



CITY of NOVI CITY COUNCIL

Agenda Item K
September 14, 2015

SUBJECT: Approval to award engineering design services to Spalding DeDecker Associates for the Novi Road Reconstruction (12 Mile to 13 Mile) project in the amount of \$91,581, and approval of an additional appropriation in the amount of \$37,000 from the Drain Fund for this budget line item.

SUBMITTING DEPARTMENT: Department of Public Services, Engineering Division *BTC RJA*

CITY MANAGER APPROVAL: *[Signature]*

| | |
|------------------------------|---|
| EXPENDITURE REQUIRED | \$ 54,949 (Road Funds) \$ 36,632 (Drain Funds) \$ 91,581 TOTAL |
| AMOUNT BUDGETED | \$ 90,295 (Road Funds) \$ 0 (Drain Funds) |
| APPRPRIATION REQUIRED | \$ 37,000 (Drain Funds from Fund Balance) |
| LINE ITEM NUMBER | 202-202.00-805.161 (Road Funds) 210-211.00-805.161 (Drain Funds) |

BACKGROUND INFORMATION:

The City was awarded a Federal grant for the rehabilitation of Novi Road between 12 Mile Road and 13 Mile Road in the amount of \$551,440 for construction in 2016. During the Special Budget Meeting on April 15, 2015, there was a request for staff to develop alternatives for the reconstruction of Novi Road that would reduce the amount of pavement and improve the aesthetics of the road. The attached August 12, 2015 memo and report evaluated five alternatives along with the original scope to simply repave the existing road. The alternatives were evaluated using various criteria gleaned from the discussion at the City Council meeting and underlying themes in City Council goals. Staff recommended the construction of alternative 2, which would remove the center turn lane where it is not necessary and replace it with a depressed, planted median island that would also contain aesthetically-pleasing bioswales to treat storm water.

The consultant selected for this project is Spalding DeDecker Associates (SDA). SDA's engineering fees are based on the fixed fee schedule established in the Agreement for Professional Engineering Services for Public Projects. The design fees for this project will be \$91,581 (6.35% of the estimated construction cost of \$1,442,226). The construction phase engineering fees will be awarded at the time of construction award and will be based on the contractor's bid price and fee percentage established in the Agreement for Professional Engineering Services for Public Projects. A draft of the Supplemental Professional Engineering Services Agreement for this project is enclosed and includes the project scope and estimate.

As explained in the attached memo, the cost to design and construct alternative 2 is higher than the original budget amount and the Federal grant is capped. Therefore, administration is proposing the use of drain funds to offset the construction costs for the additional drainage improvement that will be made as part of this project. As such, a budget resolution is included for consideration by City Council to budget \$37,000 from the fund balance in the Drain Fund for a portion of the design engineering of this project.

The design engineering is scheduled to be complete over the fall and winter for construction in spring 2016.

RECOMMENDED ACTION: Approval to award engineering design services to Spalding DeDecker Associates for the Novi Road Reconstruction (12 Mile to 13 Mile) project in the amount of \$91,581, and approval of an additional appropriation from the in the amount of \$37,000 from the Drain Fund for this budget line item.

| | 1 | 2 | Y | N |
|-------------------------------|---|---|---|---|
| Mayor Gatt | | | | |
| Mayor Pro Tem Staudt | | | | |
| Council Member Casey | | | | |
| Council Member Markham | | | | |

| | 1 | 2 | Y | N |
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| Council Member Mutch | | | | |
| Council Member Poupard | | | | |
| Council Member Wrobel | | | | |

RESOLUTION

NOW, THEREFORE BE IT RESOLVED that the following Budget Amendment for the Novi Road Reconstruction project in the Drain Fund is authorized:

| | INCREASE (DECREASE) |
|--|--------------------------------|
| DRAIN FUND | |
| APPROPRIATIONS | |
| Capital Outlay | 37,000 |
| TOTAL APPROPRIATIONS | <u>\$ 37,000</u> |
| Net Increase (Decrease) to Fund Balance | <u><u>\$ (37,000)</u></u> |

I hereby certify that the foregoing is a true and complete copy of a resolution adopted by the City Council of the City of Novi at a regular meeting held on September 14, 2015

Maryanne Cornelius
City Clerk

SUPPLEMENTAL PROFESSIONAL ENGINEERING SERVICES AGREEMENT

NOVI ROAD REHABILITATION (12 MILE TO 13 MILE)

This Agreement shall be considered as made and entered into as of the date of the last signature hereon, and is between the City of Novi, 45175 W. Ten Mile Road, Novi, MI 48375-3024, hereafter, "City," and Spalding DeDecker Associates, Inc., whose address is 905 South Boulevard, East, Rochester Hills, MI 48307, hereafter, "Consultant."

RECITALS:

This Agreement shall be supplemental to, and hereby incorporates the terms and conditions of the AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES FOR PUBLIC PROJECTS, and attached exhibits, entered into between the City and the Consultant on December 18, 2012.

The project includes the design and the preparation of plans and specifications for the rehabilitation of Novi Road between 12 Mile Road and 13 Mile Road

NOW, THEREFORE, in consideration of the foregoing, the City and Consultant agree as follows:

Section 1. Professional Engineering Services.

For and in consideration of payment by the City as provided under the "Payment for Engineering Services" section of this Agreement, Consultant shall perform the work described in the manner provided or required by the following Scope of Services, which is attached to and made a part of this Agreement as Exhibit A, all of said services to be done in a competent, efficient, timely, good and workmanlike manner and in compliance with all terms and conditions of this Agreement.

Exhibit A Scope of Services

Section 2. Payment for Professional Engineering Services.

1. Basic Fee.

- a. Design Phase Services: The Consultant shall complete the design phase services as described herein for a lump sum fee of \$91,581, which is 6.35 % of the estimated construction cost (\$1,442,226) as indicated on the design and construction engineering fee curve provided in Exhibit B of the Agreement for Professional Engineering Services for Public Projects.
- b. Construction Phase Services will be awarded at the time of construction award, should it occur.

2. Payment Schedule for Professional Engineering Services Fee.

Consultant shall submit monthly statements for professional engineering services rendered. The statements shall be based on Consultant's estimate of the proportion of the total services actually completed for each task as set forth in Exhibit A at the time of billing. The City shall confirm the correctness of such estimates, and may use the City's own engineer for such purposes. The monthly statements should be accompanied by such properly completed reporting forms and such other evidence of progress as may be required by the City. Upon such confirmation, the City shall pay the amount owed within 30 days.

Final billing under this agreement shall be submitted in a timely manner but not later than three (3) months after completion of the services. Billings for work submitted later than three (3) months after completion of services will not be paid. Final payment will be made upon completion of audit by the City.

3. Payment Schedule for Expenses.

All expenses required to complete the scope of services described herein, including but not limited to costs related to mileage, vehicles, reproduction, computer use, etc., shall be included in the basic fee and shall not be paid separately. However, as compensation for expenses that are not included in the standard scope of services, when incurred in direct connection with the project, and approved by the City, the City shall pay the Consultant its actual cost times a factor of 1.15.

Section 4. Ownership of Plans and Documents; Records.

1. Upon completion or termination of this agreement, all documents prepared by the Consultant, including tracings, drawings, estimates, specifications, field notes, investigations, studies, etc., as instruments of service shall become the property of the City.

2. The City shall make copies, for the use of the Consultant, of all of its maps, records, laboratory tests, or other data pertinent to the work to be performed by the Consultant under this Agreement, and also make available any other maps, records, or other materials available to the City from any other public agency or body.

3. The Consultant shall furnish to the City, copies of all maps, records, field notes, and soil tests that were developed in the course of work for the City and for which compensation has been received by the Consultant.

Section 5. Termination.

1. This Agreement may be terminated by either party upon 7- days' prior written notice to the other party in the event of substantial failure by the other party to fulfill its obligations under this agreement through no fault of the terminating party.

2. This Agreement may be terminated by the City for its convenience upon 90 days' prior written notice to the Consultant.

3. In the event of termination, as provided in this Article, the Consultant shall be paid as compensation in full for services performed to the date of that termination, an amount calculated in accordance with Section 2 of this Agreement. Such amount shall be paid by the City upon the Consultant's delivering or otherwise making available to the City, all data, drawings, specifications, reports, estimates, summaries, and that other information and materials as may have been accumulated by the Consultant in performing the services included in this Agreement, whether completed or in progress.

Section 6. Disclosure.

The Consultant affirms that it has not made or agreed to make any valuable gift whether in the form of service, loan, thing, or promise to any person or any of the person's immediate family, having the duty to recommend, the right to vote upon, or any other direct influence on the selection of consultants to provide professional engineering services to the City within the two years preceding the execution of this Agreement. A campaign contribution, as defined by Michigan law shall not be considered as a valuable gift for the purposes of this Agreement.

Section 7. Insurance Requirements.

1. The Consultant shall maintain at its expense during the term of this Agreement, the following insurance:

- A. Worker's Compensation insurance relative to all Personnel engaged in performing services pursuant to this Agreement, with coverage not less than that required by applicable law.
- B. Comprehensive General Liability insurance with maximum bodily injury limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate and minimum Property Damage limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate.
- C. Automotive Liability insurance covering all owned, hired, and non-owned vehicles with Personal Protection insurance to comply with the provisions of the Michigan No Fault Insurance Law including Residual Liability insurance with minimum bodily injury limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate minimum property damage limits of \$1,000,000 (One Million Dollars) each occurrence and/or aggregate.
- D. The Consultant shall provide proof of Professional Liability coverage in the amount of not less than \$1,000,000 (One Million Dollars) per occurrence and/or aggregate, and Environmental Impairment coverage.

2. The Consultant shall be responsible for payment of all deductibles contained in any insurance required hereunder.

3. If during the term of this Agreement changed conditions or other pertinent factors should in the reasonable judgment of the City render inadequate insurance limits, the Consultant will furnish on demand such additional coverage as may reasonably be required under the

circumstances. All such insurance shall be effected at the Consultant's expense, under valid and enforceable policies, issued by the insurers of recognized responsibility which are well-rated by national rating organizations and are acceptable to the City.

4. All policies shall name the Consultant as the insured and shall be accompanied by a commitment from the insurer that such policies shall not be canceled or reduced without at least thirty (30) days prior notice to the City.

With the exception of professional liability, all insurance policies shall name the City of Novi, its officers, agents, and employees as additional insured. Certificates of Insurance evidencing such coverage shall be submitted to Sue Morianti, Purchasing Manager, City of Novi, 45175 West Ten Mile Road, Novi, MI 48375-3024 prior to commencement of performance under this Agreement and at least fifteen (15) days prior to the expiration dates of expiring policies.

5. If any work is sublet in connection with this Agreement, the Consultant shall require each subconsultant to effect and maintain at least the same types and limits of insurance as fixed for the Consultant.

6. The provisions requiring the Consultant to carry said insurance shall not be construed in any manner as waiving or restricting the liability of the Consultant under this Agreement.

7. Coverage under the general and auto liability policies shall be considered to be the primary coverage rather than any policies and insurance or self-insurance retention owned or maintained by the City of Novi. This coverage shall be primary to the Additional Insureds, and not contributing with any other insurance or similar protection available to the Additional Insureds, whether other available coverage is primary, contributing or excess.

Section 8. Indemnity and Hold Harmless.

A. The Consultant agrees to indemnify and hold harmless the City, its elected and appointed officials and employees, from and against any and all claims, demands, suits, losses and settlements, including actual attorney fees incurred and all costs connected therewith, for any damages which may be asserted, claimed or recovered against the City by reason of personal injury, death and/or property damages which arises out of or is in any way connected or associated with the actions or inactions of the Consultant in performing or failing to perform the work.

