POST CONSTRUCTION STORMWATER QUALITY MEASURES

Sod, seed, or other landscaping feature shall be used to re-establish vegetation in disturbed areas that are not to be paved for permanent stormwater quality measures and be placed in accordance with 621. These buffer areas will help filter pollutants prior to entering the storm sewer system. See landscaping detail sheets (Sheets 116-124) for additional details about proposed landscaping.

C4 LOCATION, DIMENSIONS, SPECIFICATIONS, AND CONSTRUCTION DETAILS OF EACH STORMWATER QUALITY MEASURE

Details of the storm water quality measures are located in the construction plans, standard specifications, standard drawings, and special provisions.

C5 DESCRIPTION OF MAINTANENCE GUIDELINES FOR POST-CONSTRUCTION STORMWATER QUALITY MEASURES

The City of South Bend Engineering Department will be responsible for maintaining all areas along the roadway and within the right-of-way.

Routine inspections of all area inlets will be inspected for sediment build-up around and within the inlet.

Suggested maintenance measures include regular mowing and litter pick up along the roadway, sediment removal from inlets, and reconstruction of areas of significant erosion

EXHIBIT E
STORM WATER, EROSION, AND SEDIMENT CONTROL
INSPECTION REPORT

Part B: Additional Quantities or Additional BMPs Needed				
Any additional control quantities or new BMPs not shown on the SWPPP must be approved by the PE/PS. If multiple locations are involved, identify the exact location of each addition. Justification for the measure must be provided.				
BMP Type (see table on page 3)	Approximate Station		Survey Line: Left, Right or centerline	Description/Justification for the additional BMPs Along with description provide image filename here for any reference pictures provided.
	From	To		

Part C: Temporarily or Permanently Suspended Construction Activities				
Where construction activities (grading, excavating, embankment filling, or other land disturbing activities have been suspended either temporarily or permanently, describe why stabilization measures were not initiated within 7 days.				
BMP Type (see table on page 3)	Approximate Station		Survey Line: Left, Right or centerline	Description Along with description provide image filename here for any reference pictures provided.
	From	To		

Part D: Compliance Evaluation (check only one)	
<input type="checkbox"/>	With the maintenance and improvement actions noted, the areas inspected will meet the intent of the Erosion and Sediment Control Plan and INDOT contract documents and specifications related to temporary erosion and sediment control.
<input type="checkbox"/>	The areas inspected are not meeting the intent and are in potential noncompliance with the Erosion and Sediment Control Plan and/or INDOT contract documents and specifications related to temporary erosion and sediment control. There is off site sedimentation and/or a high potential for off-site sedimentation on this project. (If this box is checked, complete the following "Part E: Potential Noncompliance Issues" section of this form)

Part E: Potential Noncompliance Issues				
BMP Type (see table on page 3)	Approximate Station		Survey Line: Left, Right or centerline	Describe the potential noncompliance issue(s) e.g. failure to adequately inspect the project, repeated failure of a BMP, failure to install a required BMP, a visible off-site discharge of material (silt, sand, oily water, etc.), or potential off-site discharges or potential failures.
	From	To		

Part F: Inspection Certification

I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete.

Inspector Name Printed: _____ Company: _____ Title: _____ Date: _____

Inspector Signature: _____

If evaluating an inspection performed by another inspector, please check one of the following boxes:

I concur with the inspector I do not concur with the inspector (please circle any findings that you do not agree with)

Owner Representative Name: _____ Signature: _____

Date: _____

A permanent copy must be filed with the project records and be provided to INDOT or IDEM personnel according to requirements or upon request.

Table of Types of Erosion and Sediment Control Best Management Practices (BMPs)

1	Diversion Interceptor	8	Check Dam, Traversable	15	Filter Berm	22	Concrete Washout
2	Temporary Seeding	9	Slope Drain	16	Filter Sock	23	Secondary Spill Containment
3	Permanent Sod or Seed	10	Splash Pad	17	Turbidity Curtain	24	
4	Mulch (hydraulic or bonded fiber mulch)	11	Sediment Trap	18	Surface Roughening	25	
5	Straw Mulch (blown/laid)	12	Sediment Basin	19	Vegetative Filter Strip	26	
6	Manufactured Surface Protection Products	13	Retention Pond	20	Inlet Protection	27	
7	Check Dam	14	Silt Fence	21	Construction entrance/exit	28	

- cc: Prime Contractor Superintendent (add Prime Contractor Owner/President when appropriate)
 INDOT Project Engineer (add INDOT Area Engineer when appropriate)
 INDOT District E&SC Specialist (add INDOT Central Office E&SC Specialist when appropriate)

Instructions for the Contractor's representative: Fill out this document completely including filling out the Project Information, Areas Inspected and Parts A, B, C, D, E and F the day of your field investigation and put it on file for the project. Submit the signed document to the INDOT project representative the same day. Always provide pictures to document site conditions observed in your report.

Instructions for INDOT's representative:

- When you receive a completed and signed inspection report as completed by the contractor, visit the site within 24 hours of receipt of the contractor's inspection to verify the contractor's findings. If you concur with the contractor's inspection, fill out part F and sign as the INDOT representative. If you don't concur with the contractor's inspection, fill out parts E, F and circle any areas where you believe the inspection misrepresented the site's state of compliance with the intent of INDOT standards. If possible, provide pictures to document site conditions observed. Upon completion, sign under Part F, put it on file with the project and copy the prime contractor's representative.
- If you are completing this as an evaluation of an INDOT project without regard to the contractor's inspection, fill out all parts of the form including part D, E and sign as the inspector in part F. Always provide pictures to document site conditions observed in your report. Provide a copy to the INDOT PE/PS for the project and the Area Engineer. It is recommended that the inspection report be provided to the contractor immediately for their information (not their concurrence). It is also recommended another INDOT rep. visit the site within 24 hours to verify the inspection for their records and sign concurrence or non-concurrence in Part F.

Additional Explanation:

- Part A – Only put BMPs in Part A that were deemed to be in need of maintenance or alteration. Do not provide a list of every BMP inspected on the project. The intent is to document only those which were deemed in need of maintenance or alteration in order to continue to meet the intent of the measure at the location.
- Part B – Only put additional BMPs not yet installed on the project site in Part B. These can be BMPs intended for a different construction phase of the project or BMPs planned for other areas of the project that make sense to be deployed at additional locations. This is also where recommendations of measures would occur that identify new BMPs not in the contract documents.
- Part C – This is a list of known bare/exposed areas of the project and the justification why they are remaining bare or exposed during the review period despite a lack of construction activities. This especially includes any areas that are or are planned to be exposed for greater than 7 days without immediate plans to stabilize.
- Part D – Checking that the project is not in compliance with the intent of INDOT standards indicates that despite the additional maintenance measures and BMPs, the project's oversight is failing to ensure that sediment is prevented from leaving the project site or has the potential to leave the project site.
- Part E – List principles of storm water or erosion and sediment control that appear to be lacking on the project which demonstrate the lack of oversight of the project by qualified personnel.
- Part F – The "I certify" signature of the inspector is important in order to document whose opinion is being provided by the filling out of this form.

**RULE 5 - NOTICE OF INTENT (NOI)**

State Form 47487 (R5 / 10-05)
 Indiana Department of Environmental Management
 Office of Water Quality
 Approved by State Board of Accounts, 2005

Type of Submittal (Check Appropriate Box):

 Initial Amendment Renewal

Permit Number:

(Note: The initial submittal does not require a permit number; the Department will assign a number. A permit number is required when filing an amendment, applying for renewal, or correspondence related to this permit).

Note: Submission of this Notice of Intent letter constitutes notice that the project site owner is applying for coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit Rule for Storm Water Discharges Associated with Construction Activity. Permitted project site owners are required to comply with all terms and conditions of the General Permit Rule 327 IAC 15-5 (Rule 5).

Project Name and Location

Project Name:

Roundabout Intersection at Marion, Michigan & Main Streets

County:

St. Joseph

Brief Description of Project Location:

This project involves the conversion of existing one-way roadways (Michigan Street and Main Street) into two-way roadways with a road diet and inclusion of a roundabout intersection where Michigan and Main Streets intersect with Marion Street in the City of South Bend.

Project Location: Describe location in Latitude and Longitude (Degrees, Minutes, and Seconds or Decimal representation) and by legal description (Section, Township, and Range, Civil Township)

Latitude:

41° 40' 54" N

Longitude:

86° 15' 04" W

Quarter: Section: 1, 12 Township: 37-N Range: 2-E Civil Township: Portage

Does all or part of this project lie within the jurisdictional boundaries of a Municipal Separate Storm Sewer System (MS4) as defined in 327 IAC 15-13? Yes No If yes, name the MS4(s):

City of South Bend (INR040114)

Project Site Owner and Project Contact Information

Company Name (If Applicable):

City of South Bend

Project Site Owner's Name: (An Individual)

Corbitt Kerr

Title/Position:

Engineer

Address:

227 W. Jefferson Blvd. #1316

City:

South Bend

State:

IN

ZIP Code:

46601

Phone:

(574) 235-9251

FAX:

E-Mail Address: (If Available)

Ownership Status (check one):

Governmental Agency: Federal State Local Non-Governmental: Public Private Other: (Explain)

Contact Person:

Jack Stocks, P.E., CPESC

Company Name: (If Applicable)

United Consulting

Affiliation to Project Site Owner:

Consultant

Address: (if different from above)

1625 N. Post Road

City:

Indianapolis

State:

IN

ZIP Code:

46219

Phone:

(317) 895-2585

FAX:

(317) 895-2596

E-Mail Address: (If Available)

jack.stocks@ucindy.com

Project Information

Project Description:

Residential-Single Family Residential-Multi-Family Commercial Industrial Other: (Explain) Road Construction

Name of Receiving Water:

Storm sewers operated by the City of South Bend --> St. Joseph River

(Note: If applicable, name of municipal operator of storm sewer and the ultimate receiving water. If a retention pond is present on the property, the name of the nearest possible receiving water receiving discharge must be provided).

Project Acreage

Total Acreage: 7.6

Proposed Land Disturbance: (in acres) 7.6

Total Impervious Surface Area: (in square feet, estimated for completed project) 300,000

Project Duration

Estimated Start Date: March 2016

Estimated End Date for all Land Disturbing Activity: December 2016

(Continued on Reverse Side)

Construction Plan Certification

By signing this Notice of Intent letter, I certify the following:

- A. The storm water quality measures included in the Construction Plan comply with the requirements of 327 IAC 15-5-6.5, 327 IAC 15-5-7, and 327 IAC 15-5-7.5;
- B. the storm water pollution prevention plan complies with all applicable federal, state, and local storm water requirements;
- C. the measures required under 327 IAC 15-5-7 and 327 IAC 15-5-7.5 will be implemented in accordance with the storm water pollution prevention plan;
- D. if the projected land disturbance is One (1) acre or more, the applicable Soil and Water Conservation District or other entity designated by the Department, has been sent a copy of the Construction Plan for review;
- E. storm water quality measures beyond those specified in the storm water pollution prevention plan will be implemented during the life of the permit if necessary to comply with 327 IAC 15-5-7; and
- F. implementation of storm water quality measures will be inspected by trained individuals.

In addition to this form, I have enclosed the following required information:

- Verification by the reviewing agency of acceptance of the Construction Plan.
- Proof of publication in a newspaper of general circulation in the affected area that notified the public that a construction activity is to commence, including all required elements contained in 327 IAC 15-5-5 (9). The Proof of Publication **Must** include company name and address, project name, address/location of the project, and the receiving stream to which storm water will be discharged. Following is a sample Proof of Publication:

"XERT Development Inc. (10 Willow Lane, Indianapolis, Indiana 46206) is submitting a Notice of Intent to the Indiana Department of Environmental Management of our intent to comply with the requirements of 327 IAC 15-5 to discharge storm water from construction activities associated with Water Garden Estates located at 24 Washout Lane, Indianapolis, Indiana 46206. Runoff from the project site will discharge to the White River. Questions or comments regarding this project should be directed to Walter Water of XERT Development Inc."

- \$100 check or money order payable to the Indiana Department of Environmental Management. A permit fee is required for all NOI submittals (initial and renewal). A fee is not required for amendments.

Project Site Owner Responsibility Statement

By signing this Notice of Intent letter, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information or violating the provisions of 327 IAC 15-5, including the possibility of fine and imprisonment for knowing violations.

Printed Name of Project Owner: Corbitt Kerr

Signature of Project Owner: _____ Date: _____

This Notice of Intent must be signed by an individual meeting the signatory requirements in 327 IAC 15-4-3(g). All NOI submittals must include an original signature (FAX and photo copies are not acceptable).

Note: Within 48 hours of the initiation of construction activity, the project site owner must notify the appropriate plan review agency and IDEM, Office of Water Quality of the actual project start date if it varies from the date provided above.

Note: A permit issued under 327 IAC 15-5 is granted by the commissioner for a period of five (5) years from the date coverage commences. Once the five (5) year permit term duration is reached, a general permit issued under this rule will be considered expired, and as necessary for construction activity continuation, a new Notice of Intent letter (Renewal) is required to be submitted ninety (90) days prior to the termination of coverage. The submittal must include the NOI Letter, Proof of Publication, Fee, and verification that the plan for the project was approved (original verification of plan approval is acceptable provided the scope of the project has not changed from the original submittal).

**Mail this form to: Indiana Department of Environmental Management
Cashiers Office - Mail Code 50-10C
100 North Senate Avenue
Indianapolis, IN 46204-2251**

327 IAC 15-5-6 (a) also requires a copy of the completed Notice of Intent letter be submitted to the local Soil and Water Conservation District or other entity designated by the Department, where the land disturbing activity is to occur.

Questions regarding the development or implementation of the Construction Plan/Storm Water Pollution Prevention Plan should be directed to the local county Soil and Water Conservation District (SWCD). If you are unable to reach the SWCD or have other questions please direct those inquiries to the IDEM Rule 5 Coordinator at 317/233-1864 or 800/451-6027 ext.3-1864.

For information and forms visit: <http://www.in.gov/idem/permits/water/wastewater/wetwthr/storm/rule5.html>

Construction/Stormwater Pollution Prevention Plan Technical Review and Comment (Form 1)

Project Information	Project Name: Roundabout at Marion, Michigan, & Main Streets	County: St. Joseph
	Plan Submittal Date: 10/26/15	Hydrologic Unit Code: 4050001240040
	Project Location Description: Michigan and Main Streets and Marion Street	
	Latitude and Longitude N 41deg 40'54", W 86 deg 15' 04"	
	Civil Township: Portage	Quarter: SW/NW Section: 1 & 12 Township: 37N Range: 2E
	Project Owner Name: City of South Bend, Dept. of Public Works, Div. of Engineering	
	Contact: Corbitt Kerr	
	Address: 227 W. Jefferson Blvd., Room 1316	
	City: South Bend	State: IN Zip: 46601
	Phone: 574-235-9351	FAX: 574-235-9171 E-Mail: pckerr@southbendin.gov
Plan Preparer Name:		
Affiliation: United Consulting, Inc.		
Address: 1625 Post Road		
City: Indianapolis	State: IN Zip: 46219	
Phone: 317-895-2585	FAX: 317-985-2596 E-Mail:	

Plan Review	Review Date: 11/25/15	
	Principal Plan Reviewer: Sarah Longenecker	
	Agency: St. Joseph County Soil & Water Conservation District	
	Address: 2903 Gary Dr.	
	City: Plymouth	State: IN Zip: 46563
	Phone: 574-936-2024 x 4	FAX:
Assisted By: n/a		

<input checked="" type="checkbox"/>	PLAN IS ADEQUATE: A comprehensive plan review has been completed and it has been determined that the plan satisfies the minimum requirements and intent of 327 IAC 15-5.
<input checked="" type="checkbox"/>	Please refer to additional information included on the following page(s).
<input checked="" type="checkbox"/>	Submit Notice of Intent (NOI): Attach a copy of this cover page when submitting the NOI to the Indiana Department of Environmental Management. Construction activities may begin 48 hours following the submittal of the NOI. A copy of the NOI must also be sent to the Reviewing Authority (e.g. SWCD, DNR).
<input type="checkbox"/>	A preliminary plan review has been completed; a comprehensive review will not be completed within the 28-day review period. The reviewing authority reserves the right to perform a comprehensive review at a later date and revisions to the plan may be required at that time to address deficiencies.
<input type="checkbox"/>	Please refer to additional information included on the following page(s).
<input type="checkbox"/>	Submit Notice of Intent (NOI): Attach a copy of this cover page when submitting the NOI to the Indiana Department of Environmental Management. Construction activities may begin 48 hours following the submittal of the NOI. A copy of the NOI must also be sent to the Reviewing Authority (e.g. SWCD, DNR).
<input type="checkbox"/>	PLAN IS DEFICIENT: Significant deficiencies were identified during the plan review.
<input type="checkbox"/>	Please refer to additional information included on the following page(s).
<input type="checkbox"/>	DO NOT file a Notice of Intent for this project.
<input type="checkbox"/>	DO NOT commence land disturbing activities until all deficiencies are adequately addressed, the plan re-submitted, and notification has been received that the minimum requirements have been satisfied.
<input type="checkbox"/>	Plan Revisions <input type="checkbox"/> Deficient Items should be mailed or delivered to the Principal Plan Reviewer identified in the Plan Review Section above.

Construction/Storm water Pollution Prevention Plan - Technical Review and Comment (Form 1)

Project Name: Roundabout at Marion, Michigan, & Main Streets
Date Reviewed: 11/25/15

The technical review and comments are intended to evaluate the completeness of the Construction/Storm Water Pollution Prevention Plan for the project. The Plan submitted was not reviewed for the adequacy of the engineering design. All measures included in the plan, as well as those recommended in the comments should be evaluated as to their feasibility by a qualified individual with structural measures designed by a qualified engineer. The Plan has not been reviewed for other local, state, or federal permits that may be required to proceed with this project. Additional information, including design calculations may be requested to further evaluate the Plan.

All proposed storm water pollution prevention measures and those referenced in this review must meet the design criteria and standards set forth in the "Indiana Storm Water Quality Manual" from the Indiana Department of Environmental Management or similar Guidance Documents.

Please direct questions and/or comments regarding this plan review to:
 Sarah Longenecker
Please refer to the address and contact information identified in the Plan Review Section on page 1.

Assessment of Construction Plan Elements (Section A)

The Construction Plan Elements are adequately represented to complete a plan review:
 Yes **No**

The items checked below are deficient and require submittal to meet the requirements of the rule.

A		A	
<input type="checkbox"/>	1 Index showing locations of required Plan Elements	<input type="checkbox"/>	2 11 by 17 inch plat showing building lot numbers/boundaries and road layout/names
<input type="checkbox"/>	3 Narrative describing the nature and purpose of the project	<input type="checkbox"/>	4 Vicinity map showing project location
<input type="checkbox"/>	5 Legal Description of the Project Site (Include Latitude and Longitude - NOI Requirement)	<input type="checkbox"/>	6 Location of all lots and proposed site improvements (roads, utilities, structures, etc.)
<input type="checkbox"/>	7 Hydrologic unit code (14 Digit)	<input type="checkbox"/>	8 Notation of any State or Federal water quality permits
<input type="checkbox"/>	9 Specific points where storm water discharge will leave the site	<input type="checkbox"/>	10 Location and name of all wetlands, lakes and water courses on and adjacent to the site
<input type="checkbox"/>	11 Identification of all receiving waters	<input type="checkbox"/>	12 Identification of potential discharges to ground water (abandoned wells, sinkholes, etc.)
<input type="checkbox"/>	13 100 year floodplains, floodways, and floodway fringes	<input type="checkbox"/>	14 Pre-construction and post construction estimate of Peak Discharge (10 Year storm event)
<input type="checkbox"/>	15 Adjacent landuse, including upstream watershed	<input type="checkbox"/>	16 Locations and approximate boundaries of all disturbed areas (Construction Limits)
<input type="checkbox"/>	17 Identification of existing vegetative cover	<input type="checkbox"/>	18 Soils map including soil descriptions and limitations
<input type="checkbox"/>	19 Locations, size and dimensions of proposed storm water systems (e.g. pipes, swales and channels)	<input type="checkbox"/>	20 Plans for any off-site construction activities associated with this project (sewer/water tie-ins)
<input type="checkbox"/>	21 Locations of proposed soil stockpiles and/or borrow/disposal areas	<input type="checkbox"/>	22 Existing site topography at an interval appropriate to indicate drainage patterns
<input type="checkbox"/>	23 Proposed final topography at an interval appropriate to indicate drainage patterns		

Construction/Stormwater Pollution Prevention Plan - Technical Review and Comment (Form 1)

Project Name: Roundabout at Marion, Michigan, & Main Streets
Date Reviewed: 11/25/15

Assessment of Stormwater Pollution Prevention Plan (Sections B & C)

Stormwater Pollution Prevention Plan - Construction Component (Section B)

Adequate	Deficient	Not Applicable	B	
				<i>The construction component of the Stormwater Pollution Prevention Plan includes stormwater quality measures to address erosion, sedimentation, and other pollutants associated with land disturbance and construction activities. Proper implementation of the plan and inspections of the construction site are necessary to minimize the discharge of pollutants. The Project Site Owner should be aware that unforeseen construction activities and weather conditions may affect the performance of a practice or the effectiveness of the plan. The plan must be a flexible document, with provisions to modify or substitute practices as necessary.</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		1 Description of potential pollutant sources associated with construction activities
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2 Sequence describing stormwater quality measure implementation relative to land disturbing activities
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3 Stable construction entrance locations and specifications (at all points of ingress and egress)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		4 Sediment control measures for sheet flow areas
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 Sediment control measures for concentrated flow areas
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		6 Storm sewer inlet protection measure locations and specifications
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		7 Runoff control measures (e.g. diversions, rock check dams, slope drains, etc.)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		8 Storm water outlet protection specifications
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		9 Grade stabilization structure locations and specifications
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		10 Location, dimensions, specifications, and construction details of each stormwater quality measure
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		11 Temporary surface stabilization methods appropriate for each season (include sequencing)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		12 Permanent surface stabilization specifications (include sequencing)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		13 Material handling and spill prevention plan
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		14 Monitoring and maintenance guidelines for each proposed stormwater quality measure
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		15 Erosion & sediment control specifications for individual building lots

Stormwater Pollution Prevention Plan - Post Construction Component (Section C)

Adequate	Deficient	Not Applicable	C	
				<i>The post construction component of the Stormwater Pollution Prevention Plan includes the implementation of stormwater quality measures to address pollutants that will be associated with the final landuse. Post construction stormwater quality measures should be functional upon completion of the project. Long term functionality of the measures are critical to their performance and should be monitored and maintained.</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		1 Description of pollutants and their sources associated with the proposed land use
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2 Sequence describing stormwater quality measure implementation
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		3 Description of proposed post construction stormwater quality measures (Include a written description of how these measures will reduce discharge of expected pollutants)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		4 Location, dimensions, specifications, and construction details of each stormwater quality measure
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 Description of maintenance guidelines for post construction stormwater quality measures

Construction/Stormwater Pollution Prevention Plan - Technical Review and Comment

Project Name: Roundabout at Marion, Michigan, & Main Streets

Date Reviewed: 11/25/15

You may send the Notice of Intent (NOI), proof of publication, and \$100 IDEM fee to the following address: IDEM, Storm Water Program, IGCN, Room 1255, 100 N. Senate Avenue, MC 50-10C, Indianapolis, IN 46204-2251. Within 48 hours of the start of construction, please notify Sarah Longenecker of the St. Joseph County SWCD ((574)936-2024, Ext. 4) of the actual project start date.

SECTION A

1 – PLAN INDEX

See page i of this plan.

2 – PLAT SHEETS

See Plat No. 1 in the Plans.

3 – PROJECT DESCRIPTION

This project involves converting the existing one-way traffic on both Michigan Street and Main Street into two-way traffic. This intersection improvement project will serve as the transition between a two-way, four (or five) lane section along Michigan Street to the north and two-way, three lane sections along both Michigan Street and Main Street, replacing the traffic signals located along Marion Street at Michigan Street and Main Street with a roundabout intersection.

Drainage along the project will maintain existing patterns, with all of stormwater emptying to existing combined and separate storm sewers operated by the City. New inlets will be placed along the proposed curbs to help manage spread widths. Grass swales leading to inlets will be constructed in locations where the elevation of the sidewalk is lower than the curb. The total area to be disturbed by the project is approximately 7.64 acres.

4 – VICINITY MAP

Refer to Appendix A and see Title Sheet pg. 1.

5 – LEGAL DESCRIPTION OF PROJECT SITE

The referenced project is located at the intersection of Marion Street, Michigan Street, and Main Street in the City of South Bend in St. Joseph County, Portage Township, Township 37 North, Range 2 East, within Sections 1 and 12. Latitude is 41°40'54" North. Longitude is 86°15'04" West.

6 – PROPOSED SITE IMPROVEMENTS

Proposed improvements include the conversion of one-way roadways into two-way roadways with a road diet and inclusion of a roundabout intersection. See Plan and Profile Sheets, Construction Details, and Intersection Details in the Plans.

7 – HYDROLOGIC UNIT CODE

This project lies within one watershed with a 14 Digit Hydrologic Unit Code of 04050001240040.

8 – WATER QUALITY PERMITS

Water quality related permits for this project include: IDEM Rule 5 Permit.

9 – STORMWATER DISCHARGE

All stormwater from this project discharges into existing storm and combined sewers operated by the City of South Bend. Stormwater leaves the project site as follows (see Plan and Profile Sheets in the Plans for these locations):

- 1) 36” combined sewer under Michigan St. flows north beyond project limits at Sta. 46+42 Line “B”
- 2) 12” storm sewer under Michigan St. flows north beyond project limits at Sta. 46+42 Line “B”
- 3) 18” storm sewer under Madison St. flows west beyond project limits at Sta. 46+48 Line “A”
- 4) 21” combined sewer under Main St. flows north beyond project limits at Sta. 61+14 Line “PR-D”

10 – WETLANDS, LAKES, AND WATER COURSES

There are no wetlands within the project limits. Based on the City of South Bend GIS and USGS South Bend West topographical map, the St. Joseph River is located approximately 300 ft to the east of the project limits. This project will not impact the St. Joseph River.

11 – RECEIVING WATERS

Stormwater from this project empties into storm sewers operated by the City of South Bend. The ultimate receiving water is the St. Joseph River.

12 – POTENTIAL DISCHARGE TO GROUND WATER

There are two known wells, DNR Well ID 57098 & 57099, located at 41°40’49.7”N, 86°15’01.1”W, at the intersection of Michigan St. and Madison St. where storm water could potentially enter the groundwater. According to the DNR Water Well Database the year on record is dated at 1960, so it is unknown whether these wells are still in use.

13 – 100 YEAR FLOODPLAINS, FLOODWAYS, AND FLOODWAY FRINGES

See Appendix B for the FEMA Flood map. This project lies outside any 100 year floodplains, floodways or floodway fringes of the St. Joseph River.

14 – PRE AND POST CONSTRUCTION PEAK DISCHARGE

The following information is an estimate of peak discharge using the Rational Method for a 10yr storm. Due to the proposed road diet for Michigan Street and Main Street, there is a decrease in impervious area for the project.

$$\begin{aligned} \text{Total Area Disturbed} &= 332,680 \text{ ft}^2 \\ C_{\text{paved}} &= 0.85, C_{\text{unpaved}} = 0.10 \text{ (IDM Fig.202-2E)} \\ T_C &= 5 \text{ min (min. start to outlet)} \quad I = 7.16 \text{ in/hr (South Bend IDF Table)} \end{aligned}$$

$$\begin{aligned} \text{Pre-Construction Paved Area} &= 259,630 \text{ ft}^2 \\ \text{Pre-Construction Unpaved Area} &= 73,050 \text{ ft}^2 \\ \text{Pre-Construction } C_{\text{weighted}} &= 0.69 \\ \text{Pre-Construction Discharge} &= \mathbf{37.74 \text{ ft}^3/\text{s}} \end{aligned}$$

$$\begin{aligned} \text{Post Construction Paved Area} &= 237,170 \text{ ft}^2 \\ \text{Post Construction Unpaved Area} &= 95,510 \text{ ft}^2 \\ \text{Post Construction } C_{\text{weighted}} &= 0.63 \\ \text{Post Construction Discharge} &= \mathbf{34.46 \text{ ft}^3/\text{s}} \end{aligned}$$

15 – ADJACENT LAND USE

The land use along Michigan and Main Streets is predominantly commercial use.

16 – LOCATIONS / BOUNDARIES OF DISTURBED AREAS

See Construction Limits in the Construction Details in the Plans.

17 – EXISTING VEGETATIVE COVER

The vegetative cover along Michigan and Main Streets is predominantly grass adjacent to the sidewalk, with some landscaping areas. See Construction Details in the Plans.

18 – SOILS MAP

The soils within the construction limits are categorized as Urban land – Tyner complex. For a complete breakdown of this soil type, see Appendix C.

19 – PROPOSED STORMWATER SYSTEMS

See Plan and Profile Sheets and Construction Details in the Plans.

20 – OFF-SITE CONSTRUCTION ACTIVITIES

There are no off-site construction activities required as part of this project.

21 – PROPOSED STOCKPILE, BORROW AND DISPOSAL AREAS

It is left up to the contractor to determine the locations of additional borrow areas or soil stockpiles per INDOT Standard Specification 203.08. See Appendix F.

22 – EXISTING SITE TOPOGRAPHY

See Appendix D, the existing ground profile on the Plan and Profile Sheets in the Plans and the existing cross sections.

23 – PROPOSED FINAL TOPOGRAPHY

See the proposed ground profile on the Plan and Profile Sheets and the proposed cross sections. The Plans also contain a Roundabout Grading Plan showing final topography for the proposed intersection.

SECTION B

1 – POTENTIAL CONSTRUCTION POLLUTANT SOURCES

These pollutants include, but are not limited to, garbage, debris, packaging material, paint, solvent, fuel, oil, and other pollutants associated with leaking vehicles and equipment.

2 – CONSTRUCTION SEQUENCE

In all cases, stormwater quality measure implementation shall be as early in the construction process as possible. Specifically, inlet protection and silt fence shall be installed prior to any land disturbing activities. Inlet protection for the swales will be installed as grading is completed. Temporary seeding shall be placed in disturbed areas that are expected to be undisturbed for over 7 days. Upon completion of construction the temporary erosion control measures will be removed. A defined construction sequence is to be submitted to the Rule 5 Coordinator and Engineer by the Contractor per INDOT Standard Specification 108.04. For further information, see the erosion control measures detailed in the Construction Details and Appendix F.

3 – CONSTRUCTION ENTRANCES

The location of a construction entrance shall be covered in the Erosion Control plan submitted to the Engineer and the IDEM Rule 5 Coordinator by the Contractor per INDOT Standard Specification 108.04. See Appendix F for further information.

4 – SEDIMENT CONTROL FOR SHEET FLOW

Temporary Seeding and Silt Fence will be used outside of the pavement area. Silt Fence will be specifically used for the large grading area southwest of the proposed roundabout. See Construction Details in the Plans and Appendix G.

5 – SEDIMENT CONTROL FOR CONCENTRATED FLOW

Temporary Inlet Protection (filter bags) will be used for inlets in the swale areas of the project. See Construction Details in the Plans and Appendix G.

6 – STORM SEWER INLET PROTECTION

Filter bags, as detailed in City of South Bend Standard Drawings, will be used to protect inlets that are both within and outside the pavement area. See Construction Details in the Plans and Appendix G.

7 – RUNOFF CONTROL MEASURES

Grass swales will be constructed in locations where the elevation of the sidewalk is lower than the curb to contain runoff inside the project limits. See Plan and Profile Sheets and Construction Details in the Plans.

8 – STORMWATER OUTLET PROTECTION

N/A

9 – GRADE STABILIZATION

N/A

10 – LOCATION, DIMENSIONS, SPECIFICATIONS, AND PLAN AND PROFILE SHEETS OF STORM WATER QUALITY MEASURE

See Temporary Erosion & Sediment Control Table in the Plans for locations of each Temporary Inlet Protection and limits for the Temporary Silt Fence. Specifications and construction details will be as per Section 205 of the INDOT Standard Specifications and the applicable South Bend Standard Drawings. See Appendix F & G.

11 – TEMPORARY SURFACE STABILIZATION

Temporary Seed Mix shall be placed in disturbed areas that are expected to be undisturbed for over 7 days at an application rate of 150 lb. /ac using Seed Mixture T as described in section 205 of the INDOT Standard Specifications.

12 – PERMANENT SURFACE STABILIZATION

Sodding in accordance with Section 621 of the INDOT Standard Specifications, will be placed as soon as practical after the final grading operations.

13 – MATERIAL HANDLING AND SPILL PREVENTION PLAN

All construction materials to be used on this project site, including, but not limited to: lime stabilization materials, gasoline, diesel fuel, hydraulic fluid, lubricating oils, asphalt emulsions, and surface sealants are to be accompanied by their respective Material Safety Data Sheets. These sheets are to contain all necessary information relative to each specific material to insure proper handling and to provide spill prevention guidelines and mitigation procedures. All materials are to be handed in such a way as to minimize the potential of the material entering the storm water runoff. INDOT Standard Specification Section 108.04 requires that the Contractor submit a Material Handling and Spill Prevention Plan as part of an Erosion Control Plan. This plan shall include the IDEM Emergency Response telephone number (888-233-7745). In addition, the Contractor must follow proper concrete washout procedure in accordance with Section 205.07 of the INDOT Standard Specifications. See Appendix F.

14 – MONITORING AND MAINTENANCE GUIDELINES FOR POLLUTION PREVENTION MEASURES

Weekly and post-event inspections will be handled by an Erosion Control Supervisor assigned by the Contractor. Inspections shall be documented and records maintained and made available upon request per INDOT Recurring Special Provision 108-C-192d and section 108.04 of the INDOT Standard Specifications. See Appendix E & F.

15 – EROSION AND SEDIMENT CONTROL FOR BUILDING LOTS

N/A

SECTION C

1 – DESCRIPTION OF POST CONSTRUCTION POLLUTANTS

These pollutants include, but are not limited to, garbage, debris, packaging material, paint, solvent, fuel, oil, and other pollutants associated with leaking vehicles.

2 – SEQUENCE OF PERMANENT STORM WATER QUALITY MEASURES

In all cases, storm water quality measure implementation shall be as early in the construction process as possible. A more defined sequence is to be submitted to the Rule 5 coordinator and Engineer by the contractor per section 108.04 of the INDOT Standard Specifications. See Appendix F. All disturbed areas will be sodded upon completion of final grading.

3 – DESCRIPTION OF POST CONSTRUCTION STORM WATER QUALITY MEASURES

All disturbed ground outside the proposed pavement area will be sodded to prevent sediment runoff after construction.

4 – LOCATION, DIMENSIONS, SPECIFICATIONS, AND PLAN AND PROFILE SHEETS OF STORM WATER QUALITY MEASURES

Permanent sodding will be installed as shown on the Construction Plans per INDOT Standard Specifications.

5 – MAINTENANCE OF POST CONSTRUCTION STORM WATER QUALITY MEASURES

Permanent stabilization of all disturbed areas shall be installed as soon as possible following final grading of these areas and maintained by the contractor through the construction process. After construction is completed, the maintenance of this facility will be the responsibility of the City of South Bend. Surface repairs, drainage system cleaning, street sweeping and any other required maintenance operations will be done by the City of South Bend as the regular inspections find warranted.

Part B: Additional Quantities or Additional BMPs Needed				
Any additional control quantities or new BMPs not shown on the SWPPP must be approved by the PE/PS. If multiple locations are involved, identify the exact location of each addition. Justification for the measure must be provided.				
BMP Type (see table on page 3)	Approximate Station		Survey Line: Left, Right or centerline	Description/Justification for the additional BMPs Along with description provide image filename here for any reference pictures provided.
	From	To		

Part C: Temporarily or Permanently Suspended Construction Activities				
Where construction activities (grading, excavating, embankment filling, or other land disturbing activities) have been suspended either temporarily or permanently, describe why stabilization measures were not initiated within 7 days.				
BMP Type (see table on page 3)	Approximate Station		Survey Line: Left, Right or centerline	Description Along with description provide image filename here for any reference pictures provided.
	From	To		

Part D: Compliance Evaluation (check only one)				
<input type="checkbox"/>	With the maintenance and improvement actions noted, the areas inspected will meet the intent of the Erosion and Sediment Control Plan and INDOT contract documents and specifications related to temporary erosion and sediment control.			
<input type="checkbox"/>	The areas inspected are not meeting the intent and are in potential noncompliance with the Erosion and Sediment Control Plan and/or INDOT contract documents and specifications related to temporary erosion and sediment control. There is off site sedimentation and/or a high potential for off-site sedimentation on this project. (If this box is checked, complete the following "Part E: Potential Noncompliance Issues" section of this form)			

Part E: Potential Noncompliance Issues				
BMP Type (see table on page 3)	Approximate Station		Survey Line: Left, Right or centerline	Describe the potential noncompliance issue(s) e.g. failure to adequately inspect the project, repeated failure of a BMP, failure to install a required BMP, a visible off-site discharge of material (silt, sand, oily water, etc.), or potential off-site discharges or potential failures.
	From	To		

Part F: Inspection Certification

I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete.

Inspector Name Printed: _____ Company: _____ Title: _____ Date: _____

Inspector Signature: _____

If evaluating an inspection performed by another inspector, please check one of the following boxes:

I concur with the inspector I do not concur with the inspector (please circle any findings that you do not agree with)

Owner Representative Name: _____ Signature: _____

Date: _____

A permanent copy must be filed with the project records and be provided to INDOT or IDEM personnel according to requirements or upon request.

Table of Types of Erosion and Sediment Control Best Management Practices (BMPs)

1	Diversion Interceptor	8	Check Dam, Traversable	15	Filter Berm	22	Concrete Washout
2	Temporary Seeding	9	Slope Drain	16	Filter Sock	23	Secondary Spill Containment
3	Permanent Sod or Seed	10	Splash Pad	17	Turbidity Curtain	24	
4	Mulch (hydraulic or bonded fiber mulch)	11	Sediment Trap	18	Surface Roughening	25	
5	Straw Mulch (blown/laid)	12	Sediment Basin	19	Vegetative Filter Strip	26	
6	Manufactured Surface Protection Products	13	Retention Pond	20	Inlet Protection	27	
7	Check Dam	14	Silt Fence	21	Construction entrance/exit	28	

- cc: Prime Contractor Superintendent (add Prime Contractor Owner/President when appropriate)
 INDOT Project Engineer (add INDOT Area Engineer when appropriate)
 INDOT District E&SC Specialist (add INDOT Central Office E&SC Specialist when appropriate)

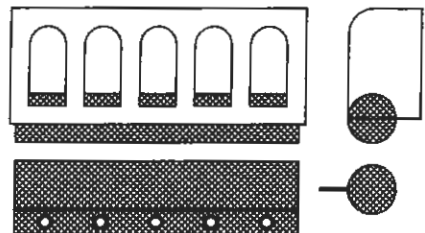
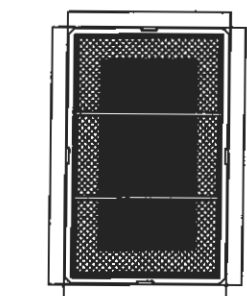
Instructions for the Contractor's representative: Fill out this document completely including filling out the Project Information, Areas Inspected and Parts A, B, C, D, E and F the day of your field investigation and put it on file for the project. Submit the signed document to the INDOT project representative the same day. Always provide pictures to document site conditions observed in your report.

Instructions for INDOT's representative:

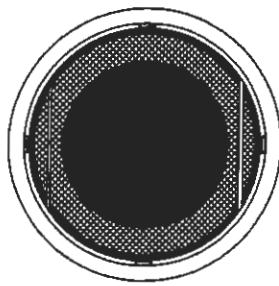
- When you receive a completed and signed inspection report as completed by the contractor, visit the site within 24 hours of receipt of the contractor's inspection to verify the contractor's findings. If you concur with the contractor's inspection, fill out part F and sign as the INDOT representative. If you don't concur with the contractor's inspection, fill out parts E, F and circle any areas where you believe the inspection misrepresented the site's state of compliance with the intent of INDOT standards. If possible, provide pictures to document site conditions observed. Upon completion, sign under Part F, put it on file with the project and copy the prime contractor's representative.
- If you are completing this as an evaluation of an INDOT project without regard to the contractor's inspection, fill out all parts of the form including part D, E and sign as the inspector in part F. Always provide pictures to document site conditions observed in your report. Provide a copy to the INDOT PE/PS for the project and the Area Engineer. It is recommended that the inspection report be provided to the contractor immediately for their information (not their concurrence). It is also recommended another INDOT rep. visit the site within 24 hours to verify the inspection for their records and sign concurrence or non-concurrence in Part F.

Additional Explanation:

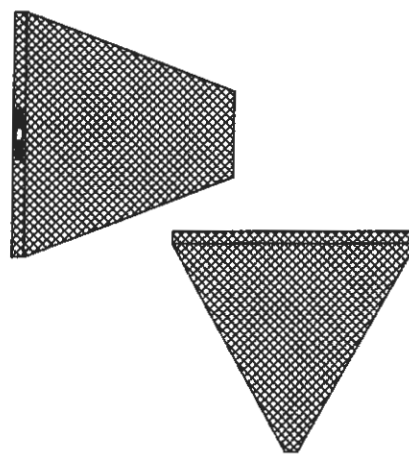
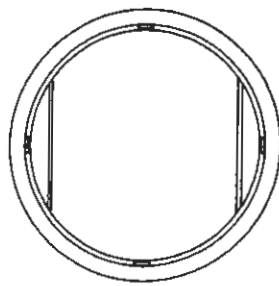
- Part A – Only put BMPs in Part A that were deemed to be in need of maintenance or alteration. Do not provide a list of every BMP inspected on the project. The intent is to document only those which were deemed in need of maintenance or alteration in order to continue to meet the intent of the measure at the location.
- Part B – Only put additional BMPs not yet installed on the project site in Part B. These can be BMPs intended for a different construction phase of the project or BMPs planned for other areas of the project that make sense to be deployed at additional locations. This is also where recommendations of measures would occur that identify new BMPs not in the contract documents.
- Part C – This is a list of known bare/exposed areas of the project and the justification why they are remaining bare or exposed during the review period despite a lack of construction activities. This especially includes any areas that are or are planned to be exposed for greater than 7 days without immediate plans to stabilize.
- Part D – Checking that the project is not in compliance with the intent of INDOT standards indicates that despite the additional maintenance measures and BMPs, the project's oversight is failing to ensure that sediment is prevented from leaving the project site or has the potential to leave the project site.
- Part E – List principles of storm water or erosion and sediment control that appear to be lacking on the project which demonstrate the lack of oversight of the project by qualified personnel.
- Part F – The "I certify" signature of the inspector is important in order to document whose opinion is being provided by the filling out of this form.



This detail depicts the typical placement of the HR (hydrocarbon removal) pillow. An HR pillow is hemmed to the entire perimeter of the sediment bag +/- 4" from the top of the bag and extends +/- 4" towards center. Curb boxes are protected with a separate pillow that is secured to either the curb box vanes or the top flange of the Catch-All frame.

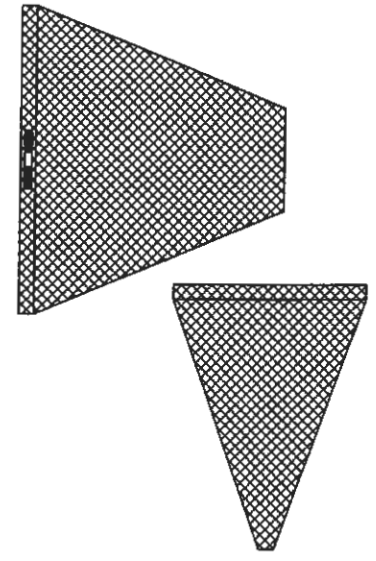


CATCH-ALL HR ABSORBENT PILLOW
PRE & POST CONSTRUCTION



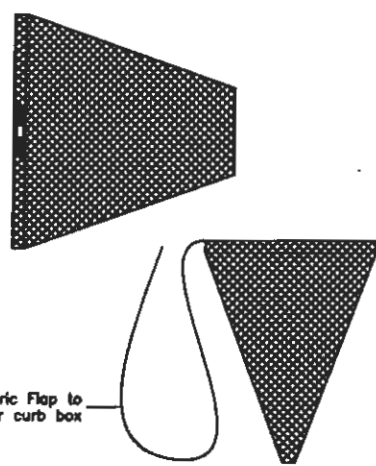
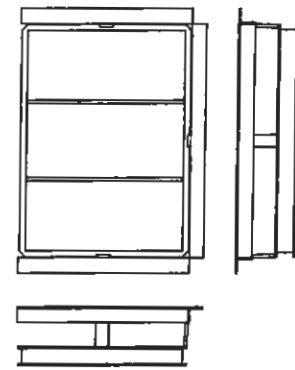
GENERAL NOTES:
FRAME: Top flange fabricated from 1 1/4"x1 1/4"x3/8" angle. Base rim fabricated from 1 1/2"x2 1/2"x3/8" channel. Handles and suspension brackets fabricated from 1 1/4"x3/4" flat stock. All steel conforming to ASTM-A36.
SEDIMENT BAG: Bag fabricated from 4 oz./sq.yd. non-woven polypropylene geotextile reinforced with polyester mesh. Bag secured to base rim with a stainless steel band and lock.

TYPICAL ROUND CATCH-ALL
PRE & POST CONSTRUCTION



GENERAL NOTES:
FRAME: Top flange fabricated from 1 1/4"x1 1/4"x3/8" angle. Base rim fabricated from 1 1/2"x2 1/2"x3/8" channel. Handles and suspension brackets fabricated from 1 1/4"x3/4" flat stock. All steel conforming to ASTM-A36.
SEDIMENT BAG: Bag fabricated from 4 oz./sq.yd. non-woven polypropylene geotextile reinforced with polyester mesh. Bag secured to base rim with a stainless steel band and lock.