The Consultant agrees that it is its responsibility and not the responsibility of the City to safeguard the property and materials used in performing this Agreement. Further, this Consultant agrees to hold the City harmless for any loss of such property and materials used pursuant to the Consultant's performance under this Agreement.

Section 9. Nondiscrimination.

The Consultant shall not discriminate against any employee, or applicant for employment because of race, color, sex, age or handicap, religion, ancestry, marital status, national origin, place of birth, or sexual preference. The Consultant further covenants that it will comply with

the Civil Rights Act of 1973, as amended; and the Michigan Civil Rights Act of 1976 (78. Stat. 252 and 1976 PA 4563) and will require a similar covenant on the part of any consultant or subconsultant employed in the performance of this Agreement.

Section 10. Applicable Law.

This Agreement is to be governed by the laws of the State of Michigan and the City of Novi Charter and Ordinances.

Section 11. Approval; No Release.

Approval of the City shall not constitute nor be deemed release of the responsibility and liability of Consultant, its employees, associates, agents and subconsultants for the accuracy and competency of their designs, working drawings, and specifications, or other documents and services; nor shall that approval be deemed to be an assumption of that responsibility by the City for any defect in the designs, working drawings and specifications or other documents prepared by Consultant, its employees, subconsultants, and agents.

After acceptance of final plans and special provisions by the City, Consultant agrees, prior to and during the construction of this project, to perform those engineering services as may be required by City to correct errors or omissions on the original plans prepared by Consultant and to change the original design as required.

Section 12. Compliance With Laws.

This Contract and all of Consultants professional services and practices shall be subject to all applicable state, federal and local laws, rules or regulations, including without limitation, those which apply because the City is a public governmental agency or body. Consultant represents that it is in compliance with all such laws and eligible and qualified to enter into this Agreement.

Section 13. Notices.

Written notices under this Agreement shall be given to the parties at their addresses on page one by personal or registered mail delivery to the attention of the following persons:

City: Rob Hayes, P.E., Director of Public Services and Maryanne
Cornelius, Clerk, with a copy to Thomas R. Schultz, City Attorney

Consultant: Cheryl Gregory, P.E.

Section 14. Waivers.

No waiver of any term or condition of this Agreement shall be binding and effective unless in writing and signed by all parties, with any such waiver being limited to that circumstance only and not applicable to subsequent actions or events.

Section 15. Inspections, Notices, and Remedies Regarding Work.

During the performance of the professional services by Consultant, City shall have the right to inspect the services and its progress to assure that it complies with this Agreement. If such inspections reveal a defect in the work performed or other default in this Agreement, City shall provide Consultant with written notice to correct the defect or default within a specified number of days of the notice. Upon receiving such a notice, Consultant shall correct the specified defects or defaults within the time specified. Upon a failure to do so, the City may terminate this Agreement by written notice and finish the work through whatever method it deems appropriate, with the cost in doing so being a valid claim and charge against Consultant; or, the City may preserve the claims of defects or defaults without termination by written notice to Consultant.

All questions which may arise as to the quality and acceptability of work, the manner of performance and rate of progress of the work, and the interpretation of plans and specifications shall be decided by the City. All questions as to the satisfactory and acceptable fulfillment of the terms of this agreement shall be decided by the City.

Section 16. Delays.

No charges or claims for damages shall be made by the Consultant for delays or hindrances from any cause whatsoever during the progress of any portions of the services specified in this agreement, except as hereinafter provided.

In case of a substantial delay on the part of the City in providing to the Consultant either the necessary information or approval to proceed with the work, resulting, through no fault of the Consultant, in delays of such extent as to require the Consultant to perform its work under changed conditions not contemplated by the parties, the City will consider supplemental compensation limited to increased costs incurred as a direct result of such delays. Any claim for supplemental compensation must be in writing and accompanied by substantiating data.

When delays are caused by circumstances or conditions beyond the control of the Consultant as determined by the City, the Consultant shall be granted an extension of time for such reasonable period as may be mutually agreed upon between the parties, it being understood, however, that the permitting of the Consultant to proceed to complete the services, or any part of them, after the date to which the time of completion may have been extended, shall in no way operate as a waiver on the part of the City of any of its rights herein set forth.

Section 17. Assignment.

No portion of the project work, heretofore defined, shall be sublet, assigned, or otherwise disposed of except as herein provided or with the prior written consent of the City. Consent to sublet, assign, or otherwise dispose of any portion of the services shall not be construed to relieve the Consultant of any responsibility for the fulfillment of this agreement.

Section 18. Dispute Resolution.

The parties agree to try to resolve any disputes as to professional engineering services or otherwise in good faith. In the event that the parties cannot resolve any reasonable dispute, the

parties agree to seek alternative dispute resolution methods agreeable to both parties and which are legally permissive at the time of the dispute. The parties agree to use their best efforts to resolve any good faith dispute within 90 (ninety) days notice to the other party. In the event the parties cannot resolve that dispute as set forth above, they may seek such remedies as may be permitted by law.

WITNESSES

SPALDING DEDECKER ASSOCIATES, INC.

By:

Its:

The foregoing _____ was acknowledged before me this ____ day of _____, 20____, by _____ on behalf of _____.

Notary Public

_____ County, Michigan

My Commission Expires: _____

WITNESSES

CITY OF NOVI

By:

Its:

The foregoing _____ was acknowledged before me this ____ day of _____, 20____, by _____ on behalf of the City of Novi.

Notary Public

Oakland County, Michigan

My Commission Expires: _____

EXHIBIT A - SCOPE OF SERVICES

Consultant shall provide the City professional engineering services in all phases of the Project to which this Agreement applies as hereinafter provided. These services will include serving as the City's professional engineering representative for the Project, providing professional engineering consultation and advice and furnishing customary civil, structural, mechanical and electrical engineering services and customary engineering services incidental thereto, as described below.

A. Basic Services.

[see attached]

B. Performance.

1. The Consultant agrees that, immediately upon the execution of this Agreement, it will enter upon the duties prescribed in this agreement, proceed with the work continuously, and make the various submittals on or before the dates specified in the attached schedule. The City is not liable and will not pay the Consultant for any services rendered before written authorization is received by the Consultant.
2. The Consultant shall submit, and the City shall review and approve a timeline for submission of plans and/or the completion of any other work required pursuant to this Scope of Services. The Consultant shall use its best efforts to comply with the schedule approved by the City.
3. If any delay is caused to the Consultant by order of the City to change the design or plans; or by failure of the city to designate right-of-way, or to supply or cause to be supplied any data not otherwise available to the Consultant that is required in performing the work described; or by other delays due to causes entirely beyond the control of the Consultant; then, in that event, the time schedules will be adjusted equitably in writing, as mutually agreed between the City and the Consultant at the moment a cause for delay occurs.
4. Since the work of the Consultant must be coordinated with the activities of the City (including firms employed by and governmental agencies and subdivisions working with the City), the Consultant shall advise the City in advance, of all meetings and conferences between the Consultant and any party, governmental agency, political subdivision, or third party which is necessary to the performance of the work of the Consultant.

City of Novi

Novi Road (12 Mile Road to 13 Mile Road)

Project Scope

September 1, 2015

Project Overview and Understanding of Requested Services

Spalding DeDecker (SD) prepared a technical memo in July 2015 that evaluated 5 different alternatives for the rehabilitation of Novi Road from 12 Mile Road to 13 Mile Road. The alternatives were presented to the Novi City Council on August 24, 2015 and they unanimously chose Alternative 2. Alternative 2 takes the existing 5 lane curbed roadway and converts it to a 4 lane roadway with an uncurbed median shoulder and a depressed median to collect and treat storm water. The remaining roadway will be milled, interlayer will be placed on the milled surface and the roadway will be overlaid.

Spalding DeDecker proposes to design the reconstruction of Novi Road based on the preferred Alternative 2 cross section. The project is on the 2016 TIP and design will follow MDOT's Local Agency Programs (LAP) process. The total project length is approximately 6,450'.

Proposed Scope of Services

SD's scope will include:

- SD will perform a topographic survey of the existing roadway from back of curb to back of curb. Sidewalk ramps included in the project will also be surveyed to determine if they meet current ADA standards. This survey will include all above ground features including the drain crossings and existing utilities. Trees and the existing pathway will not be surveyed since the proposed work is limited to the existing footprint of the road.
- Soil borings and geotechnical investigation will be required as part of this project. Soil borings and geotechnical investigation are not included in our estimate and will be paid for separately by the City. It is estimated that 8 borings will be needed for the project.
- SD will prepare the Program Application for submittal to the MDOT LAP Project Manager.
- SD will design the roadway to have two 12 foot thru lanes in each direction with an uncurbed median shoulder and a depressed median. The existing intersection geometry at Old Novi Road and 13 Mile Road will be retained. The existing outside drainage will be maintained and the center median will be depressed to collect and treat storm water. No improvements for multimodal usage are included in the project. The existing pathway will be maintained and sidewalk ramps within the project limits will be upgraded to meet current ADA standards when necessary. Ramp upgrades at the intersections of 12 Mile Road and 13 Mile Road will not be included in the project.
- SD will inspect City owned water, sanitary and storm structures to determine the type of rehabilitation necessary. Private utility structures will be noted and marked as adjusted by others on the plans.

- SD will prepare and submit the Grade Inspection Package to the MDOT LAP Project Manager.
- SD will prepare and submit Final Plans, Proposal & Estimate to the MDOT LAP Project Manager.
- No permanent ROW acquisition will be required for this project. Temporary Grading Easements may be required for sidewalk ramp reconstruction.
- A hydrological study of area drainage patterns is not included in this scope of services.
- Guardrail evaluation and replacement is not included in this scope of services.

Construction Cost Estimate and Proposed Fees

Based on our pre-qualification status with the City, engineering design fees are based on a percentage of the pre-design construction cost estimate. The fee percentage used depends on the type of services to be provided based on the proposed work. The fees for this project will be based on the Opinion of Probable Construction Costs for Alternative 2 included in the technical memo and will follow the "Road Construction" rates in the fee table.

| <u>Project</u> | <u>Construction Budget</u> | <u>Design Fee Rate</u> | <u>Proposed Design Fee</u> |
|---|----------------------------|------------------------|----------------------------|
| Novi Road, 12 Mile Road to 13 Mile Road | \$1,442,226.75 | 6.35% | \$91,581.00 |

Project Schedule

The following summarizes the anticipated schedule for the pathway project:

| <u>Milestone</u> | <u>Completed By</u> |
|---------------------------------|---------------------|
| Design Project Award | 9/15/2015 |
| Kickoff Meeting | 9/18/2015 |
| Begin Survey Field Work | 9/19/2015 |
| Submit Program Application | 11/30/2015 |
| Submit Grade Inspection Package | 12/14/2015 |
| Final Plans to LAP | 2/19/2016 |
| Bid Letting | 5/6/2016 |
| Construction Start | June 2016 |
| Construction Completion | September 2016 |

Thank you for your selection of SDA to provide design services for the Novi Road project. Please don't hesitate to contact me if you have any questions or comments regarding this submittal.

SPALDING DEDECKER ASSOCIATES, INC.



Edward Strada, P.E.