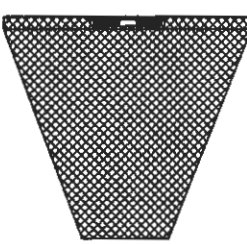
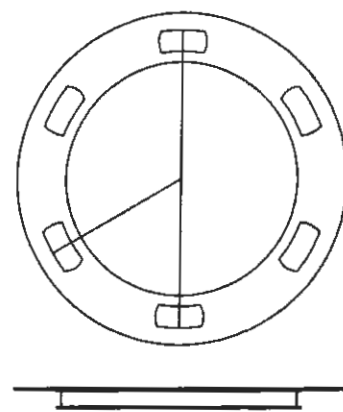
TYPICAL RECTANGULAR CATCH-ALL
PRE & POST CONSTRUCTION



Fabric Flap to cover curb box

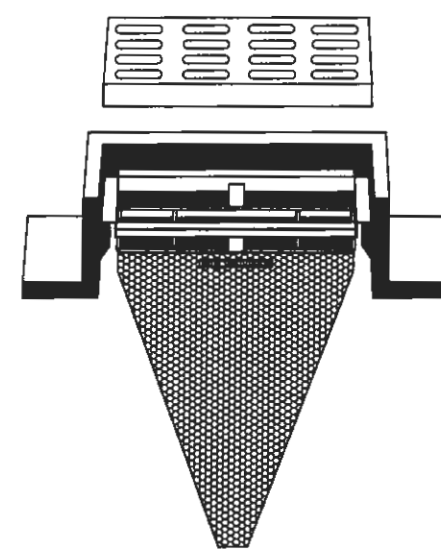
GENERAL NOTES:
FRAME: Top flange fabricated from 1 1/4"x1 1/4"x3/8" angle. Base rim fabricated from 1 1/2"x2 1/2"x3/8" channel. Handles and suspension brackets fabricated from 1 1/4"x3/4" flat stock. All steel conforming to ASTM-A36.
SEDIMENT BAG: Bag fabricated from 4 oz./sq.yd. non-woven polypropylene geotextile reinforced with polyester mesh. Bag secured to base rim with a stainless steel band and lock.

TYPICAL CURB BOX CATCH-ALL
PRE & POST CONSTRUCTION

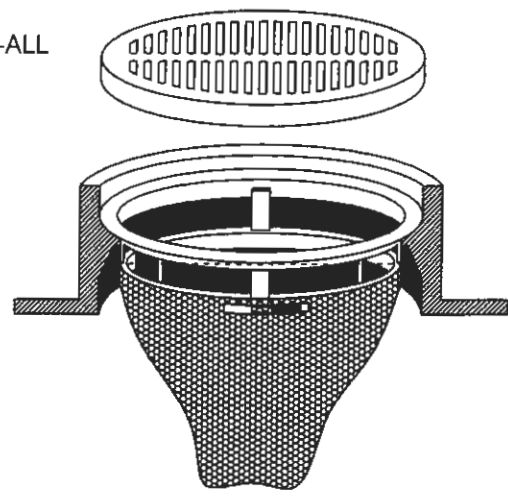


GENERAL NOTES:
FRAME: Top flange fabricated from 1 1/4"x1 1/4"x3/8" angle. Base rim fabricated from 1 1/2"x2 1/2"x3/8" channel. Handles and suspension brackets fabricated from 1 1/4"x3/4" flat stock. All steel conforming to ASTM-A36.
SEDIMENT BAG: Bag fabricated from 4 oz./sq.yd. non-woven polypropylene geotextile reinforced with polyester mesh. Bag secured to base rim with a stainless steel band and lock.

TYPICAL BEEHIVE CATCH-ALL
PRE & POST CONSTRUCTION

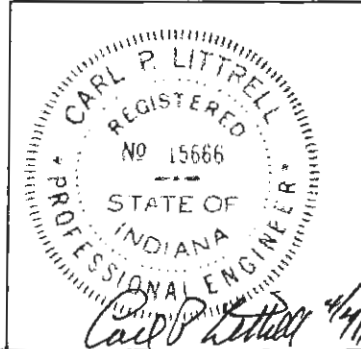


RECTANGULAR CASTING 3D CATCH-ALL
PRE & POST CONSTRUCTION



ROUND CASTING 3D CATCH-ALL
PRE & POST CONSTRUCTION

NOTES:
* OR APPROVED EQUAL



No.	BY	DATE	REVISION	DATE
		1/12/2010		
			DRAWN	RSG
			CHECKED	RAN
			APRVD	C.P.L.
			SCALE	NONE

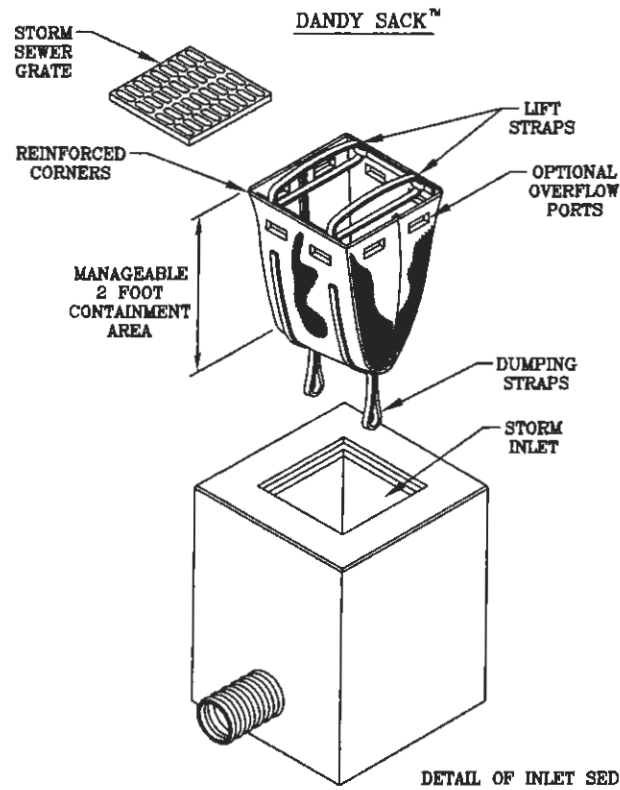


DEPARTMENT OF PUBLIC WORKS
CITY OF SOUTH BEND, INDIANA

DIVISION	
<input checked="" type="checkbox"/>	CIVIL
<input type="checkbox"/>	TRAFFIC
<input type="checkbox"/>	WATER
<input type="checkbox"/>	WASTE WATER

CONSTRUCTION BMP'S

STANDARD DRAWING
SHEET NO.
ES-1



NOTE: THE DANDY SACK™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

REGULAR FLOW DANDY SACK™ (BLACK)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.76 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4632	%	15 x 15
Puncture Strength	ASTM D 4833	kN (lbs)	0.67 (150)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	5506 (800)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.73 (165)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	2852 (70)
Permittivity	ASTM D 4491	Sec ⁻¹	0.90

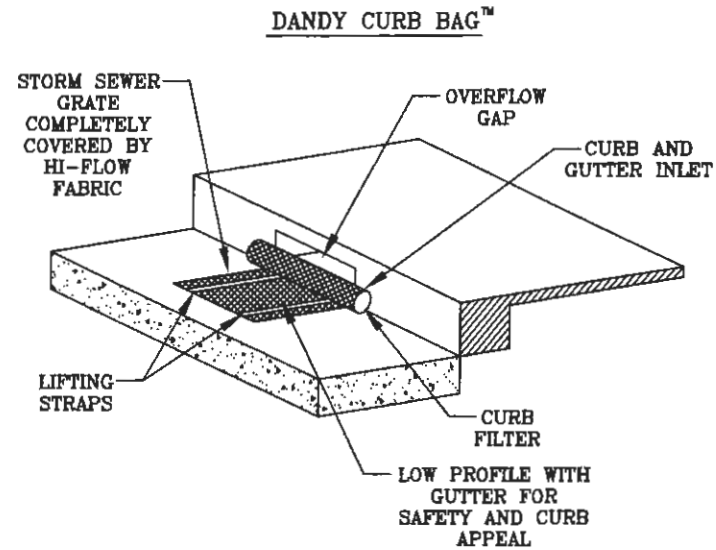
HI-FLOW DANDY SACK™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 x 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

*Note: All Dandy Sacks™ can be ordered with our optional oil absorbent pillows

DETAIL OF INLET SEDIMENT CONTROL DEVICE

DANDY SACK SPECIFICATION



NOTE: THE DANDY CURB BAG™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

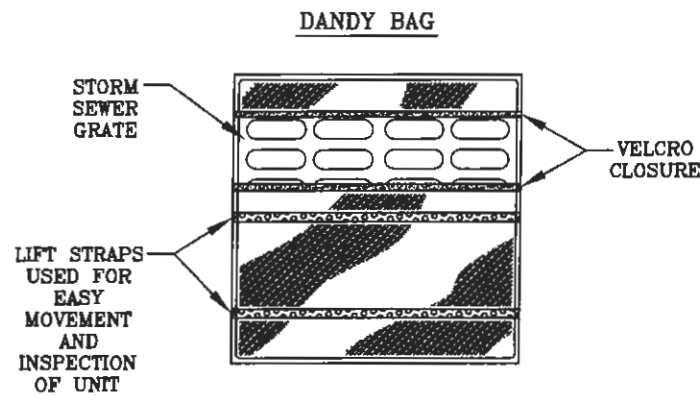
DANDY CURB BAG™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 x 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

*Note: All Dandy Curb Bags™ can be ordered with our optional oil absorbents

DETAIL OF CURB INLET SEDIMENT CONTROL DEVICE WITH CURB FILTER

DANDY CURB BAG SPECIFICATION

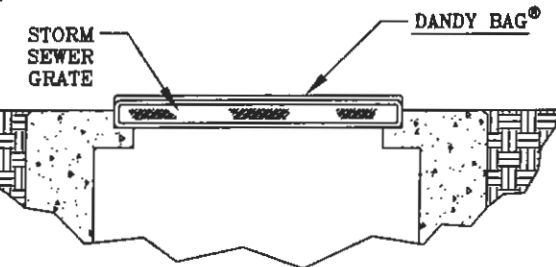


NOTE: THE DANDY BAG® WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

HI-FLOW DANDY BAG® (SAFETY ORANGE)

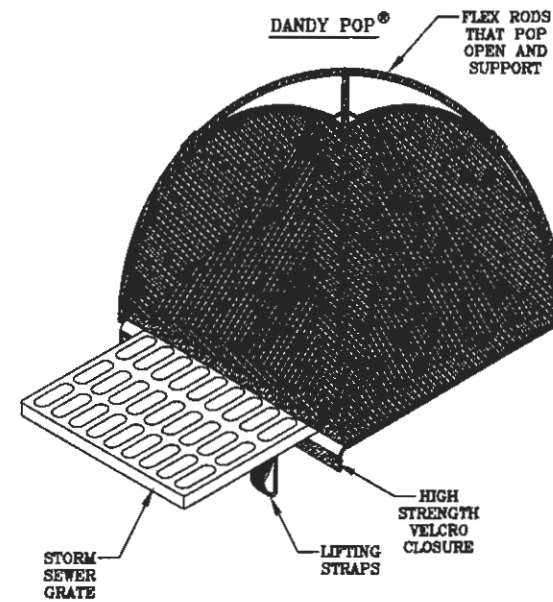
Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 x 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

*Note: All Dandy Bags® can be ordered with our optional oil absorbent pillows



DETAIL OF INLET SEDIMENT CONTROL DEVICE

DANDY BAG SPECIFICATION



NOTE: THE DANDY SACK™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

DANDY POP® (BLACK & SAFETY ORANGE)

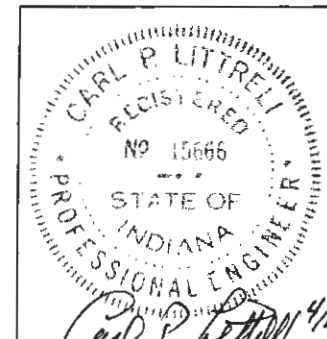
Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 x 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) x 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

*Note: All Dandy Pops® can be ordered with our optional oil absorbent pillows

DETAIL OF INLET SEDIMENT CONTROL DEVICE

DANDY POP SPECIFICATION

NOTES:
* OR APPROVED EQUAL



No.	BY	DATE	REVISION	DATE
		1/12/2010		
			DRAWN RSG	
			CHECKED RAN	
			APRVD C.P.L.	
			SCALE	
			NONE	



DEPARTMENT OF PUBLIC WORKS
CITY OF SOUTH BEND, INDIANA

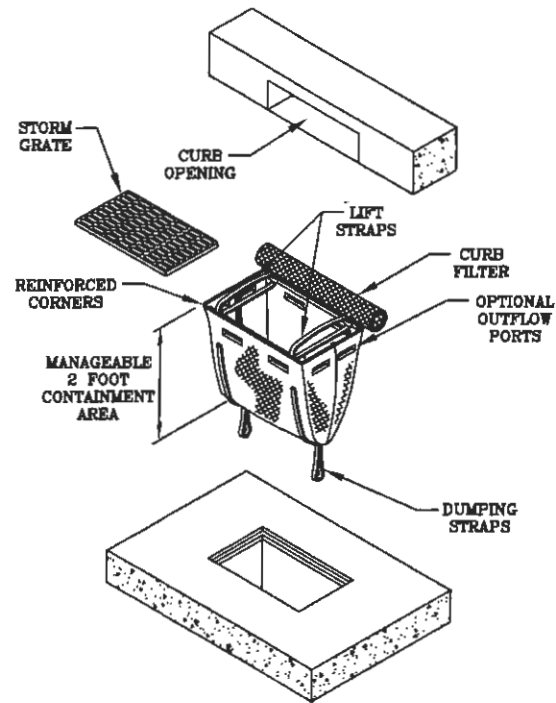
DIVISION	
<input checked="" type="checkbox"/>	CIVIL
<input type="checkbox"/>	TRAFFIC
<input type="checkbox"/>	WATER
<input type="checkbox"/>	WASTE WATER

CONSTRUCTION BMP'S

STANDARD DRAWING

SHEET NO.
ES-2

DANDY CURB SACK™



NOTE: THE DANDY CURB SACK™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

REGULAR FLOW DANDY CURB SACK™ (BLACK)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.78 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4632	%	15 x 15
Puncture Strength	ASTM D 4833	kN (lbs)	0.87 (150)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	5508 (800)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.73 (165)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	1/min/m ² (gal/min/ft ²)	2852 (70)
Permittivity	ASTM D 4491	Sec ⁻¹	0.90

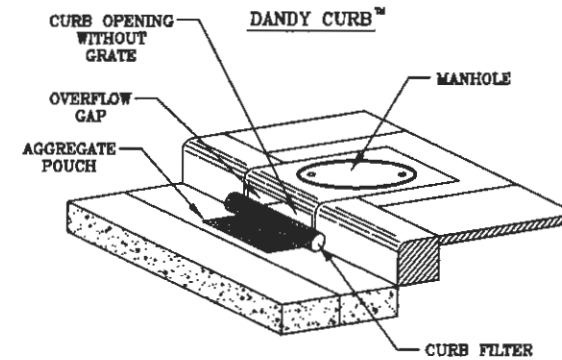
HI-FLOW DANDY CURB SACK™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	1/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

*Note: All Dandy Sacks™ can be ordered with our optional oil absorbent pillows

DETAIL OF INLET SEDIMENT CONTROL DEVICE WITH CURB FILTER

DANDY CURB SACK SPECIFICATION



DETAIL OF CURB INLET SEDIMENT CONTROL DEVICE WITH CURB FILTER

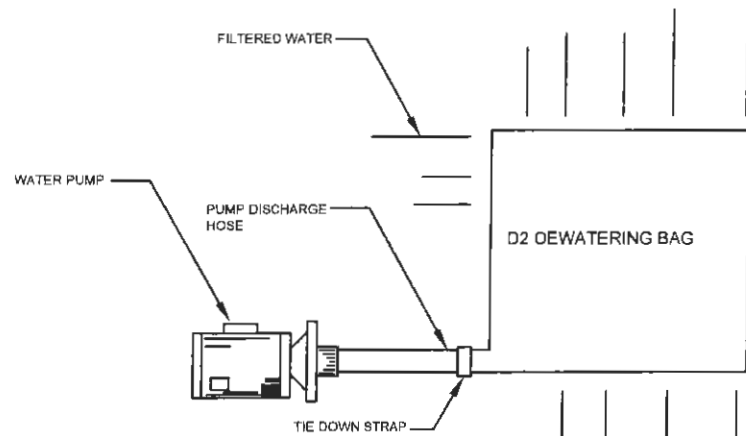
DANDY CURB SPECIFICATION

DANDY CURB™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	1/min/m ² (gal/min/ft ²)	5907 (145)
Permittivity	ASTM D 4491	Sec ⁻¹	2.1

*Note: All Dandy Curbs™ can be ordered with our optional oil absorbents

NOTES:
* OR APPROVED EQUAL



DEWATERING BAG AND PUMP SIZE CHART

6' X 6', 10' X 15', AND 15' X 15'	2" TO 3" PUMP
15' X 25'	4" PUMP
15' X 35'	6" PUMP

CUSTOM SIZES AVAILABLE FOR LONG TERM OR SPECIALTY APPLICATIONS

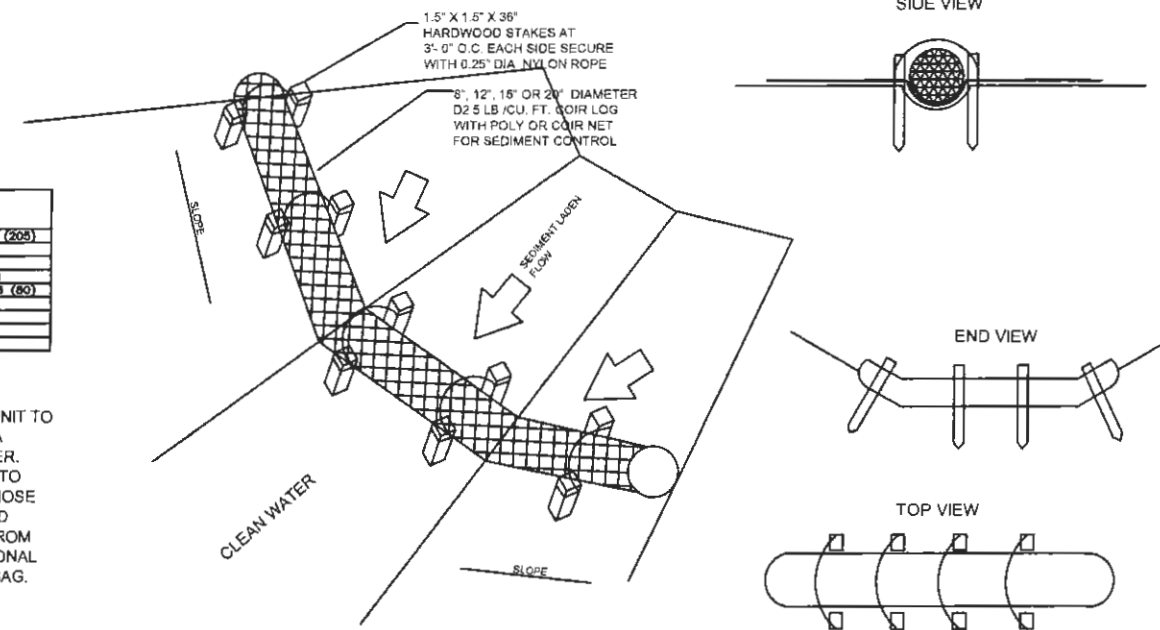
D2 DEWATERING BAG™

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	%	90 x 90
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 Resistance	ASTM D 4355	%	70
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.180 (80)
Flow Rate	ASTM D 4491	1/min/m ² (gal/min/ft ²)	3866 (95)
Permittivity	ASTM D 4491	Sec ⁻¹	1.2

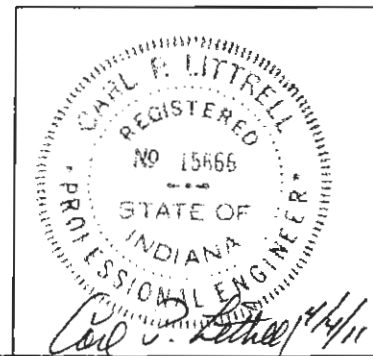
INSTALLATION AND MAINTENANCE GUIDELINES

INSTALLATION: PLACE LIFTING STRAPS (NOT INCLUDED) UNDER THE UNIT TO FACILITATE REMOVAL AFTER USE. UNFOLD D2 DEWATERING BAG ON A STABILIZED AREA OVER DENSE VEGETATION, STRAW OR OTHER COVER. PLACE BAG OVER OPEN GRADED STONE, SUCH AS INDOT #2 GRAVEL, TO ACHIEVE MAXIMUM FILTRATION AND DRAINAGE. INSERT DISCHARGE HOSE FROM PUMP INTO D2 DEWATERING BAG A MINIMUM OF SIX INCHES AND TIGHTLY SECURE WITH THE ATTACHED STRAP TO PREVENT WATER FROM FLOWING OUT OF THE UNIT WITHOUT BEING FILTERED. IF USING OPTIONAL ABSORBENTS, PLACE ABSORBENT BOOM INTO THE D2 DEWATERING BAG. CLIP ABSORBENT BOOM TO TETHER PROVIDED INSIDE THE UNIT.

MAINTENANCE: REPLACE THE UNIT WHEN 1/2 FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW RATE OF THE PUMP DISCHARGE TO AN IMPRACTICAL RATE. IF USING OPTIONAL OIL ABSORBENTS; REMOVE AND REPLACE ABSORBENT WHEN NEAR SATURATION.



D2 COIR LOG DITCH CHECK FOR SEDIMENT AND ENERGY CONTROL 006



No.	BY	DATE	REVISION	DATE
	RSG	1/12/2010	DRAWN	
	RAN		CHECKED	
	C.P.L.		APRVD	
			SCALE	
			NONE	

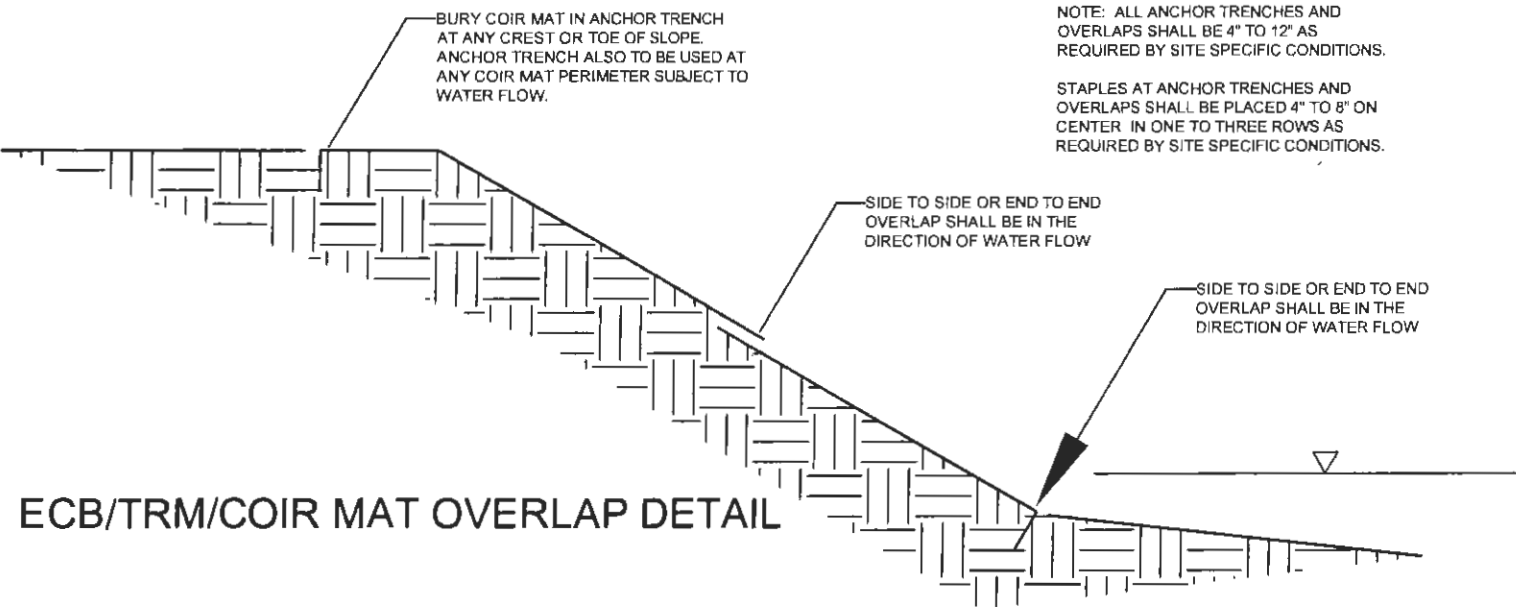


DEPARTMENT OF PUBLIC WORKS
CITY OF SOUTH BEND, INDIANA

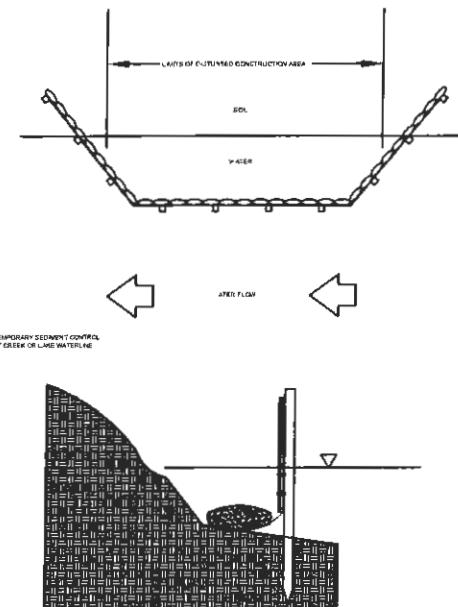
DIVISION	
<input checked="" type="checkbox"/>	CIVIL
<input type="checkbox"/>	TRAFFIC
<input type="checkbox"/>	WATER
<input type="checkbox"/>	WASTE WATER

CONSTRUCTION BMP'S

STANDARD DRAWING
SHEET NO.
ES-3



ECB/TRM/COIR MAT OVERLAP DETAIL



SILT FENCE AT THE WATERLINE SPECIFICATION AND INSTALLATION DETAIL

SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC SPECIFICATION 090311

DESCRIPTION: SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC SHALL CONSIST OF FOUR PARTS:

1. SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN GEOTEXTILE SHALL BE A 39 1/2" NON-WOVEN FILTER FABRIC MACHINE PRODUCED FROM 100% POLYPROPYLENE. GEOTEXTILE SHOULD BE DESIGNED SPECIFICALLY TO RETAIN SEDIMENT AND REMAIN HIGHLY PERMEABLE TO WATER. DESIRED CHARACTERISTICS INCLUDE SMALL PORE SIZE, HIGH U.V. RESISTANCE, HIGH PERMITTIVITY, AND A HIGH PERCENT OPEN AREA.
2. FULL 2" X 2" X 43" HARDWOOD STAKE WITH A SHARPENED POINT
3. NOMINAL 1/2" X 2" X 25 1/2" HARDWOOD LATH
4. 1.5" GS16 STAPLES

GEOTEXTILE PROPERTIES SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC:

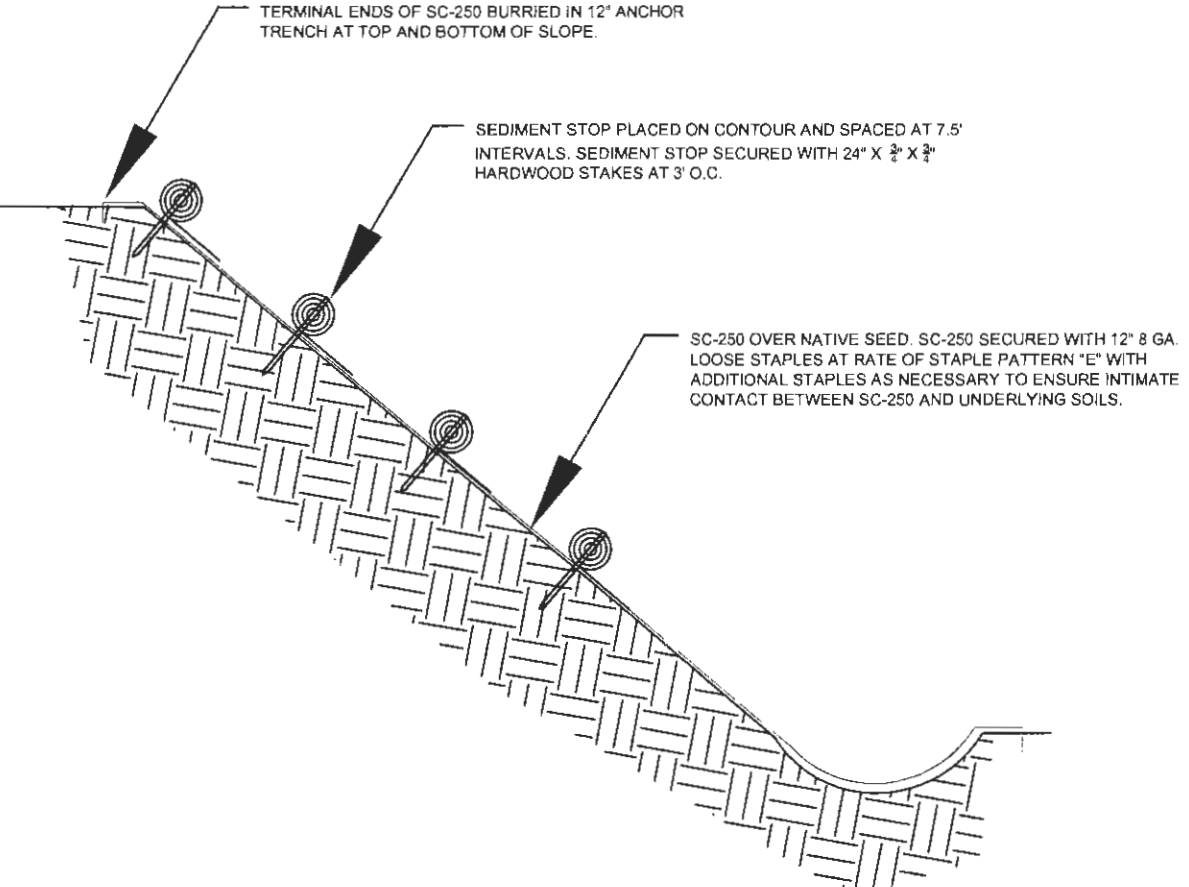
MECHANICAL/PHYSICAL PROPERTIES	DESCRIPTION/MINIMUM AVERAGE ROLL VALUES	TEST METHOD
STRUCTURE	NON-WOVEN	
REINFORCEMENT	BELT STRAND SCRIM	
POLYMER	POLYPROPYLENE	
MASS PER UNIT AREA	5.2 oz/sq. yd.	ASTM D3776
GRAB TENSILE STRENGTH MD	297 lbs.	ASTM D4632
GRAB TENSILE STRENGTH CD	223 lbs.	ASTM D4632
GRAB ELONGATION MD	58%	ASTM D4632
GRAB ELONGATION CD	59%	ASTM D4632
TRAP TEAR MD X CD	81 lbs. X 75 lbs.	ASTM D4533
MULLEN BURST STRENGTH	340 psi	ASTM D3786
PUNCTURE RESISTANCE	99 lbs	ASTM D4633
WATER FLOW RATE	192 gpm/sq.ft.	ASTM D4491
PERMITTIVITY	2.60 per. sec.	ASTM D4491
#60 SIEVE	ASTM D4751	ASTM D4491
COLOR	Gray	

AOS (U.S. SIEVE)

ASSEMBLY: SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC GEOTEXTILE SHALL BE ATTACHED TO HARDWOOD STAKES WITH HARDWOOD LATHS AND SECURED WITH FIVE 1 1/2" STAPLES. HARDWOOD STAKES SHALL BE 6" IN CENTER. THE BOTTOM 14 1/2" OF FABRIC SHALL BE LEFT UNSECURED TO ALLOW FOR ENTRENCHMENT.

PREPARATION/INSTALLATION: CREATE A 6" DEEP TRENCH ALONG PROPOSED FENCE LINE. DRIVE THE STAKES INTO THE TRENCH 8-12" OR UNTIL SECURE. BE SURE TO STRETCH FABRIC TAUT WHEN DRIVING STAKES. STAKES MUST BE INSTALLED ON THE DOWNHILL OR DOWNSTREAM SIDE OF FENCE. DRAPE LOOSE END OF GEOTEXTILE INTO TRENCH, THEN BACKFILL AND COMPACT SOIL ON BOTH SIDES.

AVAILABLE: D2 Land & Water Resource, INC. 2600 Bloyd Ave. Indianapolis, IN 46218.



SEDIMENT STOP APPLICATION 001

SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC SPECIFICATION 090311

DESCRIPTION: SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC SHALL CONSIST OF FOUR PARTS:

1. SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN GEOTEXTILE SHALL BE A 39 1/2" NON-WOVEN FILTER FABRIC MACHINE PRODUCED FROM 100% POLYPROPYLENE. GEOTEXTILE SHOULD BE DESIGNED SPECIFICALLY TO RETAIN SEDIMENT AND REMAIN HIGHLY PERMEABLE TO WATER. DESIRED CHARACTERISTICS INCLUDE SMALL PORE SIZE, HIGH U.V. RESISTANCE, HIGH PERMITTIVITY, AND A HIGH PERCENT OPEN AREA.
2. FULL 2" X 2" X 43" HARDWOOD STAKE WITH A SHARPENED POINT
3. NOMINAL 1/2" X 2" X 25 1/2" HARDWOOD LATH
4. 1.5" GS16 STAPLES

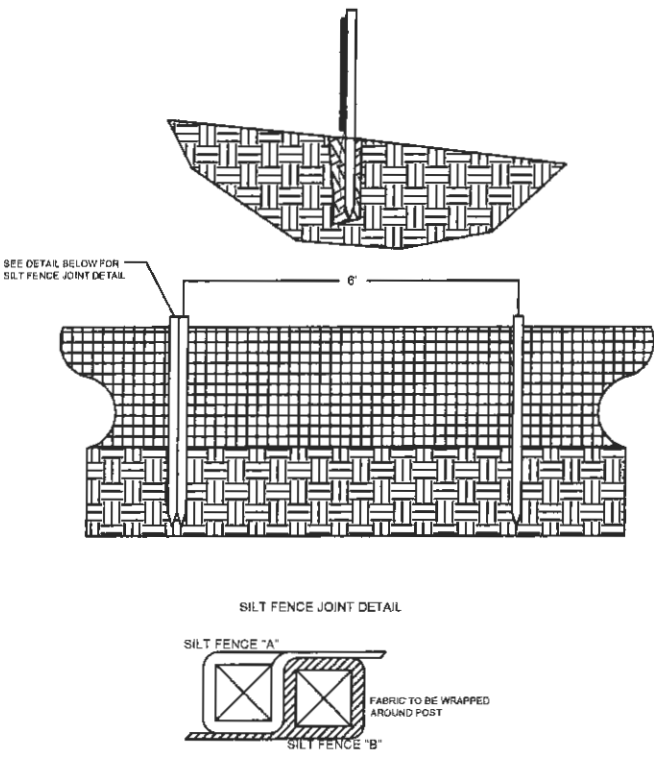
GEOTEXTILE PROPERTIES SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC:

MECHANICAL/PHYSICAL PROPERTIES	DESCRIPTION/MINIMUM AVERAGE ROLL VALUES	TEST METHOD
STRUCTURE	NON-WOVEN	
REINFORCEMENT	BELT STRAND SCRIM	
POLYMER	POLYPROPYLENE	
MASS PER UNIT AREA	5.2 oz/sq. yd.	ASTM D3776
GRAB TENSILE STRENGTH MD	297 lbs.	ASTM D4632
GRAB TENSILE STRENGTH CD	223 lbs.	ASTM D4632
GRAB ELONGATION MD	58%	ASTM D4632
GRAB ELONGATION CD	59%	ASTM D4632
TRAP TEAR MD X CD	81 lbs. X 75 lbs.	ASTM D4533
MULLEN BURST STRENGTH	340 psi	ASTM D3786
PUNCTURE RESISTANCE	99 lbs	ASTM D4633
WATER FLOW RATE	192 gpm/sq.ft.	ASTM D4491
PERMITTIVITY	2.60 per. sec.	ASTM D4491
AOS (U.S. SIEVE)	#60 SIEVE	ASTM D4751
COLOR	Gray	

ASSEMBLY: SILT FENCE 3' HIGH FLOW BELT STRAND REINFORCED GRAY NON-WOVEN 6' OC GEOTEXTILE SHALL BE ATTACHED TO HARDWOOD STAKES WITH HARDWOOD LATHS AND SECURED WITH FIVE 1 1/2" STAPLES. HARDWOOD STAKES SHALL BE 6" IN CENTER. THE BOTTOM 14 1/2" OF FABRIC SHALL BE LEFT UNSECURED TO ALLOW FOR ENTRENCHMENT.

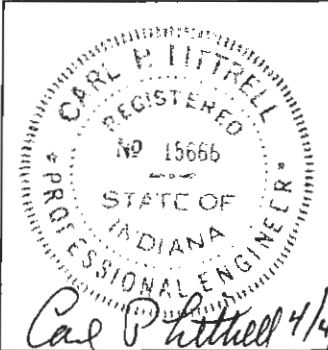
PREPARATION/INSTALLATION: CREATE A 6" DEEP TRENCH ALONG PROPOSED FENCE LINE. DRIVE THE STAKES INTO THE TRENCH 8-12" OR UNTIL SECURE. BE SURE TO STRETCH FABRIC TAUT WHEN DRIVING STAKES. STAKES MUST BE INSTALLED ON THE DOWNHILL OR DOWNSTREAM SIDE OF FENCE. DRAPE LOOSE END OF GEOTEXTILE INTO TRENCH, THEN BACKFILL AND COMPACT SOIL ON BOTH SIDES.

AVAILABLE: D2 Land & Water Resource, INC. 2600 Bloyd Ave. Indianapolis, IN 46218.



SILT FENCE SPECIFICATION AND INSTALLATION

NOTES:
* OR APPROVED EQUAL



No.	BY	DATE	REVISION	DATE
		1/12/2010		
			DRAWN RSG	
			CHECKED RAN	
			APRVD C.P.L.	
			SCALE	
			NONE	



DEPARTMENT OF PUBLIC WORKS
CITY OF SOUTH BEND, INDIANA

DIVISION
<input checked="" type="checkbox"/> CIVIL
<input type="checkbox"/> TRAFFIC
<input type="checkbox"/> WATER
<input type="checkbox"/> WASTE WATER

CONSTRUCTION BMP'S

STANDARD DRAWING
SHEET NO.
ES-4

Appendix E Street Closure Form

227 W. JEFFERSON BOULEVARD
 SUITE 1316 COUNTY-CITY BUILDING
 SOUTH BEND, INDIANA 46601



PHONE 574/ 235-9251
 FAX 574/ 235-9171
 TDD 574/ 235-5567

CITY OF SOUTH BEND

**DEPARTMENT OF PUBLIC WORKS
 CLOSURE REQUEST FORM**

***FAX OR MAIL FORM 3 WORKING DAYS (EXCLUDES WEEKENDS) BEFORE REQUIRED 48 HR PUBLIC NOTICE
 48 HR PUBLIC NOTICE ANNOUNCED UPON APPROVED FORM

Partial/One Lane Full Road Closure Right-of-Way Sidewalk Closure

Submission Date:	<input type="checkbox"/> Original	<input type="checkbox"/> Revision	#
Applicant	Phone #	Fax #	
Permit/Project #			
Street			
Location(s)	From:	To:	
Date(s)	From:	To:	
Time(s)	From:	To:	
Contractor Performing Work			
On-Site Contact	Phone #		
Work to be Performed:			
Reason for Closure:			
Affected Customers:			
Attach the following items:	<input type="checkbox"/> Traffic Control Plan <input type="checkbox"/> Detour Plan <input type="checkbox"/> Barricades, Signs, Flashers or Other Signage Details		

OFFICE USE ONLY:

Approved Approved as Noted Revise Revise as Noted

Authorized Signature: _____ Date: _____

Appendix F Geotechnical Reports

GEOTECHNICAL EVALUATION
ROUNDBOUT INTERSECTION IMPROVEMENTS
MARION / MICHIGAN / MAIN
SOUTH BEND, INDIANA
PROJECT NO. 114-035

Prepared for

LAWSON-FISHER ASSOCIATES P.C.
525 WEST WASHINGTON AVENUE
SOUTH BEND, INDIANA 46601

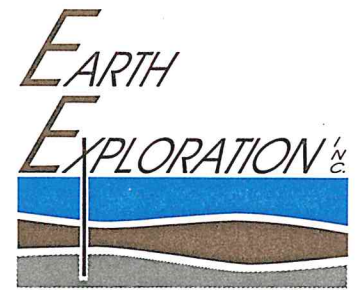
By

EARTH EXPLORATION, INC.
2204 YANKEE STREET
NILES, MI 49120

July 15, 2015

July 15, 2015

Mr. Michael J. Guzik, P.E.
Lawson-Fisher Associates P.C.
525 West Washington Avenue
South Bend, IN 46601



▶ 7770 West New York Street
Indianapolis, IN 46214-2988
317-273-1690 (FAX) 317-273-2250
2204 Yankee Street
Niles, MI 49120
269-262-4320 (FAX) 269-262-4479

Re: Geotechnical Evaluation
Roundabout Intersection Improvements
Marion / Michigan / Main
South Bend, Indiana
Project No. 114-035
EEI Project No. 2-14-095

Dear Mr. Guzik:

We are pleased to submit our geotechnical evaluation for the above-referenced project. This report presents the results of our subsurface exploration and provides geotechnical recommendations for design and construction of the proposed roadway improvements. The work for this project was authorized via an agreement and has been performed in accordance with Earth Exploration, Inc. (EEI) Proposal No. P2-14-050. For your information, we are enclosing three paper copies and an electronic copy (sent by electronic mail) of our report for your review and distribution and can provide additional copies, if requested. Unless you notify us otherwise, we will retain the soil samples from the exploratory program for 60 days and then discard them.

The opinions and recommendations submitted in this report are based, in part, on our interpretation of the subsurface information revealed at the exploratory locations as indicated on an attached plan. Understandably, this report does not reflect variations in subsurface conditions between or beyond these locations. Therefore, variations in these conditions can be expected, and fluctuation of the groundwater levels will occur with time. Other important limitations of this report are discussed in Appendix A.

PROJECT DESCRIPTION

We understand that the city of South Bend is planning to make improvements to include a roundabout at the intersection of Marion Street at Michigan and Main Streets. The project also plans to reconfigure the existing one-way four lane streets to two-lane bi-directional streets with street side parking. Maximum earth cuts and fill depths are anticipated to be nominal. Traffic data for design of the pavement was not provided.

From information provided on the previously-mentioned plans, the drainage improvements are planned to consist of a new 12 in. dia. storm sewer pipes connected to an existing stormwater sewer system. The invert of the pipes is planned to be established about 2 to 4 ft below the existing ground surface.

At this time, other information such as the anticipated construction schedule is not known. In the event that the nature, design or location of the proposed construction changes, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed, and the conclusions are modified or confirmed in writing.

FIELD EXPLORATION AND LABORATORY TESTING

Subsurface conditions for the improvements were explored by performing ten road borings (designated B-1 through B-10) to a depth of 15 ft below the existing ground surface. In addition, pavement cores (designated C-1 through C-10, excluding C-8-no pavement) were obtained at each corresponding boring location. The number, location and depths of the test borings and pavement cores were selected by EEI. Additionally, the borings and cores were located in the field by EEI personnel referencing identifiable features shown on the previously mentioned plans. Furthermore, ground surface elevations at the exploratory locations were interpolated to the nearest 1 ft based on topographic information provided on these same plans. The exploratory locations and elevations should be considered accurate only to the degree implied by the methods used.

Exploratory field activities were performed by EEI on April 29 and 30, 2015. In general, exploratory activities were performed using hollow stem augers to advance the boreholes, and samples of the soil conditions were obtained at predetermined intervals using Standard Penetration Test (SPT) procedures (AASHTO T 206). The pavement coring activities were performed using a 4-in. diameter core barrel and an electric-powered drill motor. After obtaining final groundwater observations, each borehole was backfilled with auger cuttings. In addition, a concrete patch was placed at the surface of the borings performed within the existing roadway. Additional details of the drilling and sampling procedures are provided in Appendix B.

Following the field activities, the soil samples were visually classified by an EEI engineering technician and later reviewed by an EEI geotechnical engineer. After visually classifying the soils, representative samples of the granular soil were selected and submitted for grain size analysis (AASHTO T 88). The results of these tests are provided on the boring logs in Appendix C and/or respective summary sheets in Appendix D. For your information, soil descriptions on the boring logs are in general accordance with the AASHTO system [AASHTO designation, e.g., A-1-b(0)] and the INDOT Standard Specifications (ISS¹) (textural classification, e.g., sand). The final boring logs represent our interpretation of the individual samples and field logs and results of the laboratory tests. The stratification lines on the boring logs represent the approximate boundary between soil types; although, the transition may actually be gradual.

SITE CONDITIONS

¹ References the Indiana Department of Transportation (INDOT) Standard Specifications.