Project Manager

OPINION OF PROBABLE CONSTRUCTION COST

 PROJECT NAME: Novi Road - Alternative #2
 CLIENT NAME: CITY OF NOVI
 PREPARED BY: EI/ES

 PROJECT NO: NV15006
 DATE: 07/10/15

| NO. | ITEM | QUANTITY | UNIT | UNIT PRICE | TOTAL AMOUNT |
|--------------------------------------|--|----------|------|--------------|-----------------|
| 1 | Bonds, Insurance and Mobilization (5% Max) | 1 | LS | \$ 69,591.75 | \$ 69,591.75 |
| 2 | Pre-Construction Audio-Visual | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 3 | Soil Erosion Control Measures | 1 | LS | \$ 4,000.00 | \$ 4,000.00 |
| 4 | Maintaining Traffic | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Tree Protection Fencing | 0 | LF | \$ 5.00 | \$ - |
| 6 | Remove Tree, (6"-18") | 0 | EA | \$ 750.00 | \$ - |
| 7 | Pavement, Remove | 6,100 | SY | \$ 12.00 | \$ 73,200.00 |
| 8 | Pavement Repair, Rem, Modified | 0 | SY | \$ 12.00 | \$ - |
| 9 | Cold Milling HMA Pavement, Special | 39,823 | SY | \$ 6.00 | \$ 238,938.00 |
| 10 | Driveway, Remove | 0 | SY | \$ 9.00 | \$ - |
| 11 | Sidewalk, Remove | 0 | SF | \$ 3.00 | \$ - |
| 12 | Concrete Curb and Gutter, Remove | 0 | LF | \$ 10.00 | \$ - |
| 13 | Subgrade Undercut (As Needed) | 598 | CY | \$ 40.00 | \$ 23,920.00 |
| 14 | Pathway Grading | 0 | STA | \$ 3,000.00 | \$ - |
| 15 | Underdrain, 6 Inch, w/Geotextile Trench Wrap | 0 | LF | \$ 13.00 | \$ - |
| 16 | Aggregate Base, 6 Inch | 6,100 | SY | \$ 15.00 | \$ 91,500.00 |
| 17 | HMA, 5E1 | 5,227 | Ton | \$ 95.00 | \$ 496,565.00 |
| 18 | Interlayer | 39,823 | SY | \$ 4.00 | \$ 159,292.00 |
| 19 | HMA Surface Repair | 5,974 | SY | \$ 30.00 | \$ 179,220.00 |
| 20 | Curb and Gutter, Conc | 0 | LF | \$ 30.00 | \$ - |
| 21 | Driveway, Nonreinf Conc, 6 Inch | 0 | SY | \$ 42.00 | \$ - |
| 22 | Sidewalk, Conc, 4 Inch | 0 | SF | \$ 5.00 | \$ - |
| 23 | ADA Ramp Improvements | 34 | EA | \$ 750.00 | \$ 25,500.00 |
| 24 | Monument Adjustment Allowance | 1,500 | DLR | \$ 1.00 | \$ 1,500.00 |
| 25 | Permit Allowance | 1,000 | DLR | \$ 1.00 | \$ 1,000.00 |
| 26 | Drainage | 1 | LS | \$ 38,000.00 | \$ 38,000.00 |
| 27 | Permanent Pavement Markings & Signing | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 28 | Restoration | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 29 | Inspection Crew Days | 30 | DAY | \$ 640.00 | \$ 19,200.00 |
| Estimated Construction Cost Subtotal | | | | | \$ 1,461,426.75 |
| Contingency (5%) | | | | | \$ 73,071.34 |

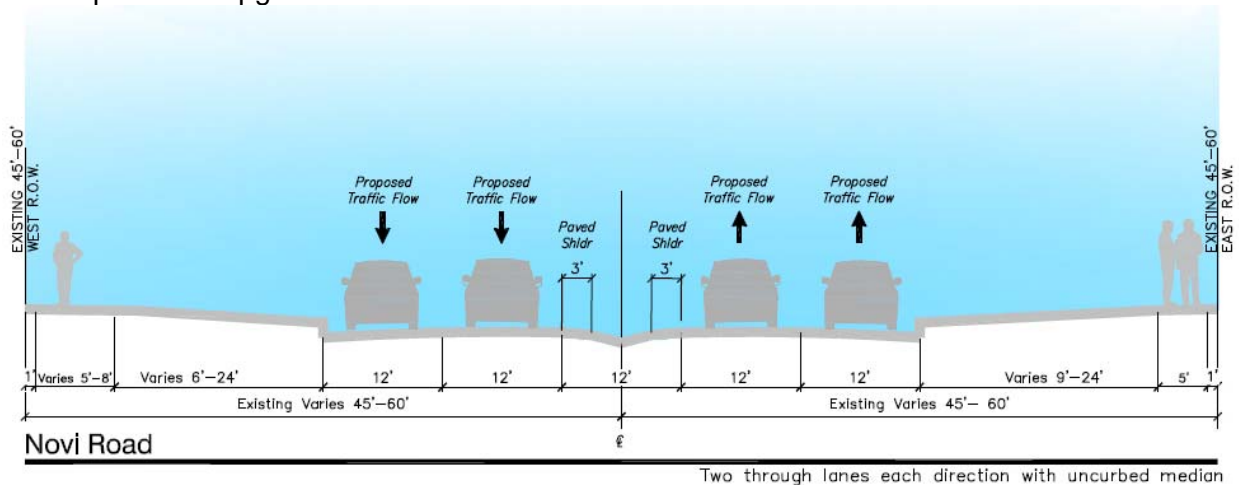
| | |
|--|---|
| OPINION OF PROBABLE CONSTRUCTION COST | Total Estimated Construction Cost: \$ 1,534,498.09 |
|--|---|

In providing opinions of probable construction cost, the Client understands that the Consultant has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing, and that the Consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgement and experience. The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

ALTERNATIVE 2:

Proposed Treatment: Maintain outside curbs and change the cross-section to a curbed four lane section, remove center turn lane where not necessary and replace with an uncurbed median shoulder and a depressed median to collect and treat storm water. Mill the remaining HMA roadway 2", place interlayer and overlay with 2" of HMA.

Geometric Design: The proposed section consists of two 12 foot through lanes in each direction with a paved shoulder and a depressed median. The existing intersection geometry at Old Novi Road and 13 Mile Road will be retained, providing left turn lanes with a minimum 100 foot storage. All ramps will be upgraded to meet current ADA standards.



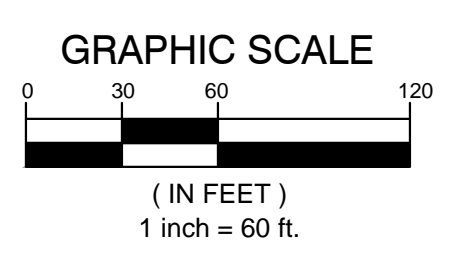
Drainage: The existing outside drainage will be maintained. The center median will be depressed to collect and treat storm water.

Safety: The center median will help achieve traffic calming, better channelization and a reduction in left turn head on crashes. In winter, snowfall may obscure the depressed median creating a hazard for motorists. Delineators can be added to help motorists identify where the median is.

Multimodal usage: No improvements for multimodal usage are proposed. The existing pathway will be maintained and sidewalk ramps will be upgraded to meet current ADA standards.

Estimated Construction Cost: \$1,534,498.09

Feasibility: This alternative is similar to Alternative 1 and provides a basic change to the current operations. The use of a depressed center median to collect storm water provides a green alternative for storm water treatment and reduces the load on the existing drainage system. A geotechnical investigation will be necessary to identify the underlying soils and determine if they are suitable to drain the storm water in the median.



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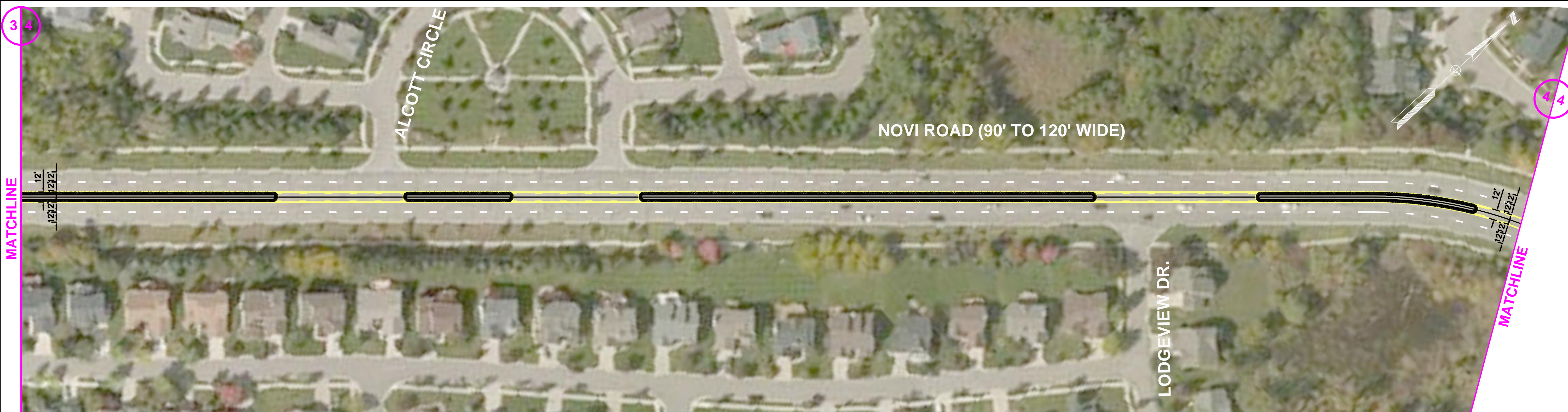
**NOVI ROAD
(12 MILE ROAD
TO 13 MILE ROAD)**

ALTERNATIVE 2

SECTION 11 PRIVATE CLAIM
TOWN 1 NORTH RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY

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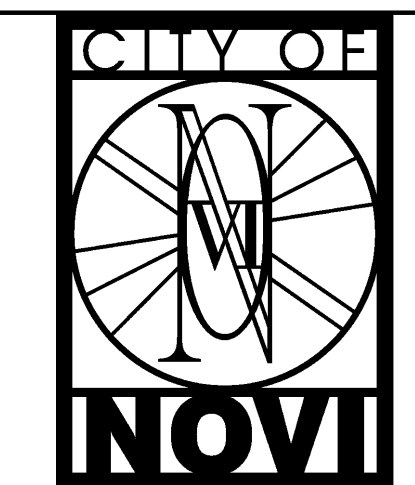
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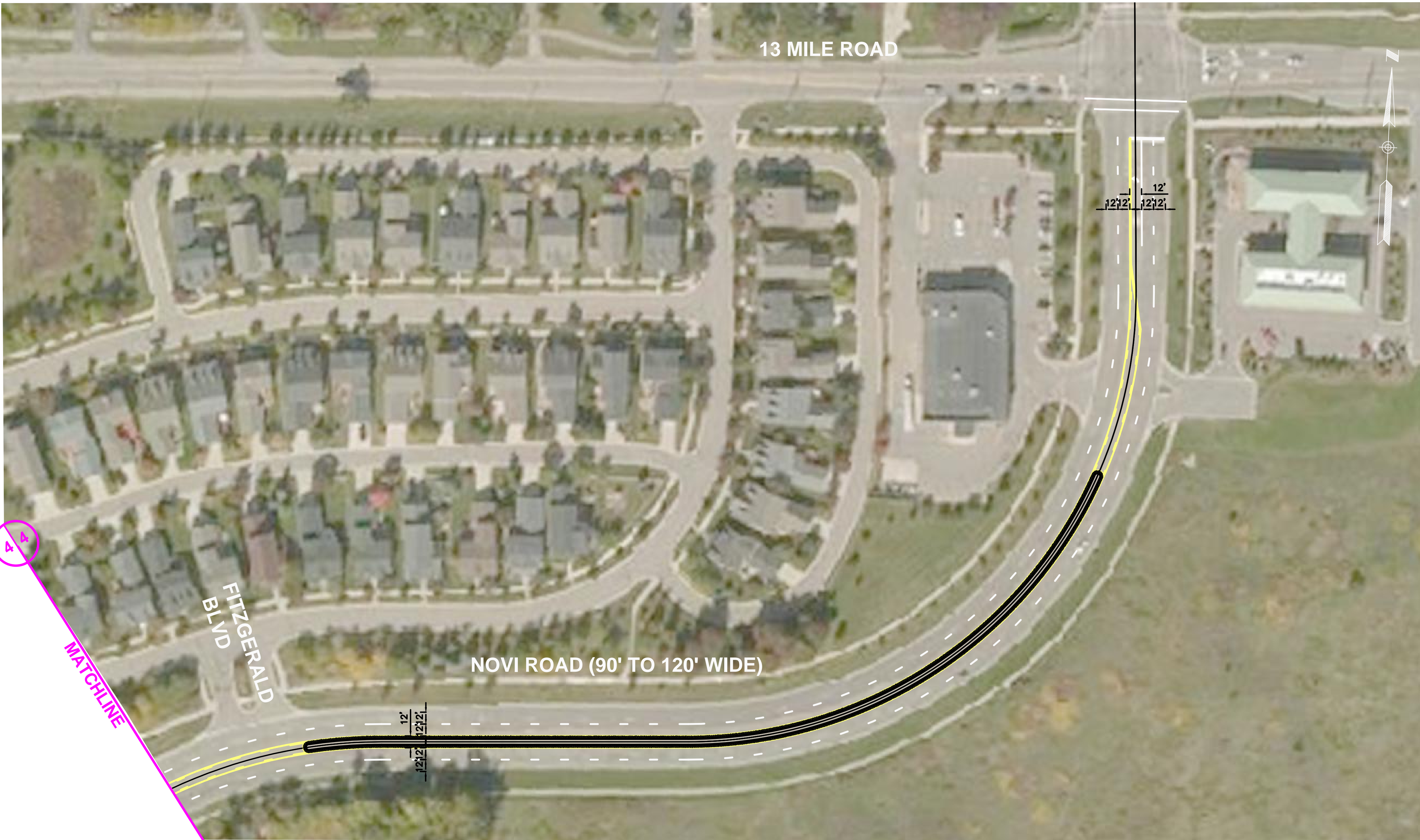
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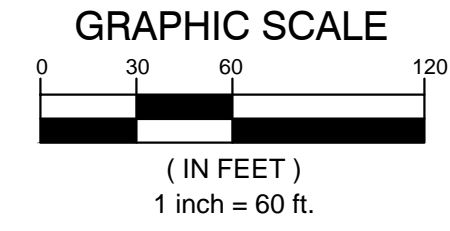
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MATCHLINE