Surface Conditions

The project site is located on the north side of downtown South Bend. The topography of the ground surface along the project is relatively flat and ranges from about Elevation 700 at the far north end and 704 to 708 for the remainder of the project. The pavement section along Michigan and Marion Street (west) consisted of asphaltic concrete overlying brick. Along Marion Street (east) and Main Street the pavement consisted of asphaltic concrete. At the very north end of the project the pavement consisted of asphaltic concrete over Portland cement concrete. Overall, the pavement thickness varied from 7¼ to 11¾ in. Refer to the Summary of Pavement Cores in Appendix C for specific details at each location. Furthermore, surface drainage along the existing roadways is provided curb and gutter and an existing stormwater sewer system.

Subsurface Conditions

The subsurface profile (beneath the surficial components) at the exploratory locations was somewhat similar and typically consisted of sandy loam and sand (naturally occurring or soil fill) to maximum depths explored.

From our observations, the relative density of the granular soils ranged from very loose to medium dense with SPT N-values ranging from 2 to 23 blows/ft (bpf). Exceptions to this were noted at Borings B-6, B-8 and B-9 near the termination depth of the borings. At these locations the SPT N-values were in the dense to very dense range.

Groundwater Conditions

Groundwater level observations made during and at completion of the test boring are noted at the bottom of the boring logs. Groundwater was not encountered within the depth explored. It should be noted that the project is located near the St. Joseph River which has a normal pool below Elevation 675. Given the presence of primarily granular soil, it is our opinion that the groundwater level is below the depth of our exploration. It should be recognized that groundwater levels either piezometric or perched can fluctuate due to changes in precipitation, infiltration, surface run-off, the level of the St. Joseph River, and other hydrogeological factors.

DISCUSSION AND RECOMMENDATIONS

General

Based on our understanding of the improvements and information obtained from the test boring locations, it is our opinion that the subsurface conditions are conducive for the support of the proposed roadway improvements provided the subgrade is prepared as discussed herein. Considering the very loose to loose relative density of the granular soil, improvement of the subgrade and/or foundation soils will be required in some areas. The techniques will also be necessary to facilitate construction and/or provide adequate support of the pavement. Given the granular nature of the soil anticipated at the pavement and pipe subgrade levels, water entering excavations is expected to infiltrate at a rather rapid rate. Where sandy loam type soil exists at the subgrade, the permeability (k) of the soil is anticipated to be in the range of 10^{-3} to 10^{-4} cm/s. Where sand is encountered, the permeability of the soil is anticipated to be in the range of 10^{-2} to 10^{-3} cm/s. Additional discussion and recommendations regarding these issues are provided in the following paragraphs.

Subgrade Preparation

In all areas to receive pavement components and earth fill, we recommend all topsoil, wet or soft near-surface soils, and existing pavement components, be removed from within the construction limits, as necessary. In addition, we recommend that existing underground utilities be appropriately relocated. Where utilities are relocated, we recommend that the resulting excavations be backfilled with "B" Borrow in accordance with Section 203.09 of the ISS.

After removal of surface elements, the subgrade is generally anticipated to consist of granular soils (sandy loam or sand). Sandy loam type soils were encountered at the boring locations in the northern half of the project. The sandy loam soil contains over 12 percent fines which reduces the soil permeability. While water infiltrates through these soils, the rate of infiltration can be rather slow. Therefore, following rain events, subgrade conditions can be wet and become unstable. Care in working on wet subgrade soil in the northern half of the project should be considered. Where granular soils are exposed at the subgrade, they should be adequately compacted to densify the loose soils and those soils loosened during the construction activities. The final decision regarding stabilization should be made at the time of construction, based on the observed actual conditions.

Earth Cut and Fill Considerations

As mentioned previously, earth cuts and fill depths are anticipated to be nominal. Based on the information obtained at the boring locations, we anticipate that very loose to loose soil will be encountered in subgrade areas of cut and fill placement for roadway improvements. Standard embankment construction practices outlined in the ISS should provide an adequate subgrade for embankment construction provided the subgrade is prepared as discussed above. However, if soft soils or otherwise unstable soils are encountered during the fill placement operations which will not readily compact, we recommend they be improved as discussed previously. We

recommend that fill used to raise grades or backfill of undercut areas be placed in loose lift thicknesses not exceeding 8 in. and be compacted to 95 percent of the maximum density obtained in accordance with AASHTO T 99 as specified in the ISS.

Pavement Design Considerations

Based on the proposed pavement grades and the profile of the existing ground surface, it appears that the roadway subgrade will consist of sandy loam or sand. Due to the relatively short length of the project, a subgrade resilient modulus test was not performed. Based on the subsurface conditions, our experience in the area, and the nature of project, we recommend that the information in Table 1 be considered for pavement design.

TABLE 1: PAVEMENT DESIGN CONSIDERATIONS	
M _r for Improved Subgrade	7,500 psi
M _r for Natural Subgrade	4,000 psi
Subgrade Material	Sandy Loam (A-2-4)
Depth to Water	>10 ft
Subgrade Treatment	Type I

In any areas of narrow widening, we recommend Subgrade Treatment Type IC. It is important to provide positive drainage during construction in order to reduce the risk of wet (yielding) soil conditions. Given the granular nature of the subgrade soil, we do not recommend underdrains be included in the typical pavement sections.

Storm Sewer Considerations

Based on the information obtained at the boring locations, it appears that the subsurface conditions at the anticipated invert elevation of the storm sewer pipe (2 to 4 ft below the existing ground surface) will consist of very loose to medium dense granular soils. In our opinion, these soils are generally adequate for support of the pipes (i.e., the net load on the supporting conditions is anticipated to be nominal [possibly less than the overburden]). Where very loose to loose soils are encountered at the base of the trenches, it is our opinion they should be compacted to reduce the risk of settling during pipe construction.

In our opinion, a minimum 6-in. thick bedding layer, consisting of structure backfill material should be provided for pipe support. However, given that the subgrade is anticipated to consist of granular soil, a separate bedding layer is not necessary. We recommend that the trenches be backfilled to grade with structure backfill material. In our opinion, the structure backfill material should be compacted to 95 percent of maximum dry density obtained in accordance with AASHTO T 99 and INDOT Specifications. Hand or remote guided vibratory compactors are recommended for compacting the bedding material and material on either side of the pipe. The first several lifts of backfill over the pipe should also be compacted with small vibratory

compactors to assure proper compaction is achieved and to prevent damage to the pipe from heavier, high-energy compactors.

CONSTRUCTION CONSIDERATIONS

Excavations

We anticipate that excavations will require: 1) cut slopes adequate to prevent cave-ins/subsidence; or 2) excavation support for safe construction operation. In areas where the excavations take place adjacent to existing features that cannot be disturbed such as other utilities or roadways, excavation support will likely be required. All excavations should conform with Occupational Safety and Health Administration (OSHA) requirements (i.e., 29 CFR Part 1926). The contractor is solely responsible for constructing and maintaining stable excavations. Additionally, soil should not be stockpiled immediately adjacent to the top of the excavation. In our opinion, the cohesive soil on this project may be classified as Type C (according to OSHA) and should be treated accordingly. Based on our observations, groundwater is not anticipated to be encountered during excavations.

CONCLUDING REMARKS

In closing, we recommend that EEI be provided the opportunity to review the final design and project specifications to confirm that earthwork and subgrade requirements have been properly interpreted and implemented in the design and specifications. We also recommend that EEI be retained to provide construction observation services during the earthwork and subgrade construction phases of the project. This will allow us to verify that the construction proceeds in compliance with the design concepts, specifications and recommendations. It will also allow design changes to be made in the event that subsurface conditions differ from those anticipated. In addition, environmental issues or concerns were not part of the work scope for this evaluation. Therefore, this report does not address the project site from an environmental perspective.

Mr. Michael J. Guzik, P.E.
Lawson-Fisher Associates P.C.
Roundabout Intersection Improvements – South Bend, IN

July 15, 2015
Page 7

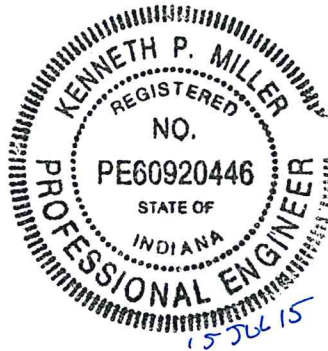
We appreciate the opportunity to provide our services to you on this project. Please contact our office if you have any questions or need further assistance with the project.

Sincerely,

EARTH EXPLORATION, INC.



Kenneth P. Miller, P.E.
Michiana Regional Manager



APPENDICES

- APPENDIX A- Important Information about Your Geotechnical Report
- APPENDIX B- Field Methods for Exploring and Sampling Soils and Rock
- APPENDIX C- Exploratory Location Plan (Drawing No. 2-14-095.B1)
 - Log of Test Boring - General Notes
 - Log of Test Boring - Road Borings (10)
 - Summary of Pavement Cores
- APPENDIX D- Summary of Classification Test Results
 - Grain Size Distribution Curve (8)

APPENDIX A

IMPORTANT INFORMATION ABOUT YOUR
GEOTECHNICAL ENGINEERING REPORT

Important Information About Your Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply the report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,

- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. Always contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.*

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time to perform additional study.* Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that

have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely on Your ASFE-Member Geotechnical Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.



8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@asfe.org www.asfe.org

Copyright 2004 by ASFE, Inc. Duplication, reproduction, or copying of this document, in whole or in part, by any means whatsoever, is strictly prohibited, except with ASFE's specific written permission. Excerpting, quoting, or otherwise extracting wording from this document is permitted only with the express written permission of ASFE, and only for purposes of scholarly research or book review. Only members of ASFE may use this document as a complement to or as an element of a geotechnical engineering report. Any other firm, individual, or other entity that so uses this document without being an ASFE member could be committing negligent or intentional (fraudulent) misrepresentation.

APPENDIX B

FIELD METHODS FOR EXPLORING AND SAMPLING SOILS AND ROCK

FIELD METHODS FOR EXPLORING AND SAMPLING SOILS AND ROCK

A. Boring Procedures Between Samples

The boring is extended downward, between samples, by a hollow stem auger (AASHTO* Designation T251-77), a continuous flight auger, driven and washed-out casing, or rotary boring with drilling mud or water.

B. Penetration Test and Split-Barrel Sampling of Soils (AASHTO* Designation: T206-87)

This method consists of driving a 2-inch outside diameter split-barrel sampler using a 140 pound weight falling freely through a distance of 30 inches. The sampler is first seated 6-inches into the material to be sampled and then driven 12 inches. The number of blows required to drive the sampler the final 12 inches is known as the Standard Penetration Resistance or N-Value. The blow counts are reported on the Test Boring Records per 6 inch increment. Recovered samples are first classified as to texture by the driller. Later, in the laboratory the driller's classification is reviewed by a soils engineer who examines each sample.

C. Thin-walled Tube Sampling of Soils (AASHTO* Designation: T207-87)

This method consists of pushing a 2-inch or 3-inch outside diameter thin wall tube by hydraulic or other means into soils, usually cohesive types. Relatively undisturbed samples are recovered.

D. Soil Investigation and Sampling by Auger Borings (AASHTO* Designation: T203-82)

This method consists of augering a hole and removing representative soil samples from the auger flight or bucket at 5-foot intervals or with each change in the substrata. Relatively disturbed samples are obtained and its use is therefore limited to situations where it is satisfactory to determine approximate subsurface profile.

E. Diamond Core Drilling for Site Investigation (AASHTO* Designation: T225-83)

This method consists of advancing a hole in bedrock or other hard strata by rotating downward a single tube or double tube core barrel equipped with a cutting bit. Diamond, tungsten carbide, or other cutting agents may be used for the bit. Wash water is used to remove the cuttings. Normally, a 3-inch outside diameter by 2-inch inside diameter coring bit is used unless otherwise noted. The rock or hard material recovered within the core barrel is examined in the field and laboratory. Cores are stored in partitioned boxes and the length of recovered material is expressed as a percentage of the actual distance penetrated.

* American Association of State Highway and Transportation Officials, Washington D.C.

APPENDIX C

EXPLORATORY LOCATION PLAN
(Drawing No. 2-14-095.B1)

LOG OF TEST BORING - GENERAL NOTES

LOG OF TEST BORING - ROAD BORINGS (10)

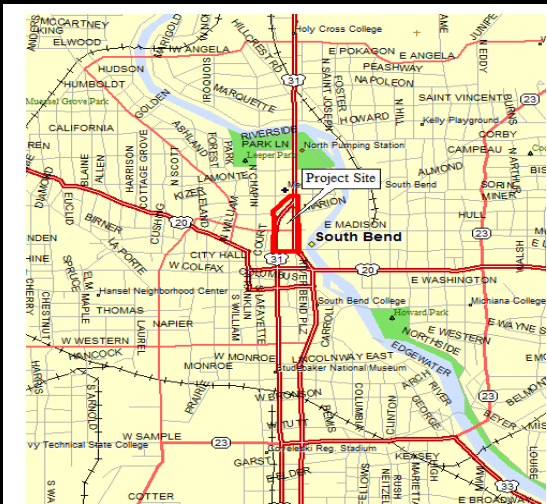
SUMMARY OF PAVEMENT CORES




VICINITY MAP
N.T.S.

NOTES

LEGEND

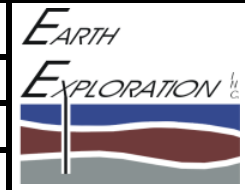


1. Base map developed from an aerial image from google.com/maps.
2. Vicinity map was generated using commercially available software by DeLorme (i.e., Street Atlas USA 5.1).
3. Refer to the Log of Test Boring (10) in Appendix C for a description of the subsurface conditions encountered at the test boring locations.
4. Borings were located in the field by representatives from EEI on April 23 2015
5. Ground surface elevations at the test boring locations were interpolated to the nearest 1 ft based on the project plan and profile drawings.

 B-1 Test Boring and Pavement Core Location and Designation

TEST BORING AND CORE LOCATION PLAN

PROJECT: Roundabout Intersection Improvements at Marion / Michigan / Main Streets
LOCATION: South Bend, Indiana
CLIENT: Lawson-Fisher Associates P.C.
EEI PROJECT NO: 2-14-095

PROJECT ENG: KPM	
APPROVED BY: KPM	
DRAWN BY: KPM	
DATE: 14 JUL 15	
DRAWING NO: 2-14-095.B1	

LOG OF TEST BORING - GENERAL NOTES

DESCRIPTIVE SOIL CLASSIFICATION

SYMBOLS

GRAIN SIZE TERMINOLOGY

Soil Fraction	Particle Size	US Standard Sieve Size
Boulders	Larger than 75 mm	Larger than 3"
Gravel	2.00 to 75 mm	#10 to 75 mm
Sand: Coarse	0.425 to 2.00 mm	#40 to #10
Fine	0.075 to 0.425 mm	#200 to #40
Silt	0.002 to 0.075 mm	Smaller than #200
Clay	Smaller than 0.002 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

GENERAL TERMINOLOGY

- Physical Characteristics
- Color, moisture, grain shape, fineness, etc.
- Major Constituents
- Clay, silt, sand, gravel
- Structure
- Laminated, varved, fibrous, stratified, cemented, fissured, etc.
- Geologic Origin
- Glacial, alluvial, eolian, residual, etc.

RELATIVE PROPORTIONS OF COHESIONLESS SOILS

Term	Defining Range by % of Weight
Trace	1 - 10%
Little	11 - 20%
Some	21 - 35%
And	36 - 50%

ORGANIC CONTENT BY COMBUSTION METHOD

Soil Description	LOI
w/ trace organic matter	1 - 6%
w/ little organic matter	7 - 12%
w/ some organic matter	13 - 18%
Organic Soil (A-8)	19 - 30%
Peat (A-8)	More than 30%

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6-in. penetrations of the 2-in. split-barrel sampler. The sampler is driven with a 140-lb weight falling 30 in. and is seated to a depth of 6 in. before commencing the standard penetration test.

RELATIVE DENSITY

Term	"N" Value
Very loose	0 - 5
Loose	6 - 10
Medium dense	11 - 30
Dense	31 - 50
Very Dense	51+

CONSISTENCY

Term	"N" Value
Very soft	0 - 3
Soft	4 - 5
Med stiff	6 - 10
Stiff	11 - 15
Very Stiff	16 - 30
Hard	31+

PLASTICITY

Term	Plastic Index
None to slight	0 - 4
Slight	5 - 7
Medium	8 - 22
High/Very High	Over 22

DRILLING AND SAMPLING

- AS - Auger Sample
- BS - Bag Sample
- C - Casing: Size 2½", NW; 4", HW
- COA - Clean-Out Auger
- CS - Continuous Sampling
- CW - Clear Water
- DC - Driven Casing
- DM - Drilling Mud
- FA - Flight Auger
- FT - Fish Tail
- HA - Hand Auger
- HSA - Hollow Stem Auger
- NR - No Recovery
- PMT - Borehole Pressuremeter Test
- PT - 3" O.D. Piston Tube Sample
- PTS - Peat Sample
- RB - Rock Bit
- RC - Rock Coring
- REC - Recovery
- RQD - Rock Quality Designation
- RS - Rock Sounding
- S - Soil Sounding
- SS - 2" O.D. Split-Barrel Sample
- 2ST - 2" O.D. Thin-Walled Tube Sample
- 3ST - 3" O.D. Thin-Walled Tube Sample
- VS - Vane Shear Test
- WPT - Water Pressure Test

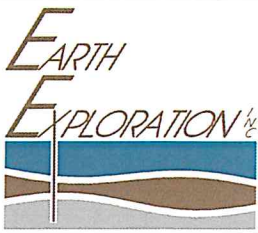
LABORATORY TESTS

- qp - Penetrometer Reading, tsf
- qu - Unconfined Strength, tsf
- W - Moisture Content, %
- LL - Liquid Limit, %
- PL - Plastic Limit, %
- PI - Plasticity Index
- SL - Shrinkage Limit, %
- LOI - Loss on Ignition, %
- γ - Dry Unit Weight, pcf
- pH - Measure of Soil Alkalinity/Acidity

WATER LEVEL MEASUREMENT

- BF - Backfilled upon Completion
- NW - No Water Encountered

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.



LOG OF TEST BORING

Project: **Roundabout Inters. Impr. at Marion/Mich./Main**
 Location: **South Bend, Indiana**
 Client: **Lawson-Fisher Associates P.C.**
 2204 Yankee Street - Niles, MI 49120
 269-262-4320 / 269-262-4479 (Fax)

Boring No.: **B-1**
 Elevation: **705.6**
 Datum: **NAVD 88**
 EEI Proj. No.: **2-14-095**
 Sheet: **1** of **1**

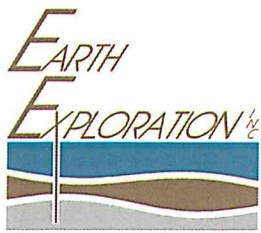
Proj. No.: **114-035** Station **32+25** Weather: **Cloudy** Driller: **C.N.**
 Struct. No.: **---** Offset: **8 ft Lt. "PR-B"** Temp.: **48° F** Inspector: **K.M.**

SAMPLE					DESCRIPTION/CLASSIFICATION and REMARKS	SOIL PROPERTIES							
No.	Type	Rec %	N Value	Depth ft Elev		q _p tsf	q _u tsf	P ₂₀₀ %	W %	LL %	PL %	PI %	
				705	ASPHALTIC CONCRETE (pavement - 9-3/8-in.)								
					BRICK (pavement - 3-3/8-in.)								
SS-1		65	34		SAND, medium dense, moist, yellowish brown, A-1-b(0) Lab No. 93710SL			9.1					
SS-2		80	5	5	SAND, loose to very loose, moist, strong brown, A-1-b Lab No. 93717SL								
SS-3		80	4	700									
SS-4		NR*	4	10									
SS-5		35	7	695									
SS-6		NR*	4	15									
						End of Boring at 15 ft							

* Drove sampler on large gravel or small cobble

WATER LEVEL OBSERVATIONS				GENERAL NOTES	
Depth ft	▽ While Drilling	▽ Upon Completion	▽ After Drilling	Start <u>4/30/15</u> End <u>4/30/15</u> Rig <u>CME 75</u> Drilling Method <u>3 1/4" I.D. HSA</u> Truck Remarks <u>Backfilled with auger cuttings and a Portland cement concrete patch.</u>	
To Water	<u>NW</u>	<u>NW</u>	<u>BF</u>		
To Cave-in		<u>6 1/2</u>			

The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.



LOG OF TEST BORING

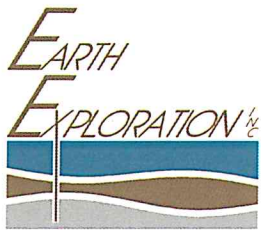
Project: **Roundabout Inters. Impr. at Marion/Mich./Main**
 Location: **South Bend, Indiana**
 Client: **Lawson-Fisher Associates P.C.**
 2204 Yankee Street - Niles, MI 49120
 269-262-4320 / 269-262-4479 (Fax)

Boring No.: **B-2**
 Elevation: **708.6**
 Datum: **NAVD 88**
 EEI Proj. No.: **2-14-095**
 Sheet: **1** of **1**

Proj. No.: **114-035** Station **36+74** Weather: **Partly Sunny** Driller: **C.N.**
 Struct. No.: **--** Offset: **4 ft Lt. "PR-B"** Temp.: **48° F** Inspector: **K.M.**

SAMPLE					DESCRIPTION/CLASSIFICATION and REMARKS	SOIL PROPERTIES						
No.	Type	Rec %	N Value	Depth ft Elev		q _p tsf	q _u tsf	P ₂₀₀ %	W %	LL %	PL %	PI %
					△ ASPHALTIC CONCRETE (pavement - 7-in.)							
					⊗ BRICK (pavement - 3-5/8-in.)							
SS-1		80	15		SAND, medium dense, moist, yellowish brown, A-1-b(0) Lab No. 93711SL			6.6				
SS-2		80	5	705	SAND, loose to very dense, moist, strong brown, A-1-a(0) Lab No. 93712SL							
SS-3		80	3	5								
SS-4		NR*	6	700								
SS-5		80	6	10	FINE SAND, loose to medium dense, moist, brownish yellow, A-3 Lab No. 93714SL							
SS-6		80	16	695								
				15	End of Boring at 15 ft * Drove sampler on large gravel or small cobble							

WATER LEVEL OBSERVATIONS				GENERAL NOTES	
Depth ft	▽ While Drilling	▽ Upon Completion	▽ After Drilling	Start	End
To Water	NW	NW	BF	4/30/15	4/30/15
To Cave-in		10½		Rig	CME 75
				Drilling Method	3¼" I.D. HSA Truck
				Remarks	Backfilled with auger cuttings and a Portland cement concrete patch.
The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.					



LOG OF TEST BORING

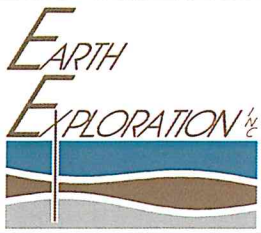
Project: **Roundabout Inters. Impr. at Marion/Mich./Main**
 Location: **South Bend, Indiana**
 Client: **Lawson-Fisher Associates P.C.**
 2204 Yankee Street - Niles, MI 49120
 269-262-4320 / 269-262-4479 (Fax)

Boring No.: **B-3**
 Elevation: **708.1**
 Datum: **NAVD 88**
 EEI Proj. No.: **2-14-095**
 Sheet: **1** of **1**

Proj. No.: **114-035** Station **38+89** Weather: **Sunny** Driller: **C.N.**
 Struct. No.: **---** Offset: **12 ft Rt. "PR-B"** Temp.: **51° F** Inspector: **K.M.**

SAMPLE					DESCRIPTION/CLASSIFICATION and REMARKS	SOIL PROPERTIES						
No.	Type	Rec %	N Value	Depth ft Elev		q _p tsf	q _u tsf	P ₂₀₀ %	W %	LL %	PL %	PI %
					ASPHALTIC CONCRETE (pavement - 3½-in.) BRICK (pavement - 3¾-in.)							
SS-1		100	12		SANDY LOAM, medium dense, moist, strong brown, A-2-4 Lab No. 93713SL							
				705								
SS-2		NR*	10		FINE SAND, medium dense, moist, brownish yellow, A-3 Lab No. 93714SL							
				5								
SS-3		100	11		SAND, medium dense, moist, light yellowish brown, A-1-b Lab No. 93715SL							
				700								
SS-4		100	11		FINE SAND, loose to medium dense, moist, yellowish brown, A-3 Lab No. 93714SL							
				10								
SS-5		100	11									
				695								
SS-6		100	26		SAND, medium dense, moist, yellowish brown, A-1-b Lab No. 93715SL							
				15								
					End of Boring at 15 ft							

WATER LEVEL OBSERVATIONS					GENERAL NOTES	
Depth ft	▽	While Drilling	▽	Upon Completion	▽	After Drilling
To Water		NW		NW		BF
To Cave-in				10½		
Start <u>4/30/15</u> End <u>4/30/15</u> Rig <u>CME 75</u> Drilling Method <u>3¼" I.D. HSA</u> Truck Remarks <u>Backfilled with auger cuttings and a Portland cement concrete patch.</u>						
The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.						



LOG OF TEST BORING

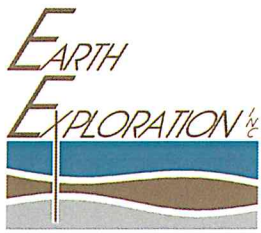
Project: **Roundabout Inters. Impr. at Marion/Mich./Main**
 Location: **South Bend, Indiana**
 Client: **Lawson-Fisher Associates P.C.**
 2204 Yankee Street - Niles, MI 49120
 269-262-4320 / 269-262-4479 (Fax)

Boring No.: **B-4**
 Elevation: **706.2**
 Datum: **NAVD 88**
 EEI Proj. No.: **2-14-095**
 Sheet: **1** of **1**

Proj. No.: **114-035** Station **91+70** Weather: **Cloudy** Driller: **C.N.**
 Struct. No.: **--** Offset: **18 ft Rt. "PR-B"** Temp.: **48° F** Inspector: **K.M.**

SAMPLE					DESCRIPTION/CLASSIFICATION and REMARKS	SOIL PROPERTIES						
No.	Type	Rec %	N Value	Depth ft Elev		q _p tsf	q _u tsf	P ₂₀₀ %	W %	LL %	PL %	PI %
				705	ASPHALTIC CONCRETE (pavement - 7/4-in.) GRANULAR BASE (limestone)							
SS-1	X	100	15		SANDY LOAM, medium dense, moist, yellowish red, A-2-4(0) Lab No. 93713SL			15.6				
SS-2	X	100	2	5	FINE SAND, very loose, moist, strong brown, A-3 Lab No. 93714SL							
SS-3	X	80	3	700	SAND, very loose, moist, yellowish brown, A-1-b Lab No. 93715SL							
SS-4	X	100	3	10	FINE SAND, loose to very dense, moist, yellowish brown, A-3 Lab No. 93714SL							
SS-5	X	80	12	695	SAND, medium dense, moist, yellowish brown, A-1-b Lab No. 93715SL							
SS-6	X	100	19	15								
					End of Boring at 15 ft							

WATER LEVEL OBSERVATIONS					GENERAL NOTES	
Depth ft	▽	While Drilling	▽	Upon Completion	▽	After Drilling
To Water		NW		NW		BF
To Cave-in				10		
Start <u>4/30/15</u> End <u>4/30/15</u> Rig <u>CME 75</u> Drilling Method <u>3/4" I.D. HSA</u> Truck Remarks <u>Backfilled with auger cuttings and a Portland cement concrete patch.</u>						
The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.						



LOG OF TEST BORING

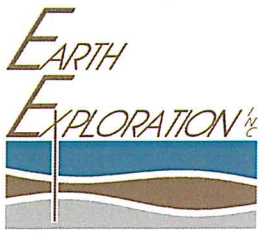
Project: **Roundabout Inters. Impr. at Marion/Mich./Main**
 Location: **South Bend, Indiana**
 Client: **Lawson-Fisher Associates P.C.**
 2204 Yankee Street - Niles, MI 49120
 269-262-4320 / 269-262-4479 (Fax)

Boring No.: **B-5**
 Elevation: **704.0**
 Datum: **NAVD 88**
 EEI Proj. No. **2-14-095**
 Sheet: **1** of **1**

Proj. No.: **114-035** Station **42+55** Weather: **Sunny** Driller: **C.N.**
 Struct. No.: **---** Offset: **13 ft Lt. "PR-E"** Temp.: **48° F** Inspector: **K.M.**

SAMPLE					DESCRIPTION/CLASSIFICATION and REMARKS	SOIL PROPERTIES						
No.	Type	Rec %	N Value	Depth ft Elev		q _p tsf	q _u tsf	P ₂₀₀ %	W %	LL %	PL %	PI %
					<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;"> △ ASPHALTIC CONCRETE (pavement - 5-5/8-in.) </div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;"> ⊗ BRICK (pavement - 3¼-in.) </div>							
SS-1	X	100	24		SANDY LOAM, medium dense, moist, yellowish brown, A-2-4 Lab No. 93713SL							
SS-2	X	100	7	700	FINE SAND, loose, moist, brownish yellow, A-3 Lab No. 93714SL							
SS-3	X	100	10									
SS-4	X	100	19	695	FINE SAND, medium dense, moist, very pale brown, A-3 Lab No. 93714SL							
SS-5	X	NR*	23									
SS-6	X	100	11	690	SAND, medium dense, moist, yellowish brown, A-1-b Lab No. 93715SL							
End of Boring at 15 ft												
* Drove sampler on large gravel or small cobble												

WATER LEVEL OBSERVATIONS					GENERAL NOTES	
Depth ft	▽	While Drilling	▽	Upon Completion	▽	After Drilling
To Water		NW		NW		BF
To Cave-in				12		
The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.					Start <u>4/29/15</u> End <u>4/29/15</u> Rig <u>CME 75</u> Drilling Method <u>3/4" I.D. HSA</u> Truck Remarks <u>Backfilled with auger cuttings and a Portland cement concrete patch.</u>	



LOG OF TEST BORING

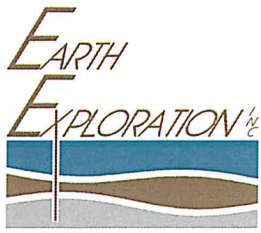
Project: **Roundabout Inters. Impr. at Marion/Mich./Main**
 Location: **South Bend, Indiana**
 Client: **Lawson-Fisher Associates P.C.**
 2204 Yankee Street - Niles, MI 49120
 269-262-4320 / 269-262-4479 (Fax)

Boring No.: **B-6**
 Elevation: **700.5**
 Datum: **NAVD 88**
 EEI Proj. No: **2-14-095**
 Sheet: **1** of **1**

Proj. No.: **114-035** Station **43+82** Weather: **Sunny** Driller: **C.N.**
 Struct. No.: **---** Offset: **25 ft Rt. "PR-B1"** Temp.: **55° F** Inspector: **K.M.**

SAMPLE					DESCRIPTION/CLASSIFICATION and REMARKS	SOIL PROPERTIES						
No.	Type	Rec %	N Value	Depth ft Elev		q _p tsf	q _u tsf	P ₂₀₀ %	W %	LL %	PL %	PI %
				700	ASPHALTIC CONCRETE (pavement - 3½-in.) BRICK (pavement - 7 7/8 in.)							
SS-1	X	100	2		SANDY LOAM, very loose, moist, dark brown, A-2-4 Lab No. 93713SL							
SS-2	X	100	9	5				3.1				
SS-3	X	100	12									
SS-4	X	100	34	10		FINE SAND, medium dense, moist, yellowish brown, A-3(0) Lab No. 93714SL						
SS-5	X	90	21									
SS-6	X	90	23									
				15	End of Boring at 15 ft							

WATER LEVEL OBSERVATIONS					GENERAL NOTES	
Depth ft	▽	While Drilling	▽	Upon Completion	▽	After Drilling
To Water		NW		NW		BF
To Cave-in				11		
The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.					Start <u>4/30/15</u> End <u>4/29/15</u> Rig <u>CME 75</u> Drilling Method <u>3¼" I.D. HSA</u> Truck Remarks <u>Backfilled with auger cuttings and a Portland cement concrete patch.</u>	



LOG OF TEST BORING

Project: **Roundabout Inters. Impr. at Marion/Mich./Main**
 Location: **South Bend, Indiana**
 Client: **Lawson-Fisher Associates P.C.**
 2204 Yankee Street - Niles, MI 49120
 269-262-4320 / 269-262-4479 (Fax)

Boring No.: **B-7**
 Elevation: **708.0**
 Datum: **NAVD 88**
 EEI Proj. No.: **2-14-095**
 Sheet: **1** of **1**

Proj. No.: **114-035** Station: **22+72** Weather: **Sunny** Driller: **C.N.**
 Struct. No.: **--** Offset: **8 ft Rt. "PR-A"** Temp.: **54° F** Inspector: **K.M.**

SAMPLE				Depth ft Elev	DESCRIPTION/CLASSIFICATION and REMARKS	SOIL PROPERTIES						
No.	Type	Rec %	N Value			q _p tsf	q _u tsf	P ₂₀₀ %	W %	LL %	PL %	PI %
				705	<div style="border: 1px solid black; padding: 2px; display: inline-block;"> △ △ ASPHALTIC CONCRETE (pavement - 6½-in.) × × BRICK (pavement - 4-in.) </div>							
SS-1	X	100	35		FINE SAND, dense, moist, yellowish brown, A-3 Lab No. 93714SL							
SS-2	X	100	16	5	SAND, medium dense, moist, yellowish brown, A-1-b Lab No. 93716SL							
SS-3	X	100	20	700				5.2				
SS-4	X	100	12	10	SAND, medium dense, moist, yellowish brown, A-1-b(0) Lab No. 93715SL							
SS-5	X	100	13	695								
SS-6	X	100	17	15	End of Boring at 15 ft							

WATER LEVEL OBSERVATIONS				GENERAL NOTES	
Depth ft	▽ While Drilling	▽ Upon Completion	▽ After Drilling	Start <u>4/29/15</u> End <u>4/29/15</u> Rig <u>CME 75</u> Drilling Method <u>3¼" I.D. HSA</u> Truck Remarks <u>Backfilled with auger cuttings and a Portland cement concrete patch.</u>	
To Water	<u>NW</u>	<u>NW</u>	<u>BF</u>		
To Cave-in		<u>10</u>			
The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.					



LOG OF TEST BORING

Project: **Roundabout Inters. Impr. at Marion/Mich./Main**
 Location: **South Bend, Indiana**
 Client: **Lawson-Fisher Associates P.C.**
 2204 Yankee Street - Niles, MI 49120
 269-262-4320 / 269-262-4479 (Fax)

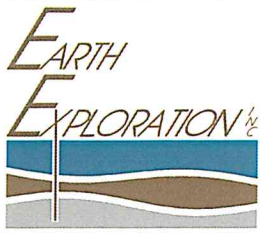
Boring No.: **B-8**
 Elevation: **707.5**
 Datum: **NAVD 88**
 EEI Proj. No.: **2-14-095**
 Sheet: **1** of **1**

Proj. No.: **114-035** Station **20+43** Weather: **Sunny** Driller: **C.N.**
 Struct. No.: **--** Offset: **30 ft Lt. "PR-A"** Temp.: **58° F** Inspector: **K.M.**

SAMPLE					DESCRIPTION/CLASSIFICATION and REMARKS	SOIL PROPERTIES						
No.	Type	Rec %	N Value	Depth ft Elev		q _p tsf	q _u tsf	P ₂₀₀ %	W %	LL %	PL %	PI %
					SANDY LOAM (topsoil)							
SS-1	X	90	14	705	SANDY LOAM, medium dense, moist, yellowish brown, A-2-4 Lab No. 93713SL							
SS-2	X	90	10	5								
SS-3	X	90	12	700	FINE SAND, medium dense, moist, yellowish brown, A-3 Lab No. 93714SL							
SS-4	X	90	9	10								
SS-5	X	90	12	695	SAND, medium dense, moist, yellowish brown, A-1-b Lab No. 93715SL							
SS-6	X	90	34	15								
					End of Boring at 15 ft							

WATER LEVEL OBSERVATIONS					GENERAL NOTES	
Depth ft	∇ While Drilling	∇ Upon Completion	∇ After Drilling		Start	End
To Water	NW	NW	BF		4/29/15	4/29/15
To Cave-in		11			Rig	CME 75
					Drilling Method	3 1/4" I.D. HSA Truck
					Remarks	Backfilled with auger cuttings and a Portland cement concrete patch.

The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.



LOG OF TEST BORING

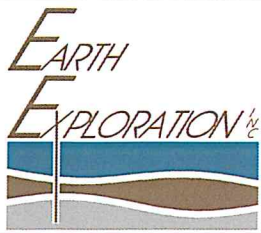
Project: **Roundabout Inters. Impr. at Marion/Mich./Main**
 Location: **South Bend, Indiana**
 Client: **Lawson-Fisher Associates P.C.**
 2204 Yankee Street - Niles, MI 49120
 269-262-4320 / 269-262-4479 (Fax)

Boring No.: **B-9**
 Elevation: **707.0**
 Datum: **NAVD 88**
 EEI Proj. No.: **2-14-095**
 Sheet: **1** of **1**

Proj. No.: **114-035** Station: **18+70** Weather: **Sunny** Driller: **C.N.**
 Struct. No.: **--** Offset: **15 ft Rt. "A"** Temp.: **60° F** Inspector: **K.M.**

SAMPLE				Depth ft Elev	DESCRIPTION/CLASSIFICATION and REMARKS	SOIL PROPERTIES						
No.	Type	Rec %	N Value			q _p tsf	q _u tsf	P ₂₀₀ %	W %	LL %	PL %	PI %
				705	 ASPHALTIC CONCRETE (pavement - 9¼-in.)							
SS-1	X	80	14		SAND , medium dense, moist, yellowish brown, A-1-b(0) Lab No. 93716SL			8.9				
SS-2	X	80	3	5				4.9				
SS-3	X	NR*	5	700	SAND , very loose to medium dense, moist, yellowish brown, A-1-b(0) Lab No. 91717SL							
SS-4	X	NR*	21	10								
SS-5	X	90	10	695	FINE SAND , medium dense, moist, yellowish brown, A-3 Lab No. 93714SL							
SS-6	X	35	66	15	SAND , very dense, moist, yellowish brown, A-1-b Lab No. 93715SL							
End of Boring at 15 ft												

WATER LEVEL OBSERVATIONS				GENERAL NOTES	
Depth ft	▽ While Drilling	▽ Upon Completion	▽ After Drilling	Start <u>4/29/15</u> End <u>4/29/15</u> Rig <u>CME 75</u> Drilling Method <u>3¼" I.D. HSA</u> Truck Remarks <u>Backfilled with auger cuttings and a Portland cement concrete patch.</u>	
To Water	<u>NW</u>	<u>NW</u>	<u>BF</u>		
To Cave-in		<u>11</u>			
The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.					



LOG OF TEST BORING

Project: **Roundabout Inters. Impr. at Marion/Mich./Main**
 Location: **South Bend, Indiana**
 Client: **Lawson-Fisher Associates P.C.**
 2204 Yankee Street - Niles, MI 49120
 269-262-4320 / 269-262-4479 (Fax)

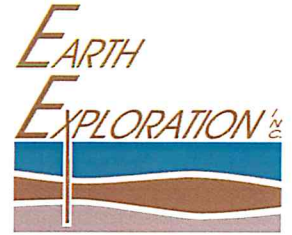
Boring No.: **B-10**
 Elevation: **706.0**
 Datum: **NAVD 88**
 EEI Proj. No.: **2-14-095**
 Sheet: **1** of **1**

Proj. No.: **114-035** Station: **14+35** Weather: **Sunny** Driller: **C.N.**
 Struct. No.: **---** Offset: **4 ft Rt. "A"** Temp.: **62° F** Inspector: **K.M.**

SAMPLE				Depth ft Elev	DESCRIPTION/CLASSIFICATION and REMARKS	SOIL PROPERTIES										
No.	Type	Rec %	N Value			q _p tsf	q _u tsf	P ₂₀₀ %	W %	LL %	PL %	PI %				
				705	△△ △△	ASPHALTIC CONCRETE (pavement - 11-1/8-in.)										
SS-1	X	65	15		SAND, medium dense, moist, yellowish brown, A-1-a Lab No. 93712SL											
SS-2	X	NR*	7	5												
SS-3	X	80	5	700												
SS-4	X	80	9	10		SAND, loose, moist, yellowish brown, A-1-b Lab No. 93717SL										
SS-5	X	80	8	695												
SS-6	X	80	9	15												
End of Boring at 15 ft																
* Drove sampler on large gravel or small cobble																

WATER LEVEL OBSERVATIONS				GENERAL NOTES		
Depth ft	▽ While Drilling	▽ Upon Completion	▽ After Drilling			
To Water	NW	NW	BF	Start <u>4/29/15</u> End <u>4/29/15</u> Rig <u>CME 75</u> Drilling Method <u>3/4" I.D. HSA</u> Truck Remarks <u>Backfilled with auger cuttings and a Portland cement concrete patch.</u>		
To Cave-in		11				
The stratification lines represent the approximate boundary between soil/rock types and the transition may be gradual.						

SUMMARY OF PAVEMENT CORES

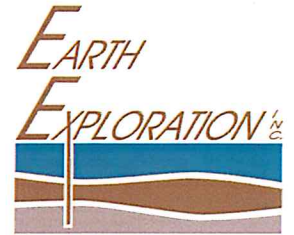


2204 Yankee Street
 Niles, MI 49120
 269-262-4320 or 574-233-6820
 (FAX) 269-262-4479

Project: Roundabout Intersection Improvement at
 Marion, Michigan and Main Streets
Location: South Bend, Indiana
Client: Lawson-Fisher Associates P.C.
EI Project No.: 2-14-095

Core No.	Depth (in)	Description of Core	Photograph
C-1	0 - 1½ 1½ - 2¾ 2¾ - 5 5 - 7¾ 7¾ - 9¾ 9¾ - 12¾	Asphaltic Concrete (Limestone & slag agg., ¾" max. agg.) Asphaltic Concrete (limestone aggregate, ¾" max. agg.) Asphaltic Concrete (limestone aggregate, ½" max. agg.) Asphaltic Concrete (limestone aggregate, ½" max. agg.) Asphaltic Concrete (limestone aggregate, ½" max. agg.) Brick	
C-2	0 - 1½ 1½ - 3½ 3½ - 7 7 - 10¾	Asphaltic Concrete (Limestone & slag agg., ¾" max. agg.) Asphaltic Concrete (limestone aggregate, ¾" max. agg.) Asphaltic Concrete (limestone aggregate, ½" max. agg.) Brick	

SUMMARY OF PAVEMENT CORES



2204 Yankee Street
 Niles, MI 49120
 269-262-4320 or 574-233-6820
 (FAX) 269-262-4479

Project: Roundabout Intersection Improvement at
 Marion, Michigan and Main Streets
Location: South Bend, Indiana
Client: Lawson-Fisher Associates P.C.
EI Project No.: 2-14-095

Core No.	Depth (in)	Description of Core	Photograph
C-3	0 - 1 ³ / ₈	Asphaltic Concrete (Limestone & slag agg., ³ / ₈ " max. agg.)	
	1 ³ / ₈ - 2	Asphaltic Concrete (natural aggregate, ³ / ₈ " max. agg.)	
	2 - 2 ⁵ / ₈	Asphaltic Concrete (limestone aggregate, ³ / ₈ " max. agg.)	
	2 ⁵ / ₈ - 3 ¹ / ₂	Asphaltic Concrete (limestone aggregate, ¹ / ₂ " max. agg.)	
	3 ¹ / ₂ - 7 ¹ / ₄	Brick	
C-4	0 - 2 ¹ / ₄	Asphaltic Concrete (limestone & slag agg., ³ / ₈ " max. agg.)	
	2 ¹ / ₄ - 3	Asphaltic Concrete (limestone aggregate, ³ / ₈ " max. agg.)	
	3 - 5 ³ / ₄	Asphaltic Concrete (natural aggregate, ¹ / ₂ " max. agg.)	
	5 ³ / ₄ - 7 ¹ / ₄	Asphaltic Concrete (natural aggregate, ¹ / ₄ " max. agg.)	

SUMMARY OF PAVEMENT CORES

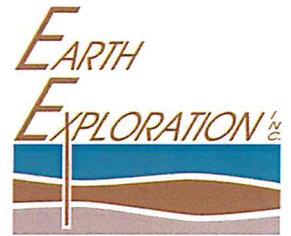


2204 Yankee Street
 Niles, MI 49120
 269-262-4320 or 574-233-6820
 (FAX) 269-262-4479

Project: Roundabout Intersection Improvement at
 Marion, Michigan and Main Streets
Location: South Bend, Indiana
Client: Lawson-Fisher Associates P.C.
EEL Project No.: 2-14-095

Core No.	Depth (in)	Description of Core	Photograph
C-5	0 - 1 ⁵ / ₈ 1 ⁵ / ₈ - 3 ³ / ₈ 3 ³ / ₈ - 5 ⁵ / ₈ 5 ⁵ / ₈ - 9 ³ / ₈	Asphaltic Concrete (limestone & slag agg., 3/4" max. agg.) Asphaltic Concrete (limestone aggregate, 3/8" max. agg.) Asphaltic Concrete (natural aggregate, 1/2" max. agg.) Brick	
C-6	0 - 1 ⁵ / ₈ 1 ⁵ / ₈ - 3 ¹ / ₂ 3 ¹ / ₂ - 11 ³ / ₈	Asphaltic Concrete (limestone & slag agg., 3/8" max. agg.) Asphaltic Concrete (natural aggregate, 1/2" max. agg.) Portland Cement Concrete	

SUMMARY OF PAVEMENT CORES



2204 Yankee Street
 Niles, MI 49120
 269-262-4320 or 574-233-6820
 (FAX) 269-262-4479

Project: Roundabout Intersection Improvement at
 Marion, Michigan and Main Streets

Location: South Bend, Indiana

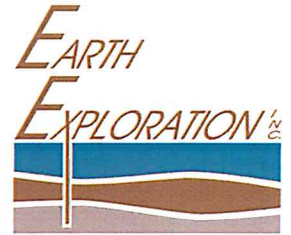
Client: Lawson-Fisher Associates P.C.