MEMORANDUM



TO: ROB HAYES, DIRECTOR OF PUBLIC SERVICES/CITY ENGINEER
FROM: BRIAN COBURN, ENGINEERING SENIOR MANAGER *BC*
SUBJECT: NOVI ROAD (12 -13 MILE) CONSTRUCTION ALTERNATIVES
DATE: AUGUST 12, 2015

The rehabilitation of Novi Road between 12 Mile and 13 Mile Roads was discussed by City Council at the Special Budget Meeting on April 15, 2015. Specifically, there was a request for staff to develop alternatives for the reconstruction of Novi Road that would reduce the amount of pavement and improve the aesthetics of the road. Staff was successful in obtaining a \$551,440 federal grant to repair and repave the existing road, and worked with the consultant, Spalding DeDecker, to prepare the attached report providing various designs along with cost estimates. Each alternative includes milling the remaining pavement, making repairs, and overlaying the road with asphalt. The alternatives are summarized in the table below, but are explained in more detail in the attached report.

| Alternative | Description | Estimated Construction Cost | Total Project Cost (w/ Engineering & Contingency) | Variance from Budget |
|-------------|--|-----------------------------|---|----------------------|
| 0 | No changes to existing cross-section (5 lanes) | \$1,118,400 | \$1,304,614 | \$277,939 |
| 1 | Remove existing center turn lane where it is not necessary and replace with a curbed median island (4 Lanes) | \$1,998,000 | \$2,307,690 | \$1,281,015 |
| 2 | Remove existing center turn lane where it is not necessary and replace with a depressed median island for storm water/bioswale (4 lanes) | \$1,534,500 | \$1,789,994 | \$763,319 |
| 3 | Remove outside lanes, add a bike lane each direction (3 Lanes) | \$2,141,700 | \$2,473,664 | \$1,446,989 |
| 4 | Alternative 1, plus stripe existing outside lanes as bike lanes (2 Lanes) | \$2,008,600 | \$2,319,933 | \$1,293,258 |
| 5 | Remove outside lanes and keep center turn lane, add off-street 8' pathways to each side (3 lanes) | \$2,619,900 | \$3,025,985 | \$1,999,310 |

Alternative 0 refers to the existing budgeted project to mill, repair and replace the existing pavement. Since the construction cost estimate was first developed in 2013 for the grant application, the condition of Novi Road has continued to deteriorate resulting in a higher construction cost for that project. Additionally, as we shared recently with Council, construction bid prices have escalated, which means that additional funds would be needed if we were to complete the original project. Unfortunately, the federal grant is capped and additional costs would be the City's responsibility.

The following matrix evaluates the alternatives using various criteria that were gleaned from the discussion at the City Council Budget meeting, or are underlying themes in the City Council goals.

| Criterion | Alternatives | | | | | |
|---|--------------|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 |
| Improves non-motorized travel | | | | X | X | X |
| Provides a median/improves aesthetics | | X | X | | | |
| Provides location for additional planting (median or behind curb) | | X | X | X | X | X |
| Improves traffic safety | | X | X | | X | |
| Provides in situ storm water treatment (improves sustainability) | | | X | | | |

Alternative 2 meets almost all of the criteria in the matrix and happens to be the lowest cost alternative when compared to the status quo Alternative 0. In this alternative, the center left turn lane would be replaced with a depressed median that would be used as a bioswale to treat storm water and provide an opportunity for plantings that are commonly placed in a bioswale. The majority of the existing curbs on Novi Road are in good condition; therefore, the existing curb would remain. This alternative does not provide the opportunity to construct an on-street bike lane if the existing curb remains in place. Staff considered using a narrower median to provide bike lanes adjacent to the existing curbs; however, a 12 foot median width is required to provide the left turn lane pockets at intersections, and as a result the bike lanes would be inconsistent and would be dropped at intersections. Instead, for this alternative non-motorized traffic would use the existing sidewalk on the east side of Novi road and the existing pathway/boardwalk on the west side.

Additional funds would be required to construct any of the alternatives being considered. If Alternative 2 is selected, staff recommends utilizing \$764,000 from the Drain Fund to make the storm water related improvements to the proposed Novi Road median.

We look forward to additional feedback on the attached report and direction on how to proceed with the design of this section of Novi Road.

cc: Carl Johnson, Chief Financial Officer
 Matt Wiktorowski, Field Operations Senior Manager
 DPS Engineering Division Staff

TECHNICAL MEMO

DATE: July 13, 2014

TO: Mr. Brian Coburn, PE
City of Novi

FROM: Ed Strada, PE

RE: Novi Road, 12 Mile Road to 13 Mile Road
NV15-006

This technical memo summarizes five roadway options for Novi Road between 12 Mile Road and 13 Mile Road. Although federal aid had been secured for a rehabilitation project, the City is considering the following reconstruction alternatives in order to optimize the operation of the roadway.

Novi Road from 12 Mile Road to 13 Mile Road is a 5 lane HMA roadway with curb and gutter. The originally funded rehabilitation project included a 2" mill and HMA overlay with interlayer fabric, spot curb replacement, ADA ramp improvements, and permanent pavement markings. The original project did not include any geometric changes. The cost estimate for the originally funded project has been updated using current pricing and is now \$1,118,366.12. A detailed cost breakdown is included in Appendix B for your reference.

Considered changes to the road geometry include options such as constructing a raised median, constructing a depressed median, narrowing the overall pavement cross section, adding bicycle lanes, and adding a non-motorized pathway. The current posted speed of 45 MPH is assumed to be maintained for each alternative.

These changes have been considered in order to add traffic calming measures, reduce head on crashes, address drainage, and provide safer routes for bicyclists.

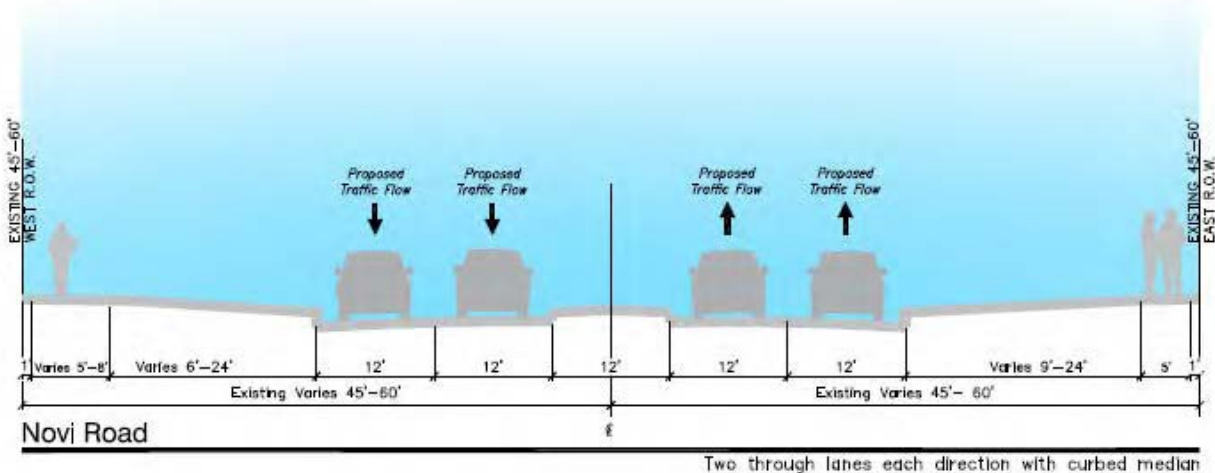
The following items are included in this Memo to describe each alternative in detail:

- Narrative of the Features and Feasibility (within this text)
- Illustrative Cross-Section (within this text)
- Plan View Drawing (Appendix A)
- Construction Cost Estimate (Appendix B)

ALTERNATIVE 1:

Proposed Treatment: Maintain outside curbs and change the cross-section to a curbed four lane section, remove center turn lane where not necessary and replace with a raised center median with left turn lanes at intersections. Mill the remaining HMA roadway 2", place interlayer and overlay with 2" of HMA.

Geometric Design: The proposed section consists of two 12 foot through lanes in each direction with a curbed concrete center median. The existing intersection geometry at Old Novi Road and 13 Mile Road will be retained, providing left turn lanes with a minimum 100 foot storage. All ramps will be upgraded to meet current ADA standards.



Drainage: The existing drainage will be maintained. The center islands will be drained via underdrains connected to the nearest outlets.

Safety: The center median will help achieve traffic calming, better channelization and a reduction in left turn head on crashes.

Multimodal usage: No improvements for multimodal usage are proposed. The existing pathway will be maintained and sidewalk ramps will be upgraded to meet current ADA standards.