EEL Project No.: 2-14-095

PAGE 4 OF 5

Core No.	Depth (in)	Description of Core	Photograph
C-7	0 - 2 ³ / ₈ 2 ³ / ₈ - 6 ¹ / ₂ 6 ¹ / ₂ - 10 ¹ / ₂	Asphaltic Concrete (limestone aggregate, 1/2" max. agg.) Asphaltic Concrete (limestone aggregate, 3/4" max. agg.) Brick	
C-9	0 - 1 ¹ / ₄ 1 ¹ / ₄ - 3 ¹ / ₂ 3 ¹ / ₂ - 9 ¹ / ₄	Asphaltic Concrete (natural aggregate, 3/8" max. agg.) Asphaltic Concrete (limestone & slag agg., 3/8" max. agg.) Asphaltic Concrete (natural aggregate, 3/4" max. agg.)	

SUMMARY OF PAVEMENT CORES



2204 Yankee Street
 Niles, MI 49120
 269-262-4320 or 574-233-6820
 (FAX) 269-262-4479

Project: Roundabout Intersection Improvement at
 Marion, Michigan and Main Streets

Location: South Bend, Indiana

Client: Lawson-Fisher Associates P.C.

EEl Project No.: 2-14-095

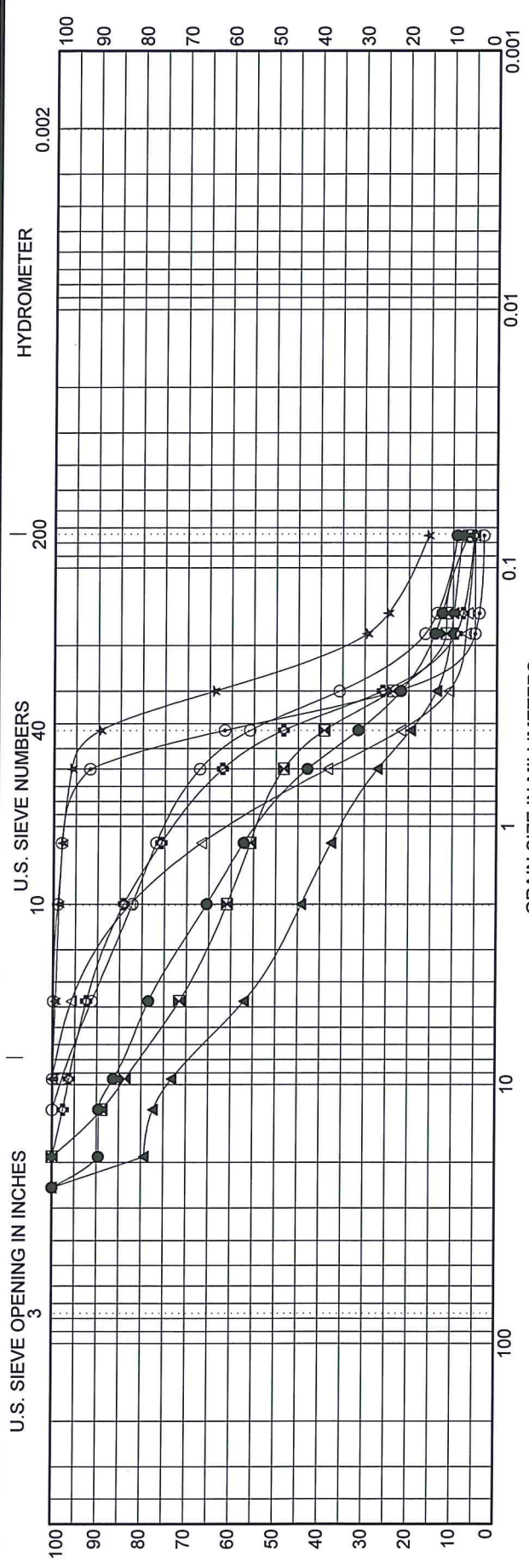
PAGE 5 OF 5

Core No.	Depth (in)	Description of Core	Photograph
C-10	0 - 1½	Asphaltic Concrete (limestone & slag agg., ¾" max. agg.)	
	1½ - 4¼	Asphaltic Concrete (slag & limestone agg., ¾" max. agg.)	
	4¼ - 6¼	Asphaltic Concrete (natural aggregate, ¾" max. agg.)	
	6¼ - 7½	Asphaltic Concrete (limestone aggregate, ¾" max. agg.)	
	7½ - 11½	Asphaltic Concrete (natural aggregate, ½" max. agg.)	

APPENDIX D

SUMMARY OF CLASSIFICATION TEST RESULTS

GRAIN SIZE DISTRIBUTION CURVE (8)



BOULDERS		GRAVEL		SAND		SILT		CLAY	
		coarse		fine					

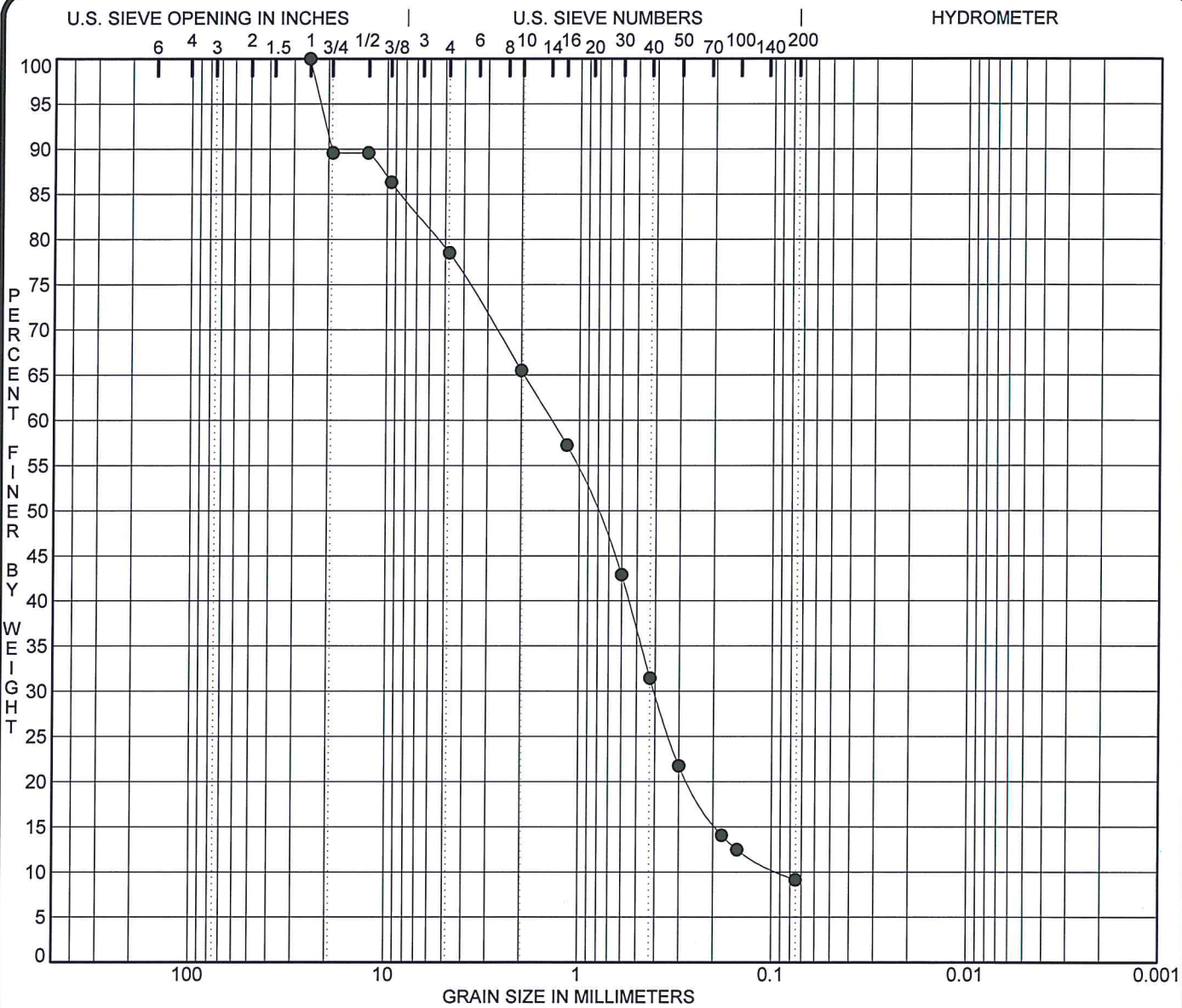
Lab No.	Boring	Station/Offset/Line	Sample No.	Depth ft	Classification	% Passing		% Gravel	% Sand	% Silt	% Clay	% Coll.	LL	PL	PI	Opt. Moist.	δ_{max} pcf	* CBR at 93% 97%	
						No.10	No.40	No.200											
● 93710SL	B-1	32+25 8 ft Lt. "PR-B"	SS-1	1.1 - 2.6	Sand A-1-b(0)	65.5	31.4	9.1	34.5	56.4	9.1		NP	NP	NP				
☒ 93711SL	B-2	36+74 4 ft Lt. "PR-B"	SS-1	1.0 - 2.5	Sand A-1-b(0)	61.0	39.1	6.6	39.0	54.4	6.6		NP	NP	NP				
▲ 93712SL	B-2	36+74 4 ft Lt. "PR-B"	SS-3	6.0 - 7.5	Sand A-1-a(0)	44.2	19.5	7.9	55.8	36.3	7.9		NP	NP	NP				
★ 93713SL	B-4	91+70 18 ft Rt. "PR-B"	SS-1	1.0 - 2.5	Sandy Loam A-2-4(0)	98.7	89.6	15.6	1.3	83.1	15.6		NP	NP	NP				
◎ 93714SL	B-6	43+82 25 ft Rt. "PR-B1"	SS-2	3.5 - 5.0	Fine Sand A-3(0)	99.0	61.6	3.1	1.0	95.9	3.1		NP	NP	NP				
⊕ 93715SL	B-7	22+72 8 ft Rt. "PR-A"	SS-3	6.0 - 7.5	Sand A-1-b(0)	84.2	48.3	5.2	15.8	78.9	5.2		NP	NP	NP				
○ 93716SL	B-9	18+70 15 ft Rt. "A"	SS-1	1.0 - 2.5	Fine Sand A-3(0)	82.2	55.9	8.9	17.8	73.3	8.9		NP	NP	NP				
△ 93717SL	B-9	18+70 15 ft Rt. "A"	SS-2	3.5 - 5.0	Sand A-1-b(0)	82.7	21.8	4.9	17.3	77.7	4.9		NP	NP	NP				

Project No. 114-035
Structure No. ---
EEl-SB Project No. 2-14-095
Project Location Client Roundabout Inters. Impr. at Marion/Mich./Main South Bend, Indiana Lawson-Fisher Associates P.C.

SUMMARY OF CLASSIFICATION TEST RESULTS

Earth Exploration, Inc.
 2204 Yankee Street, Niles, MI 49120
 269-262-4320 / 269-262-4379 (Fax)

* See text for recommended values.

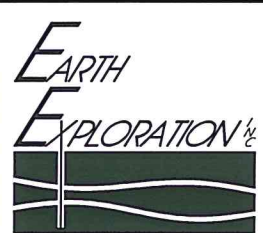


BOULDERS	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Sample Identification	Station / Offset / Line	Depth, ft.	Elevation, USCGS
● B-1 SS-1	32+25 8 ft Lt. "PR-B"	1.1 - 2.6 ft.	704.5 -

Lab No.	Classification	pH	%Gravel	%Sand	%Silt	%Clay	MC%	LL	PL	PI
93710SL	Sand A-1-b(0)		34.5	56.4	9.1			NP	NP	NP

Remarks:



Project No. 114-035 **Project** Roundabout Inters. Impr. at Marion/Mich./Main
Structure No. --- **Location** South Bend, Indiana
EEl-SB Proj. No. 2-14-095 **Client** Lawson-Fisher Associates P.C.

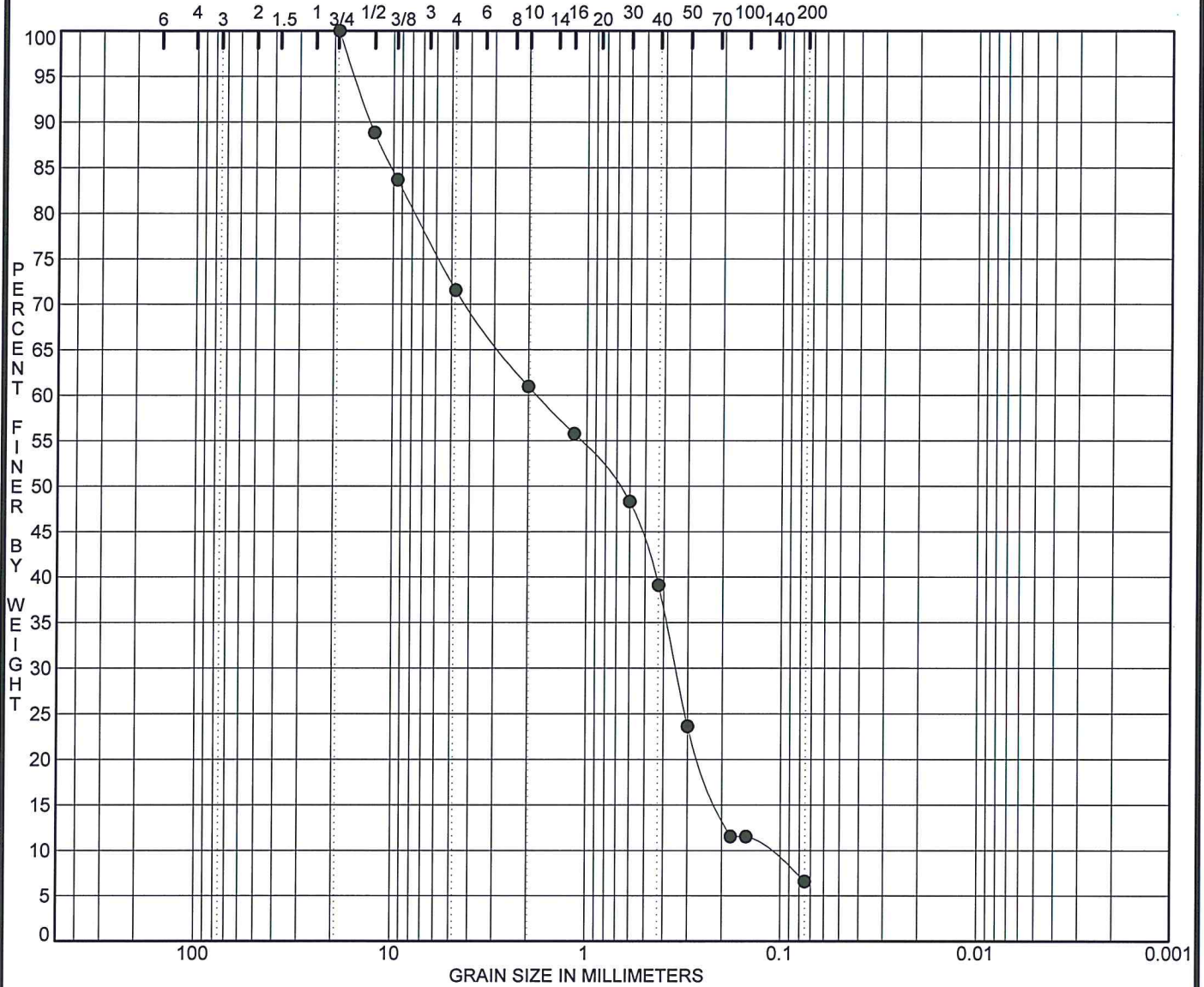
GRAIN SIZE DISTRIBUTION CURVE

Earth Exploration, Inc.
 2204 Yankee Street
 269-262-4320 / 269-262-4479 (Fax)

U.S. SIEVE OPENING IN INCHES

U.S. SIEVE NUMBERS

HYDROMETER



BOULDERS	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Sample Identification		Station / Offset / Line	Depth, ft.	Elevation, USCGS
● B-2	SS-1	36+74 4 ft Lt. "PR-B"	1.0 - 2.5 ft.	707.6 -

Lab No.	Classification	pH	%Gravel	%Sand	%Silt	%Clay	MC%	LL	PL	PI
93711SL	Sand A-1-b(0)		39.0	54.4	6	6		NP	NP	NP

Remarks:



Project No. 114-035

Structure No. ---

EEl-SB Proj. No. 2-14-095

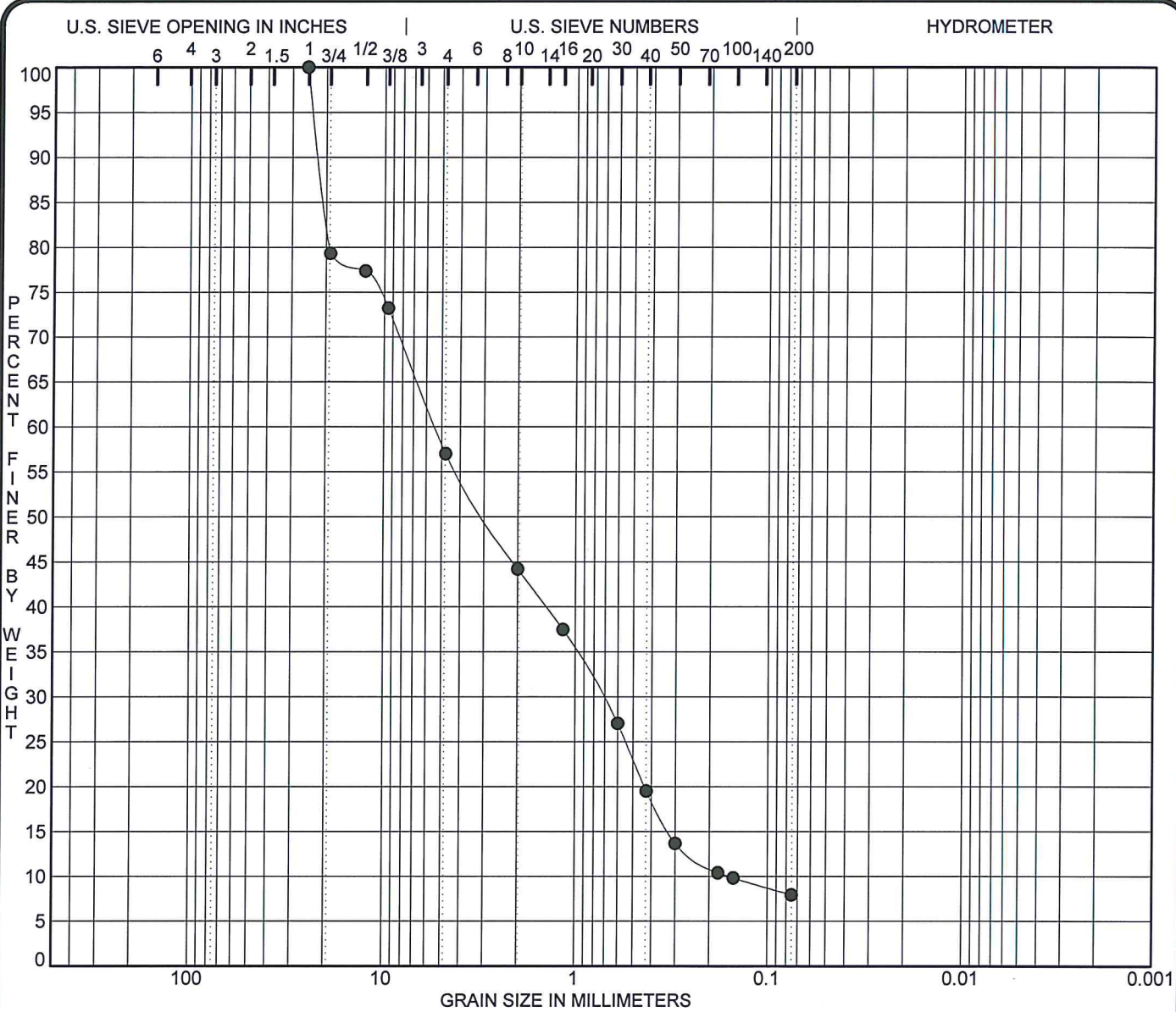
Project Roundabout Inters. Impr. at Marion/Mich./Main

Location South Bend, Indiana

Client Lawson-Fisher Associates P.C.