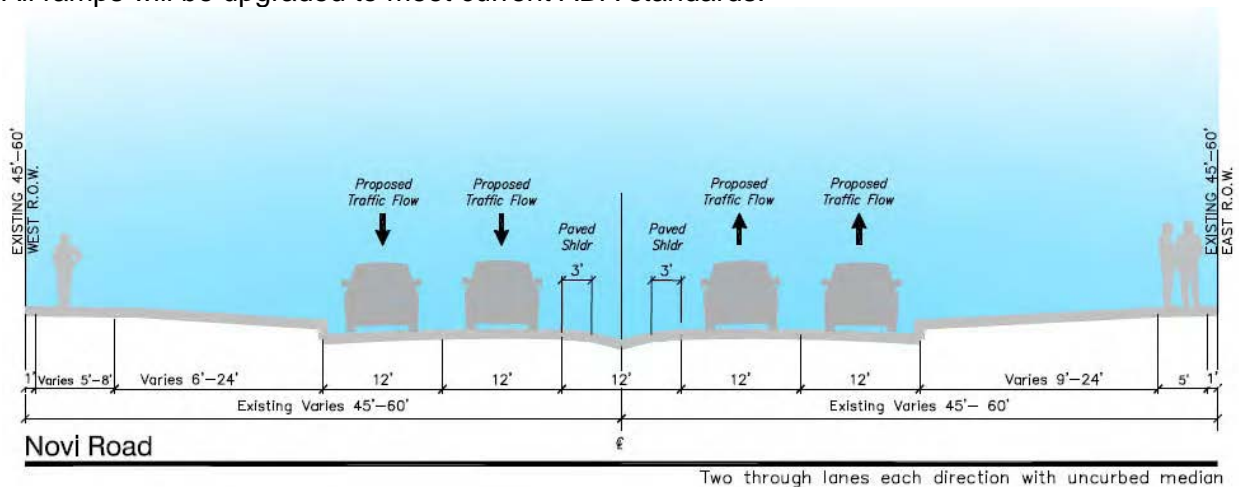
Estimated Construction Cost: \$1,997,592.19

Feasibility: This is a relatively simple alternative to change the operation of the roadway. The proposed median can be placed within the existing roadway and the existing intersections can operate as they currently do. Drainage patterns will remain the same and there is an opportunity to landscape the medians rather than pave the medians.

ALTERNATIVE 2:

Proposed Treatment: Maintain outside curbs and change the cross-section to a curbed four lane section, remove center turn lane where not necessary and replace with an uncurbed median shoulder and a depressed median to collect and treat storm water. Mill the remaining HMA roadway 2", place interlayer and overlay with 2" of HMA.

Geometric Design: The proposed section consists of two 12 foot through lanes in each direction with a paved shoulder and a depressed median. The existing intersection geometry at Old Novi Road and 13 Mile Road will be retained, providing left turn lanes with a minimum 100 foot storage. All ramps will be upgraded to meet current ADA standards.



Drainage: The existing outside drainage will be maintained. The center median will be depressed to collect and treat storm water.

Safety: The center median will help achieve traffic calming, better channelization and a reduction in left turn head on crashes. In winter, snowfall may obscure the depressed median creating a hazard for motorists. Delineators can be added to help motorists identify where the median is.

Multimodal usage: No improvements for multimodal usage are proposed. The existing pathway will be maintained and sidewalk ramps will be upgraded to meet current ADA standards.

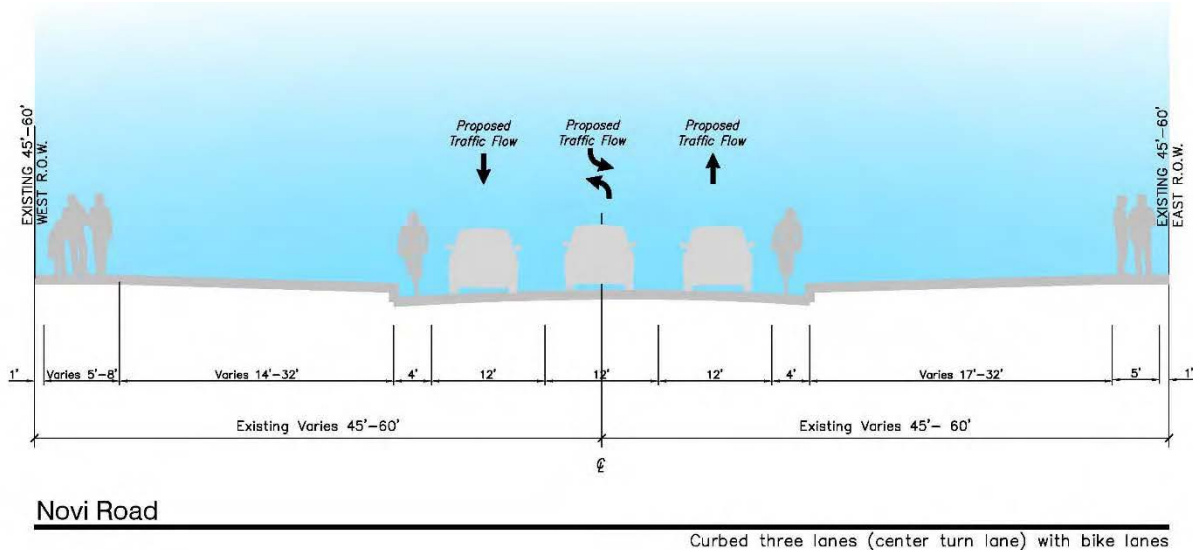
Estimated Construction Cost: \$1,534,498.09

Feasibility: This alternative is similar to Alternative 1 and provides a basic change to the current operations. The use of a depressed center median to collect storm water provides a green alternative for storm water treatment and reduces the load on the existing drainage system. A geotechnical investigation will be necessary to identify the underlying soils and determine if they are suitable to drain the storm water in the median.

ALTERNATIVE 3:

Proposed Treatment: Remove the outside curbs and change the cross-section to a curbed three lane section with a 4-foot wide bike lanes at the curb. Mill the remaining HMA roadway 2", place interlayer and overlay with 2" of HMA.

Geometric Design Standards: The proposed section consists of one 12' through lane in each direction with a 12 foot center turn lane and a 4 foot bike lane on each side. The Intersection at Old Novi Rd will have a left turn lane and right turn lane with a minimum 100 foot storage. Existing intersection geometry will be maintained at 13 Mile Road. All ramps will be upgraded to meet current ADA standards.



Drainage: New curb line and drainage structures will be constructed to direct and collect storm water.

Safety: Narrower cross-section and bike lane will result in traffic calming. Bike lane will also provide safe access for bicyclists.

Multimodal usage: This option is considered a Complete Street, providing safe access to all users including pedestrians, bicyclists and motorists. The existing pathway will be maintained and upgraded to meet current ADA standards.

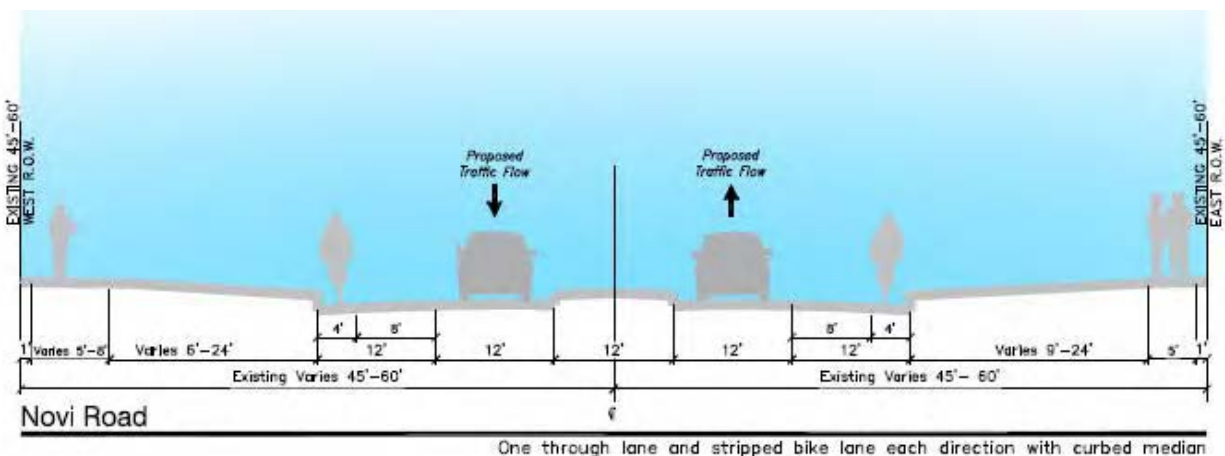
Estimated Construction Cost: \$2,141,688.94

Feasibility: This alternative provides a more dramatic change to the roadway operations. The curb lines will be brought in 8' on each side and the number of lanes will be reduced from 5 to 3. The existing drainage system will also need to be reconstructed due to the new configuration.

ALTERNATIVE 4:

Proposed Treatment: Maintain the existing outside curbs and change the cross-section to a curbed four lane section, stripe a bike lane in the outside lanes, remove center turn lane where not necessary and replace with a raised center median with left turn lanes at intersections. Mill the remaining HMA roadway 2", place interlayer and overlay with 2" of HMA.

Geometric Design: The proposed cross-section consists of one 12 foot through lane in each direction with a curbed center median and a 4 foot striped bike lane with an 8 foot buffer on each side. The intersection at Old Novi Road will have a left turn lane and a right turn lane with a minimum 100 foot storage. The existing intersection geometry will be maintained at 13 Mile Road. All ramps will be upgraded to meet current ADA standards.



Drainage: The existing drainage will be maintained. Center islands will be drained via underdrains connected to the nearest outlet.

Safety: The center median will help achieve traffic calming, better channelization and reduction in left-turn head on crashes. A bike lane will also provide safe access for bicyclists.

Multimodal usage: This option is considered a Complete Street, providing safe access to all users including pedestrians, bicyclists and motorists. The existing pathway will be maintained and upgraded to meet current ADA standards.

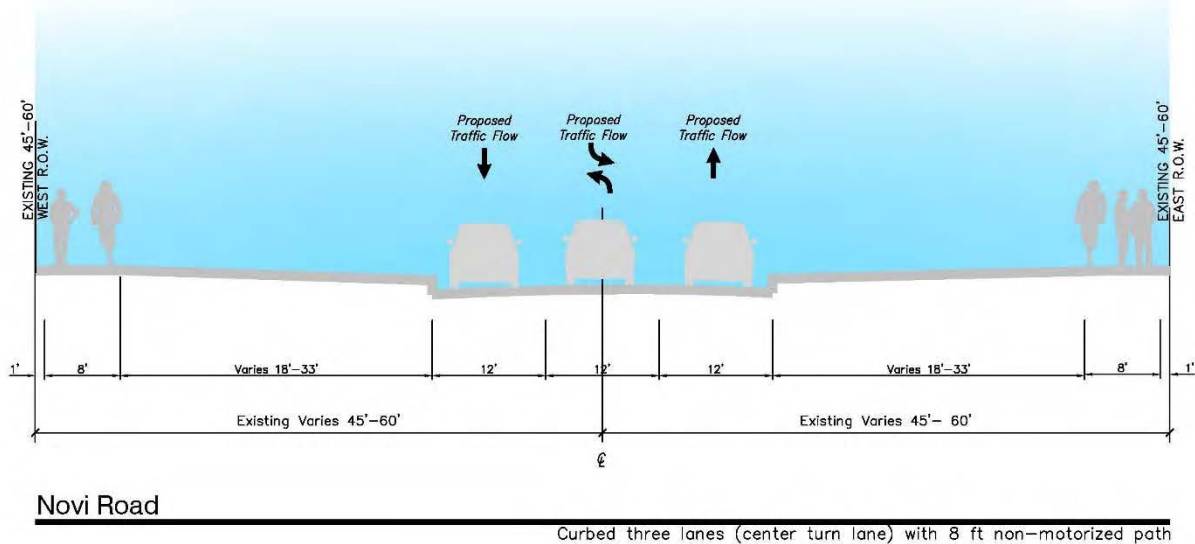
Estimated Construction Cost: \$2,008,617.19

Feasibility: As with Alternative 1, this alternative allows for the placement of the proposed median within the existing roadway, however travel lanes are reduced to 2 thru lanes with left turns allowed at specific locations. Converting the outside lane to a bike lane without reducing the pavement section leaves an 8' gap between the thru lane and the bike lane. Having wide areas of pavement that are not being used is not ideal but this area can be striped to discourage vehicles and bicycles from entering that area.