GRAIN SIZE DISTRIBUTION CURVE

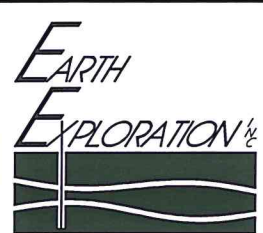
Earth Exploration, Inc.
2204 Yankee Street
269-262-4320 / 269-262-4479 (Fax)



BOULDERS	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Sample Identification		Station / Offset / Line		Depth, ft.	Elevation, USCGS					
● B-2	SS-3	36+74 4 ft Lt. "PR-B"		6.0 - 7.5 ft.	702.6 -					
Lab No.	Classification	pH	%Gravel	%Sand	%Silt	%Clay	MC%	LL	PL	PI
93712SL	Sand A-1-a(0)		55.8	36.3	7.9			NP	NP	NP

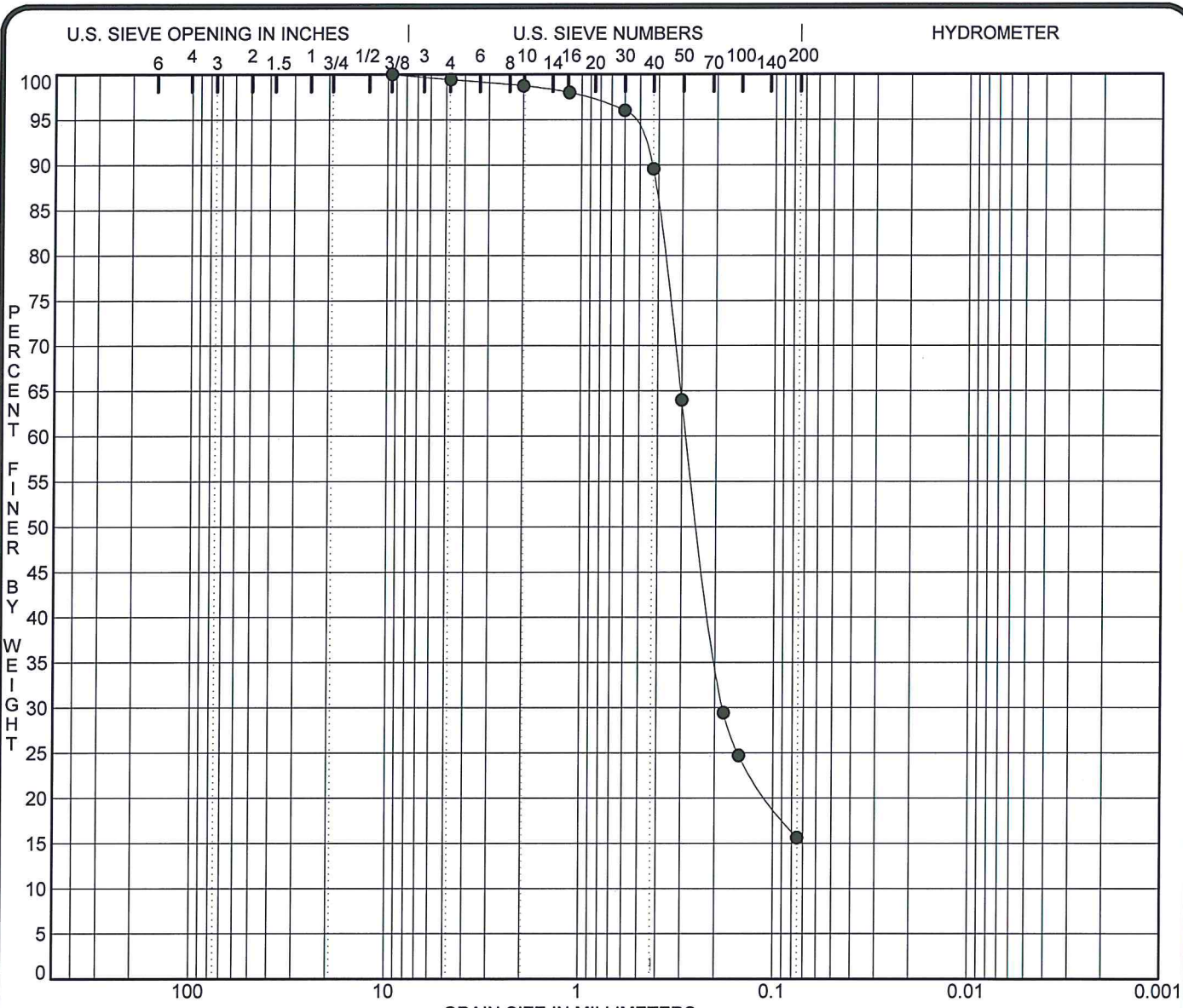
Remarks:



Project No. 114-035 **Project** Roundabout Inters. Impr. at Marion/Mich./Main
Structure No. --- **Location** South Bend, Indiana
EEl-SB Proj. No. 2-14-095 **Client** Lawson-Fisher Associates P.C.

GRAIN SIZE DISTRIBUTION CURVE

Earth Exploration, Inc.
 2204 Yankee Street
 269-262-4320 / 269-262-4479 (Fax)

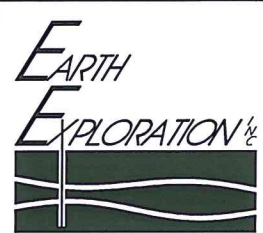


BOULDERS	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Sample Identification	Station / Offset / Line	Depth, ft.	Elevation, USCGS
● B-4 SS-1	91+70 18 ft Rt. "PR-B"	1.0 - 2.5 ft.	705.2 -

Lab No.	Classification	pH	%Gravel	%Sand	%Silt	%Clay	MC%	LL	PL	PI
93713SL	Sandy Loam A-2-4(0)		1.3	83.1	15.6			NP	NP	NP

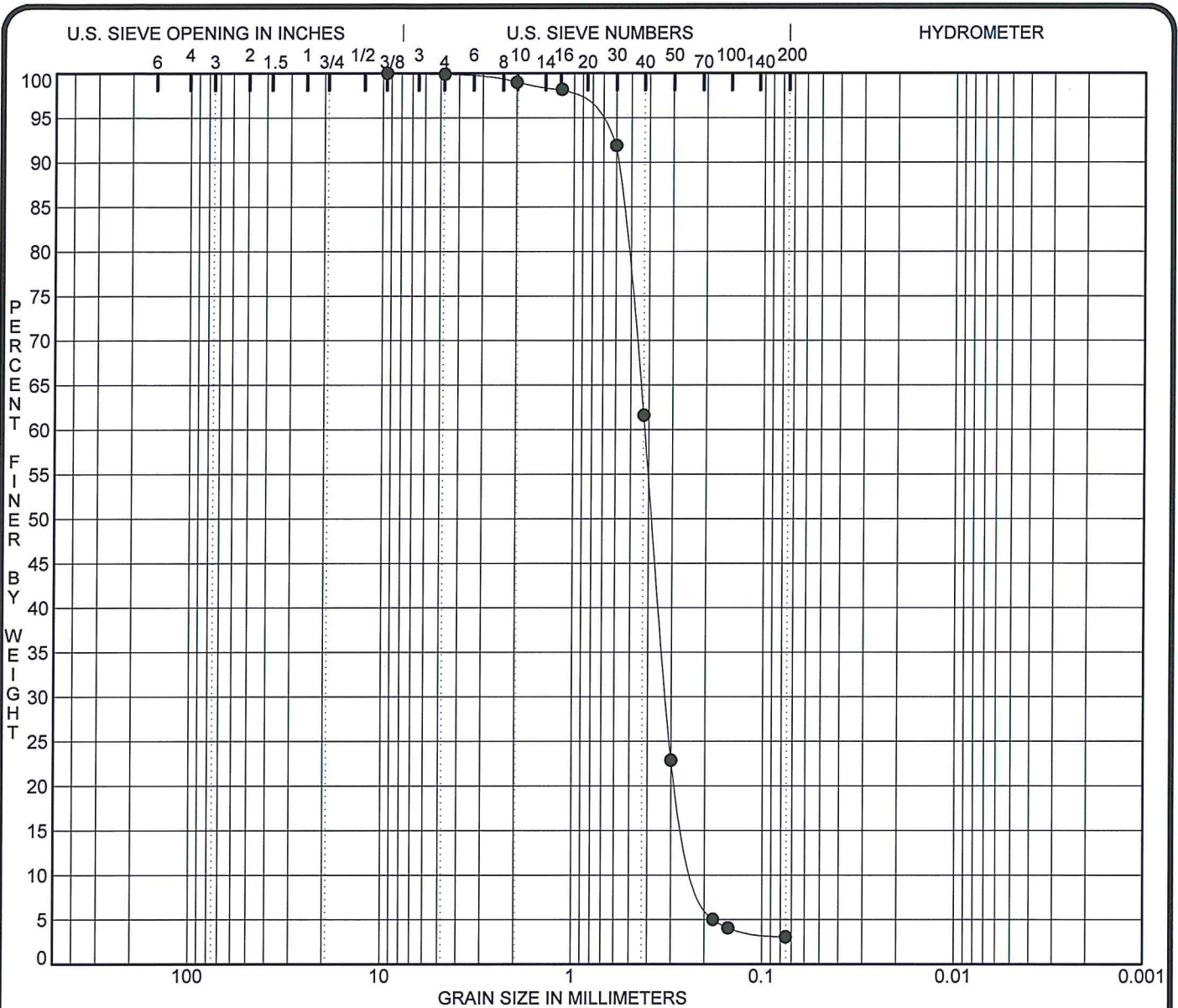
Remarks:



Project No. 114-035 **Project** Roundabout Inters. Impr. at Marion/Mich./Main
Structure No. --- **Location** South Bend, Indiana
EEl-SB Proj. No. 2-14-095 **Client** Lawson-Fisher Associates P.C.

GRAIN SIZE DISTRIBUTION CURVE

Earth Exploration, Inc.
 2204 Yankee Street
 269-262-4320 / 269-262-4479 (Fax)

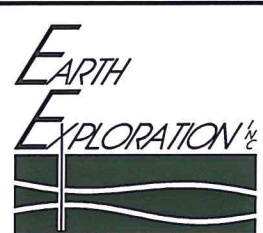


BOULDERS	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Sample Identification	Station / Offset / Line	Depth, ft.	Elevation, USCGS
● B-6 SS-2	43+82 25 ft Rt. "PR-B1"	3.5 - 5.0 ft.	697.0 -

Lab No.	Classification	pH	%Gravel	%Sand	%Silt	%Clay	MC%	LL	PL	PI
93714SL	Fine Sand A-3(0)		1.0	95.9	3.1			NP	NP	NP

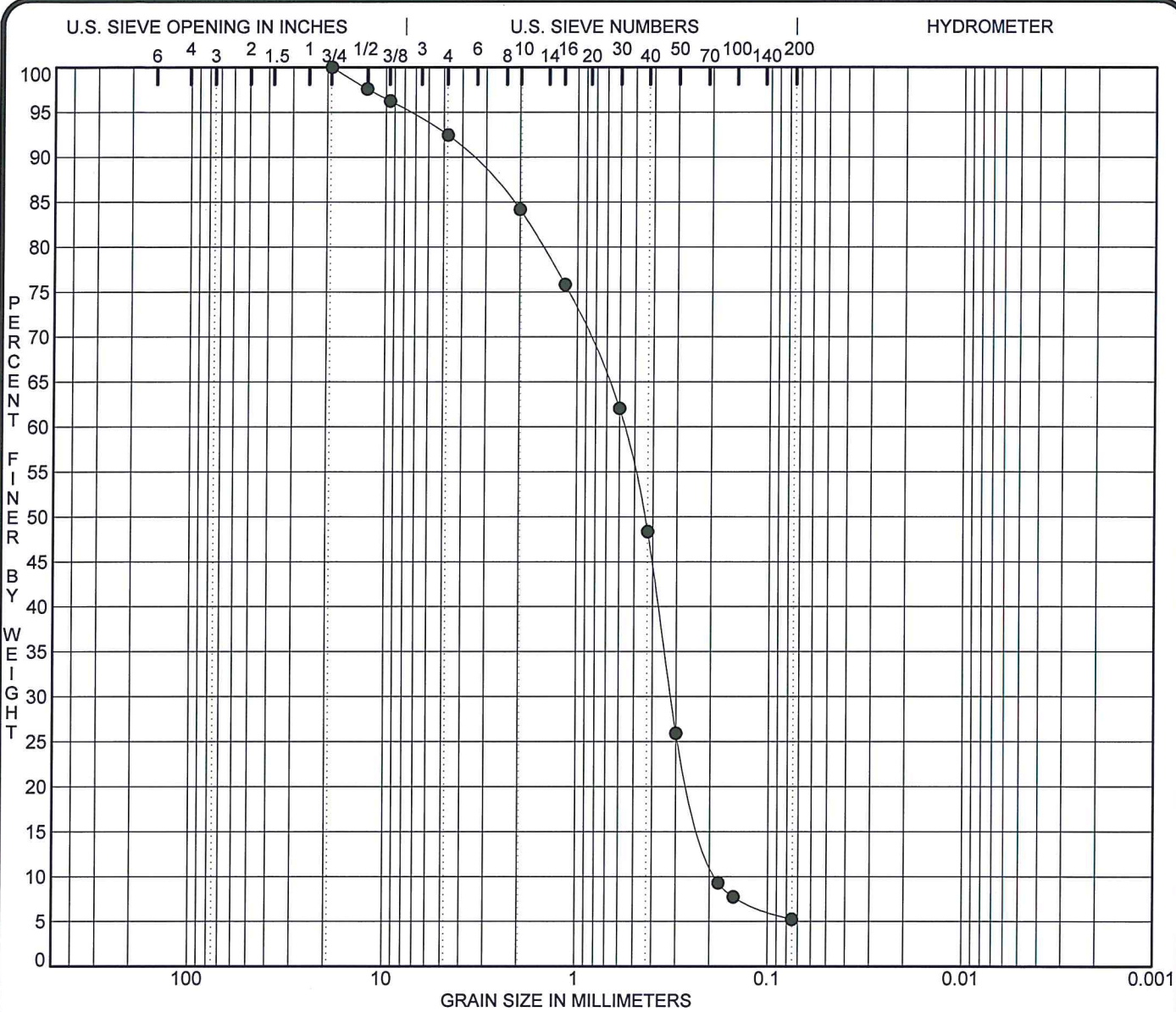
Remarks:



Project No. 114-035 **Project** Roundabout Inters. Impr. at Marion/Mich./Main
Structure No. --- **Location** South Bend, Indiana
EEL-SB Proj. No. 2-14-095 **Client** Lawson-Fisher Associates P.C.

GRAIN SIZE DISTRIBUTION CURVE

Earth Exploration, Inc.
 2204 Yankee Street
 269-262-4320 / 269-262-4479 (Fax)



BOULDERS	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Sample Identification		Station / Offset / Line		Depth, ft.	Elevation, USCGS					
● B-7	SS-3	22+72 8 ft Rt. "PR-A"		6.0 - 7.5 ft.	702.0 -					
Lab No.	Classification	pH	%Gravel	%Sand	%Silt	%Clay	MC%	LL	PL	PI
93715SL	Sand A-1-b(0)		15.8	78.9	5.2			NP	NP	NP

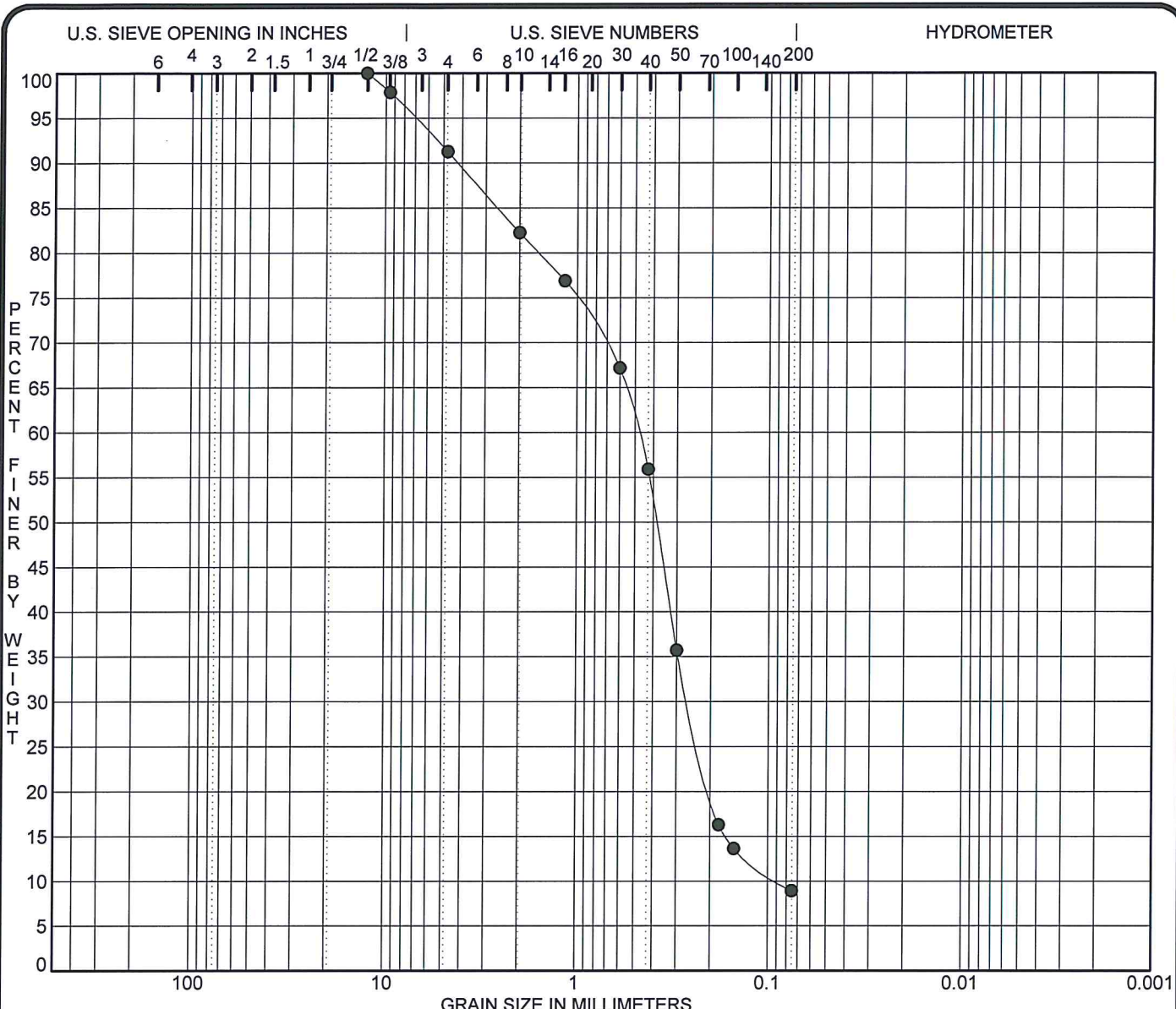
Remarks:



Project No. 114-035 **Project** Roundabout Inters. Impr. at Marion/Mich./Main
Structure No. --- **Location** South Bend, Indiana
EEl-SB Proj. No. 2-14-095 **Client** Lawson-Fisher Associates P.C.

GRAIN SIZE DISTRIBUTION CURVE

Earth Exploration, Inc.
 2204 Yankee Street
 269-262-4320 / 269-262-4479 (Fax)

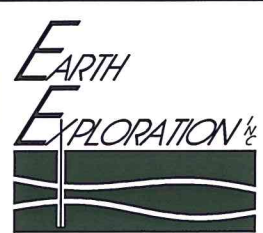


BOULDERS	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Sample Identification	Station / Offset / Line	Depth, ft.	Elevation, USCGS
● B-9 SS-1	18+70 15 ft Rt. "A"	1.0 - 2.5 ft.	706.0 -

Lab No.	Classification	pH	%Gravel	%Sand	%Silt	%Clay	MC%	LL	PL	PI
93716SL	Fine Sand A-3(0)		17.8	73.3	8.9			NP	NP	NP

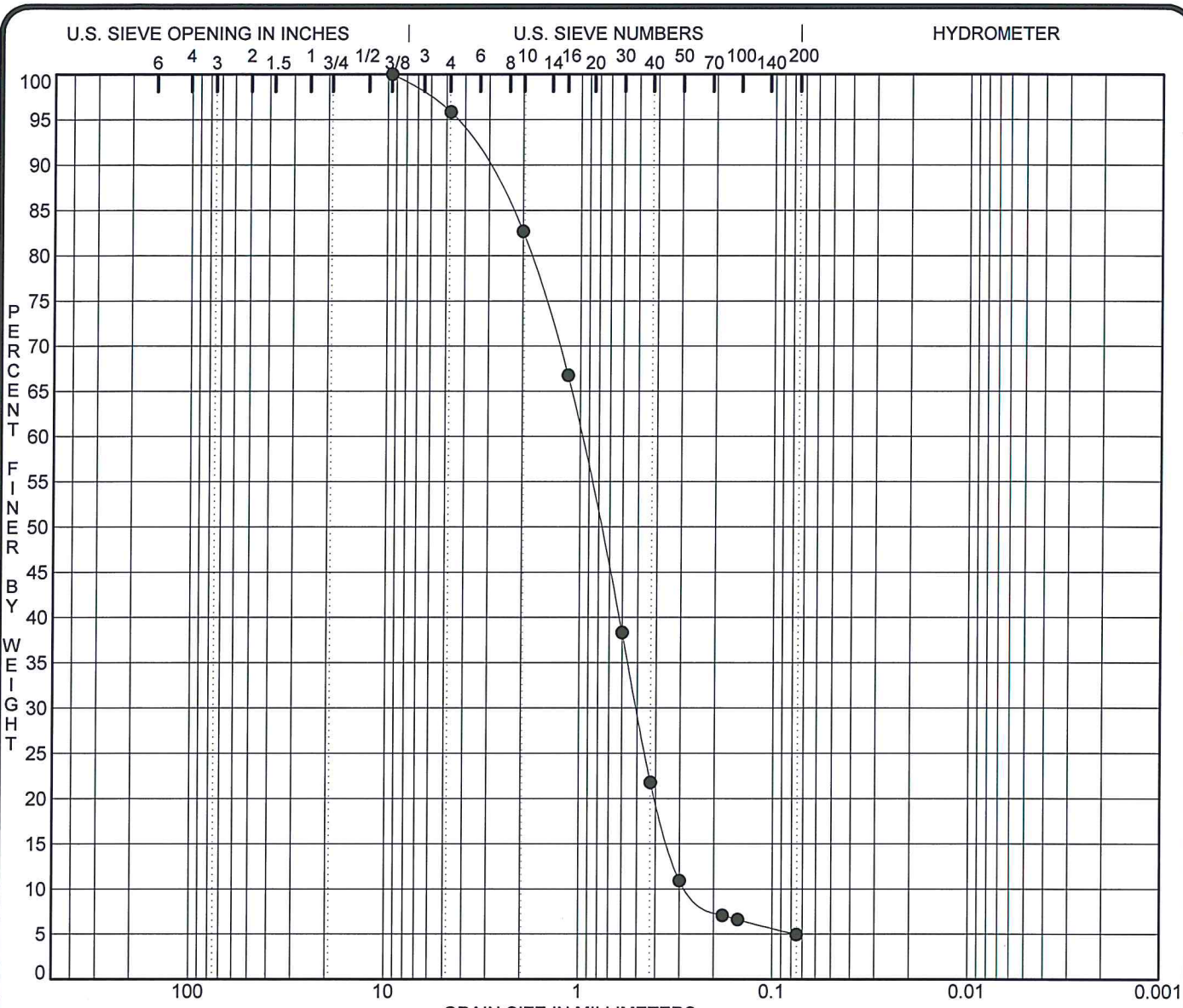
Remarks:



Project No. 114-035 **Project** Roundabout Inters. Impr. at Marion/Mich./Main
Structure No. --- **Location** South Bend, Indiana
EEl-SB Proj. No. 2-14-095 **Client** Lawson-Fisher Associates P.C.

GRAIN SIZE DISTRIBUTION CURVE

Earth Exploration, Inc.
 2204 Yankee Street
 269-262-4320 / 269-262-4479 (Fax)

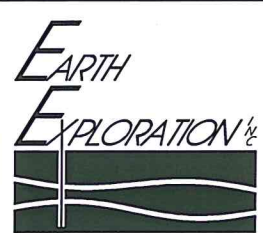


BOULDERS	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Sample Identification	Station / Offset / Line	Depth, ft.	Elevation, USCGS
● B-9 SS-2	18+70 15 ft Rt. "A"	3.5 - 5.0 ft.	703.5 -

Lab No.	Classification	pH	%Gravel	%Sand	%Silt	%Clay	MC%	LL	PL	PI
93717SL	Sand A-1-b(0)		17.3	77.7	4.9			NP	NP	NP

Remarks:



Project No. 114-035 **Project** Roundabout Inters. Impr. at Marion/Mich./Main
Structure No. --- **Location** South Bend, Indiana
EEl-SB Proj. No. 2-14-095 **Client** Lawson-Fisher Associates P.C.

GRAIN SIZE DISTRIBUTION CURVE

Earth Exploration, Inc.
 2204 Yankee Street
 269-262-4320 / 269-262-4479 (Fax)