ALTERNATIVE 5:

Proposed Treatment: Remove outside curbs and change the cross section to a curbed three-lane section, with 8-ft wide non-motorized pathways. Mill the remaining HMA roadway 2", place interlayer and overlay with 2" of HMA.

Geometric Design Standards- The proposed section consists of one 12 foot through lane in each direction with a 12 foot center turn lane and 8 foot wide non-motorized paths on each side of the roadway. The intersection at Old Novi Road will have a left turn lane and a right turn lane with a minimum 100 foot storage. The existing intersection geometry will be maintained at 13 Mile Road. All ramps will be upgraded to meet current ADA standards.



Drainage: New curb line and drainage structures will be constructed to direct and collect storm water.

Safety: A narrower cross-section will provide traffic calming. A non-motorized path will provide safe access for pedestrians and bicyclists.

Multimodal usage: This option is considered a Complete Street, providing safe access to all users including pedestrians, bicyclists and motorists.

Estimated Construction Cost: \$2,619,938.00

Feasibility: This alternative reduces the number of lanes from 5 to 3 as in Alternative 3 but it removes the bicycle lanes from the roadway and widens the existing sidewalk on both sides of the road to 8' to accommodate both bicycles and pedestrians. The curb will be brought in 12' from its existing location and the existing drainage system will need to be reconstructed.

SUMMARY TABLE:

| Alternative | # of Proposed Lanes | Median Treatment | Non-Motorized Treatment | Cost Estimate |
|--------------------|----------------------------|-------------------------------------|--------------------------------|----------------------|
| 1 | 4 | Raised Concrete | None | \$1,997,592.19 |
| 2 | 4 | Depressed for storm water treatment | None | \$1,534,498.09 |
| 3 | 3 | Center left turn lane | Bike Lanes | \$2,141,688.94 |
| 4 | 2 | Raised Concrete | Bike Lanes | \$2,008,617.19 |
| 5 | 3 | Center left turn lane | Pathway | \$2,619,938.00 |

APPENDIX A



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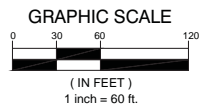
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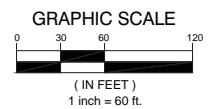
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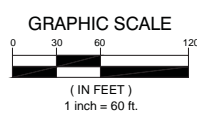
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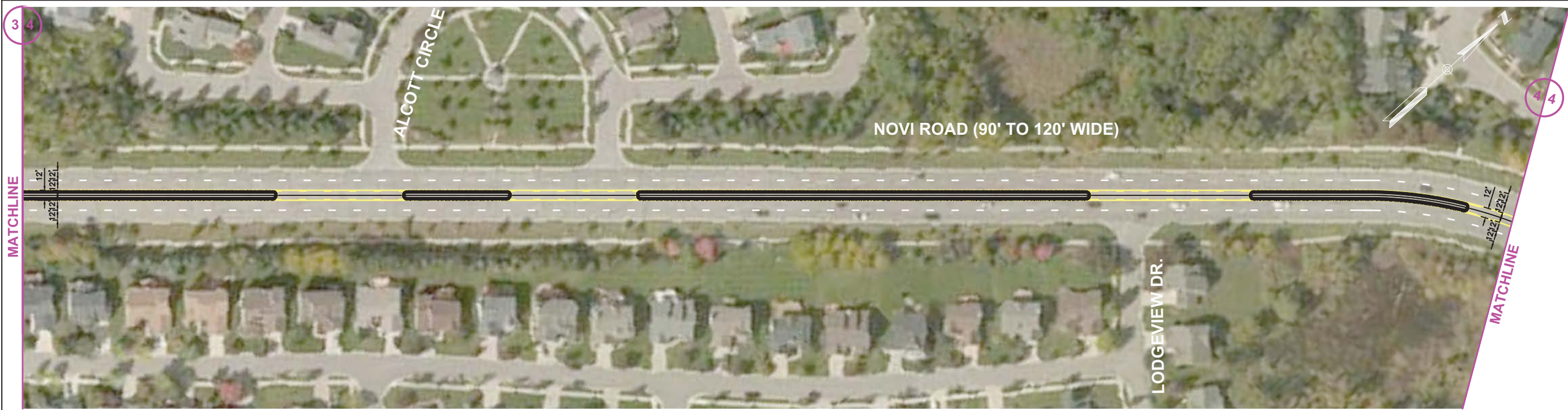
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| PROJECT MANAGER | BID PLAN DATE |
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| DEPARTMENT MANAGER APPROVAL | DATE |

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| JOB NO. | DRAWING NO. |
| NV15-006 | . |
| SCALE: | SHEET NO. |
| 1" = 60' | 3 OF 10 |





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**NOVI ROAD
(12 MILE ROAD
TO 13 MILE ROAD)**

ALTERNATIVE 2

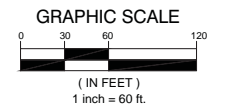
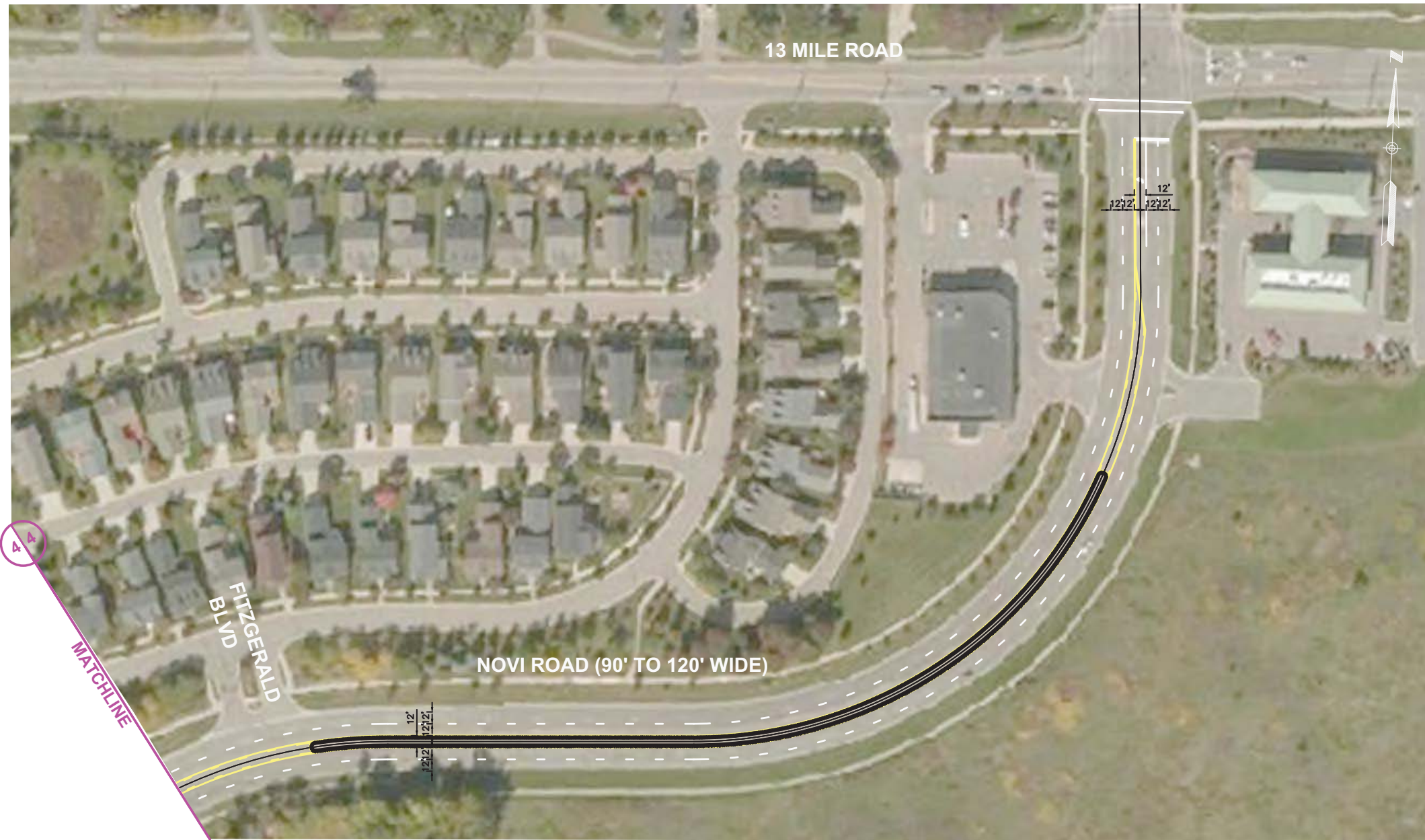
SECTION 11 PRIVATE CLAIM
TOWN 1 NORTH RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY

| NO. | DATE | REVISION |
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| DRAFTER MT | DATE 06-17-15 |
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| SCALE: 1" = 60' | SHEET NO. 4 OF 10 |





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**NOVI ROAD
(12 MILE ROAD
TO 13 MILE ROAD)**

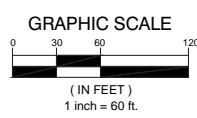
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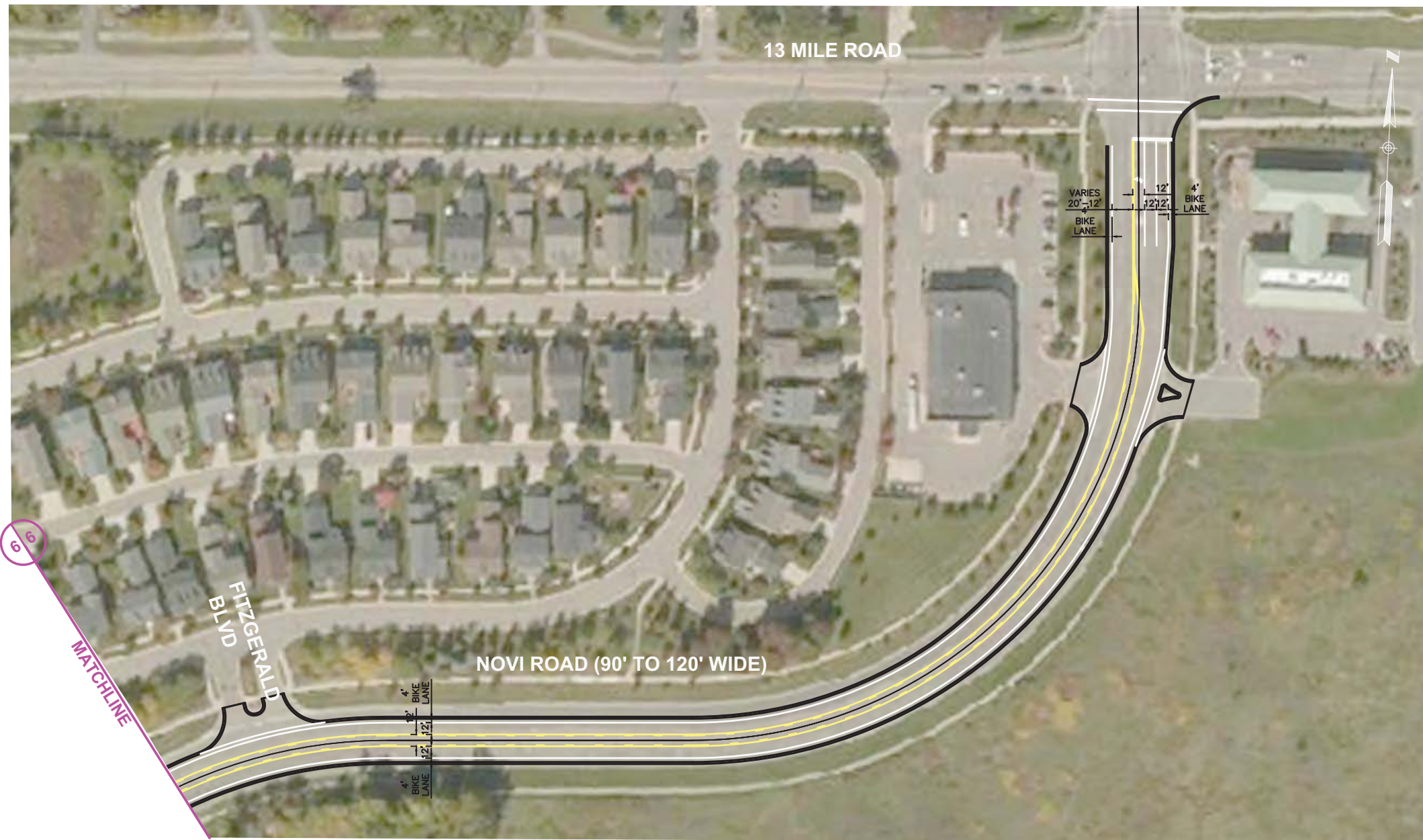
SECTION 11 PRIVATE CLAIM
TOWN 1 NORTH RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY

| NO. | DATE | REVISION |
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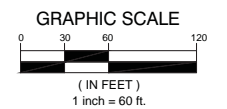
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**NOVI ROAD
(12 MILE ROAD
TO 13 MILE ROAD)**

ALTERNATIVE 3

SECTION 11 PRIVATE CLAIM
TOWN 1 NORTH RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY

| NO. | DATE | REVISION |
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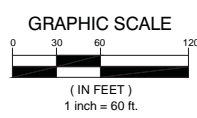
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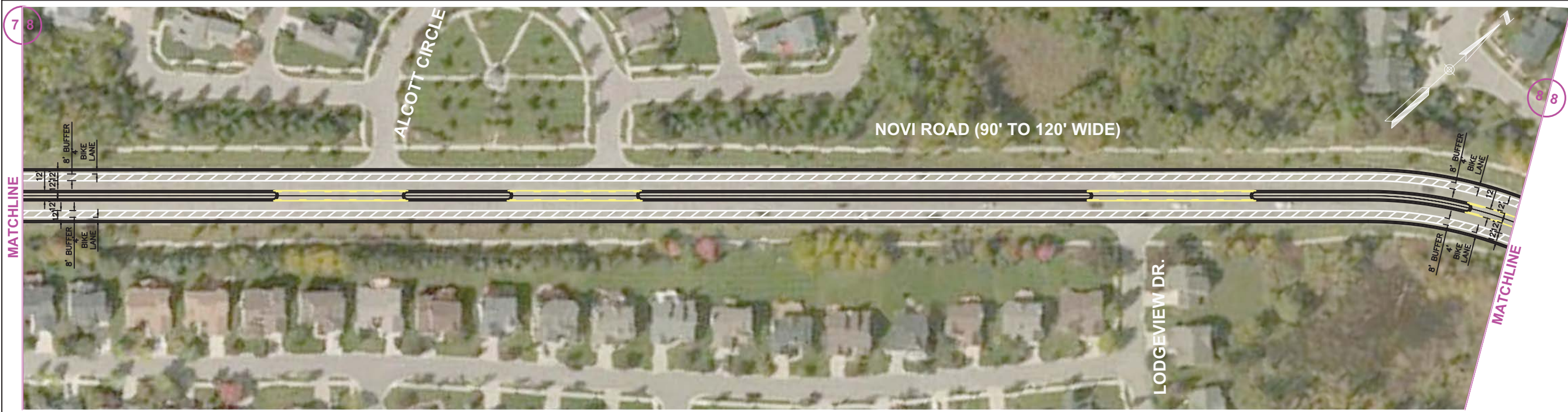
SECTION 11 PRIVATE CLAIM
TOWN 1 NORTH RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY

| NO. | DATE | REVISION |
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| NV15-006 | . |
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| 1" = 60' | 7 OF 10 |





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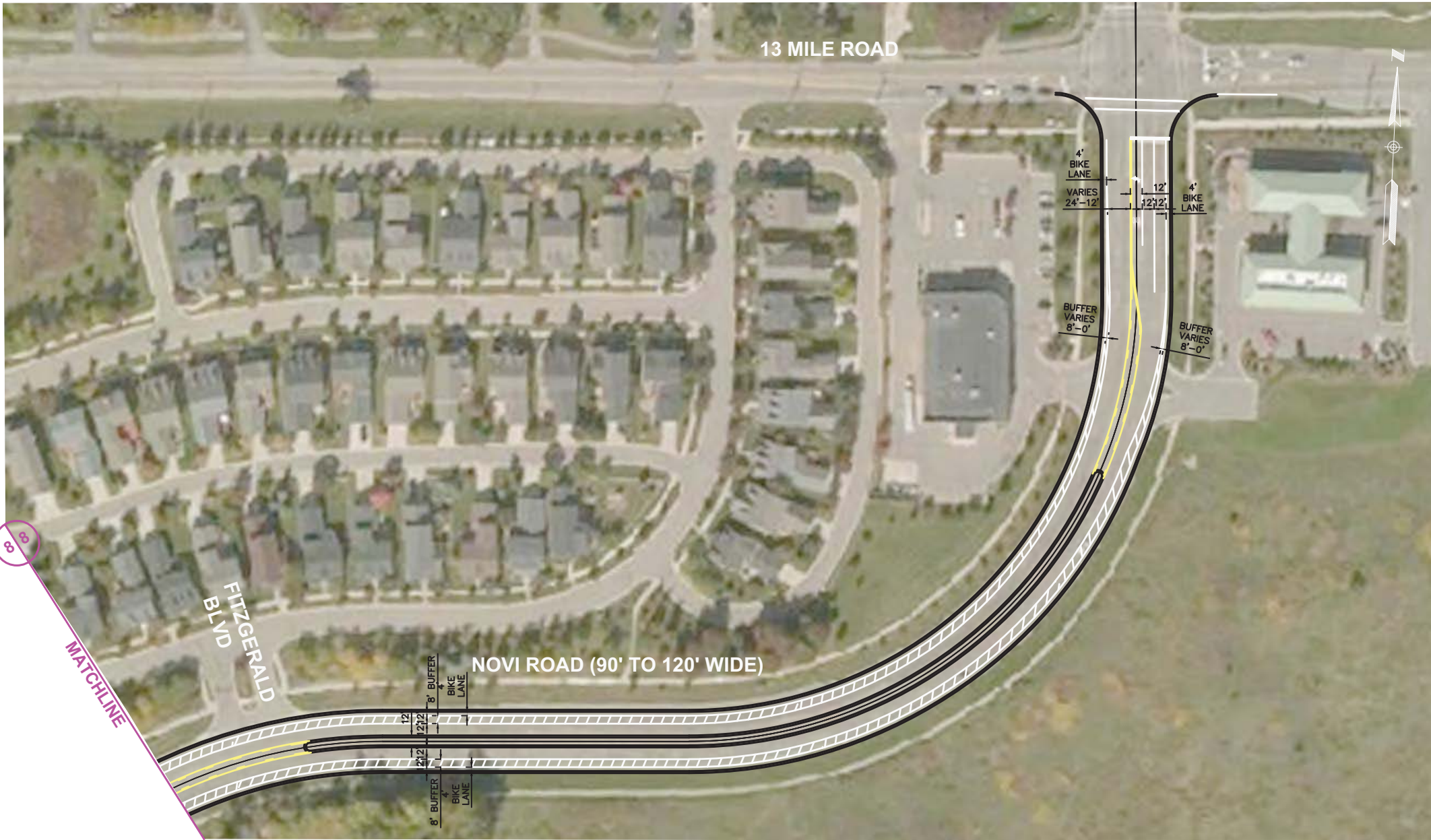


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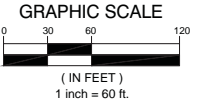


**NOVI ROAD
(12 MILE ROAD
TO 13 MILE ROAD)**

ALTERNATIVE 4

SECTION 11 PRIVATE CLAIM
TOWN 1 NORTH RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY

| NO. | DATE | REVISION |
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| DRAFTER MT | DATE 06-17-15 |
| DESIGNER EK | DATE 06-16-15 |
| CHECKED | DATE |
| PROJECT MANAGER EAS | BID PLAN DATE 00-00-00 |
| DEPARTMENT MANAGER APPROVAL | DATE |

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| JOB NO. NV15-006 | DRAWING NO. |
| SCALE: 1" = 60' | SHEET NO. 8 OF 10 |



MATCHLINE

9

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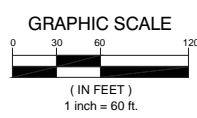
ALTERNATIVE 5

SECTION 11 PRIVATE CLAIM
TOWN 1 NORTH RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY

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| SCALE: | SHEET NO. |
| 1" = 60' | 9 OF 10 |

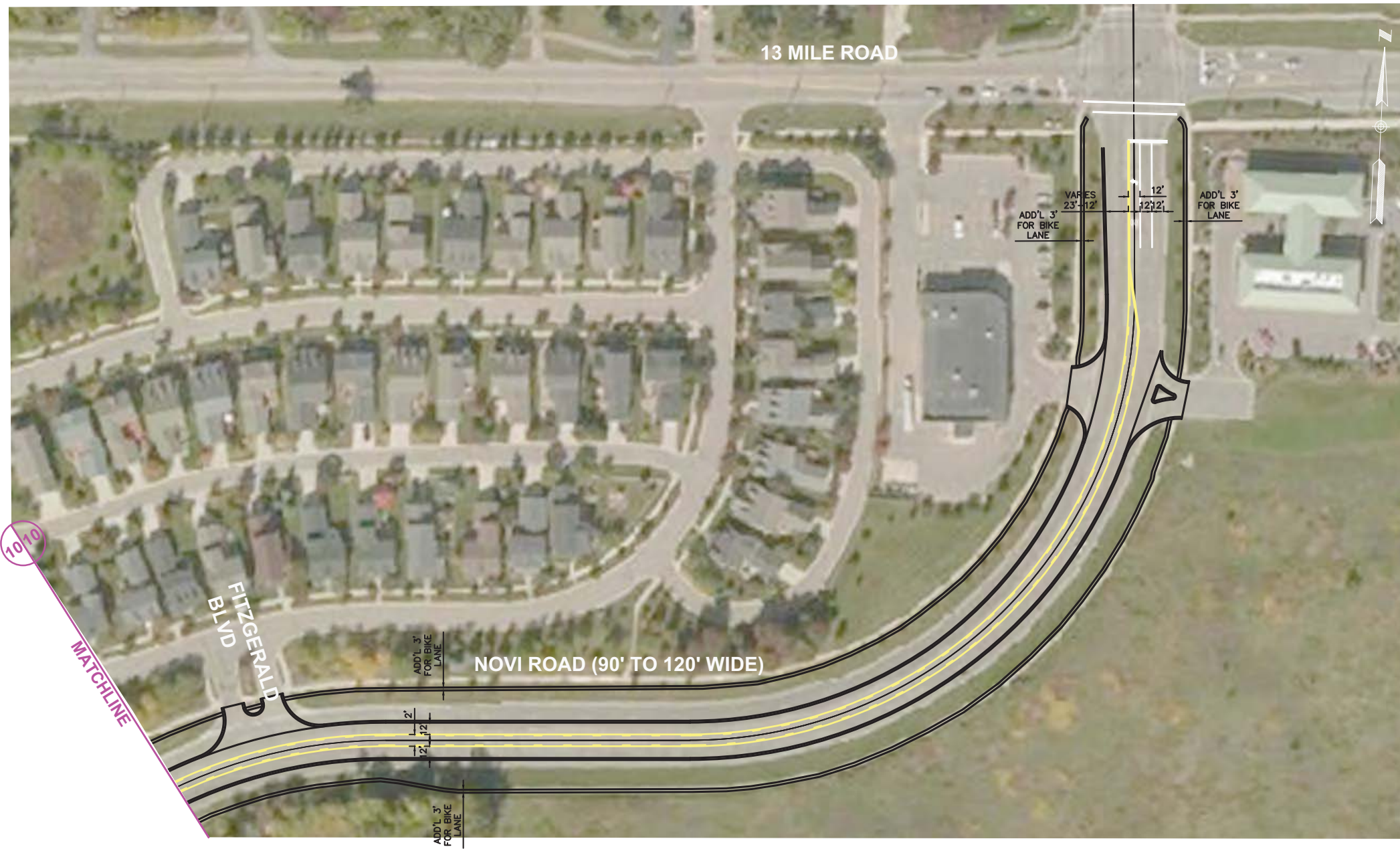
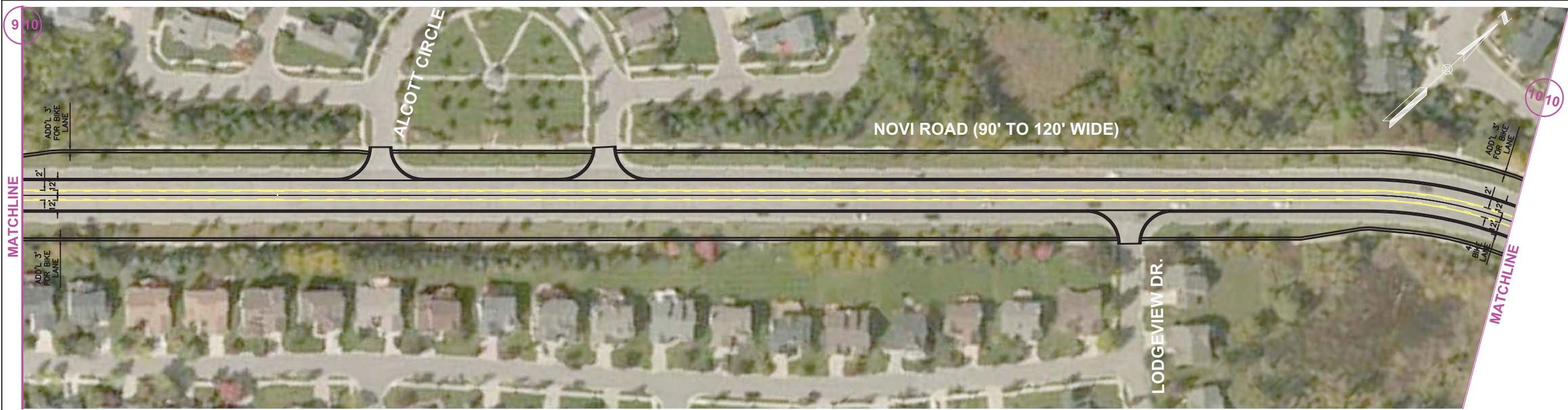


MATCHLINE

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MATCHLINE

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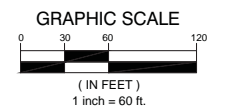
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**NOVI ROAD
(12 MILE ROAD
TO 13 MILE ROAD)**

ALTERNATIVE 5

SECTION 11 PRIVATE CLAIM
TOWN 1 NORTH RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY

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| SCALE 1" = 60' | SHEET NO. 10 OF 10 |

APPENDIX B

NOVI ROAD

Summary of Probable Construction Cost - 2016 Call for Projects

| | |
|--|------------------------------------|
| Project: <u>Novi Road</u> | Date: <u>6/29/2015</u> |
| Location: <u>12 Mile to 13 Mile</u> | Project No.: <u>NV15006</u> |
| Work: <u>HMA Road Rehab</u> | By: <u>ES</u> |
| | Reviewed: _____ |

Roadway Information:

5-lane section with curb and gutter throughout. HMA pavement (5" HMA on 11" agg) constructed in 1992, portions rehabilitated in last 10 years. Top course pavement of various vintages due to prior spot CPM, oldest shows extensive alligator cracking due to fatigue and age, best condition is fair with some random cracking. Existing pathway and sidewalk ramps need ADA upgrades.

OPTION #1 - Mill 2", place interlayer, and overlay 2" (consistent all areas)

Mill, place fabric to mitigate cracking, and pave in one lift

Total Existing Roadway Area - all HMA (SYD): 44615

Total Existing Curb and Gutter (FT): 12704

Total Proposed Roadway Area (SYD): 44615

| Item No. | Item Description | Est. Quantity | Unit | Unit Price (\$) | Total Cost (\$) |
|---------------------------------------|---|---------------|------|-----------------|-----------------|
| | <u>General Items</u> | | | | |
| | Bonds, Insurance and Mobilization (5% max.) | 1 | LS | 72,433.84 | 72,433.84 |
| | Pre-Construction Video Review | 1 | LS | 5,000.00 | 5,000.00 |
| | Soil Erosion & Sedimentation Control | 1 | LS | 4,000.00 | 4,000.00 |
| | Maintaining Traffic | 1 | LS | 15,000.00 | 15,000.00 |
| | | | | | |
| | <u>Roadway Items</u> | | | | |
| | Cold Milling HMA Pavement, Special | 44615 | SYD | 6.00 | 267,690.00 |
| | Conc Curb & Gutter, Spot Rem and Replace | 400 | FT | 40.00 | 16,000.00 |
| | Fabric Interlayer | 44615 | SYD | 4.00 | 178,460.00 |
| | HMA, 4C, 2 inch | 44615 | SYD | 10.45 | 466,226.75 |
| | ADA ramp upgrades | 10 | EA | 500.00 | 5,000.00 |
| | Permanent Pavement Markings | 1 | LS | 15,000.00 | 15,000.00 |
| | Monument Adjustment Allowance | 1500 | DLR | 1.00 | 1,500.00 |
| | Permit Allowance (Novi Road) | 1000 | DLR | 1.00 | 1,000.00 |
| | Restoration | 1 | LS | 5,000.00 | 5,000.00 |
| | Inspection Crew Days | 20 | DAY | 640.00 | 12,800.00 |
| Estimated Construction Cost Subtotal: | | | | | 1,065,110.59 |
| Contingency (5%) | | | | | \$ 53,255.53 |

OPINION OF PROBABLE CONSTRUCTION COST \$ 1,118,366.12

In providing opinions of probable construction cost, the Client understands that the Consultant has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing, and that the Consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgement and experience. The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

OPINION OF PROBABLE CONSTRUCTION COST

 PROJECT NAME: Novi Road - Alternative #1
 CLIENT NAME: CITY OF NOVI
 PREPARED BY: E/ES

 PROJECT NO: NV15006
 DATE: 07/10/15

| NO. | ITEM | QUANTITY | UNIT | PRICE | TOTAL AMOUNT |
|--------------------------------------|--|----------|------|--------------|-----------------|
| 1 | Bonds, Insurance and Mobilization (5% Max) | 1 | LS | \$ 90,593.75 | \$ 90,593.75 |
| 2 | Pre-Construction Audio-Visual | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 3 | Soil Erosion Control Measures | 1 | LS | \$ 4,000.00 | \$ 4,000.00 |
| 4 | Maintaining Traffic | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Tree Protection Fencing | 0 | LF | \$ 5.00 | \$ - |
| 6 | Remove Tree, (6"-18") | 0 | EA | \$ 750.00 | \$ - |
| 7 | Pavement, Remove | 6,100 | SY | \$ 12.00 | \$ 73,200.00 |
| 8 | Pavement Repair, Rem, Modified | 0 | SY | \$ 12.00 | \$ - |
| 9 | Cold Milling HMA Pavement, Special | 39,823 | SY | \$ 6.00 | \$ 238,938.00 |
| 10 | Driveway, Remove | 0 | SY | \$ 9.00 | \$ - |
| 11 | Sidewalk, Remove | 0 | SF | \$ 3.00 | \$ - |
| 12 | Concrete Curb and Gutter, Remove | 0 | LF | \$ 10.00 | \$ - |
| 13 | Subgrade Undercut (As Needed) | 598 | CY | \$ 40.00 | \$ 23,920.00 |
| 14 | Pathway Grading | 0 | STA | \$ 3,000.00 | \$ - |
| 15 | Underdrain, 6 Inch, w/Geotextile Trench Wrap | 4,565 | LF | \$ 13.00 | \$ 59,345.00 |
| 16 | Aggregate Base, 6 Inch | 6,100 | SY | \$ 15.00 | \$ 91,500.00 |
| 17 | HMA, 5E1 | 4,381 | Ton | \$ 95.00 | \$ 416,195.00 |
| 18 | Interlayer | 39,823 | SY | \$ 4.00 | \$ 159,292.00 |
| 19 | HMA Surface Repair | 5,974 | SY | \$ 30.00 | \$ 179,220.00 |
| 20 | Curb and Gutter, Conc | 9,303 | LF | \$ 30.00 | \$ 279,090.00 |
| 21 | Driveway, Nonreinf Conc, 6 Inch | 0 | SY | \$ 42.00 | \$ - |
| 22 | Sidewalk, Conc, 4 Inch | 36,395 | SF | \$ 5.00 | \$ 181,975.00 |
| 23 | ADA Ramp Improvements | 34 | EA | \$ 750.00 | \$ 25,500.00 |
| 24 | Monument Adjustment Allowance | 1,500 | DLR | \$ 1.00 | \$ 1,500.00 |
| 25 | Permit Allowance | 1,000 | DLR | \$ 1.00 | \$ 1,000.00 |
| 26 | Drainage | 1 | LS | \$ 18,000.00 | \$ 18,000.00 |
| 27 | Permanent Pavement Markings & Signing | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 28 | Restoration | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 29 | Inspection Crew Days | 30 | DAY | \$ 640.00 | \$ 19,200.00 |
| Estimated Construction Cost Subtotal | | | | | \$ 1,902,468.75 |
| Contingency (5%) | | | | | \$ 95,123.44 |

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| OPINION OF PROBABLE CONSTRUCTION COST | Total Estimated Construction Cost: | \$ 1,997,592.19 |
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In providing opinions of probable construction cost, the Client understands that the Consultant has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing, and that the Consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgement and experience. The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

OPINION OF PROBABLE CONSTRUCTION COST

 PROJECT NAME: Novi Road - Alternative #2
 CLIENT NAME: CITY OF NOVI
 PREPARED BY: EI/ES

 PROJECT NO: NV15006
 DATE: 07/10/15

| NO. | ITEM | QUANTITY | UNIT | PRICE | TOTAL AMOUNT |
|--------------------------------------|--|----------|------|--------------|-----------------|
| 1 | Bonds, Insurance and Mobilization (5% Max) | 1 | LS | \$ 69,591.75 | \$ 69,591.75 |
| 2 | Pre-Construction Audio-Visual | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 3 | Soil Erosion Control Measures | 1 | LS | \$ 4,000.00 | \$ 4,000.00 |
| 4 | Maintaining Traffic | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Tree Protection Fencing | 0 | LF | \$ 5.00 | \$ - |
| 6 | Remove Tree, (6"-18") | 0 | EA | \$ 750.00 | \$ - |
| 7 | Pavement, Remove | 6,100 | SY | \$ 12.00 | \$ 73,200.00 |
| 8 | Pavement Repair, Rem, Modified | 0 | SY | \$ 12.00 | \$ - |
| 9 | Cold Milling HMA Pavement, Special | 39,823 | SY | \$ 6.00 | \$ 238,938.00 |
| 10 | Driveway, Remove | 0 | SY | \$ 9.00 | \$ - |
| 11 | Sidewalk, Remove | 0 | SF | \$ 3.00 | \$ - |
| 12 | Concrete Curb and Gutter, Remove | 0 | LF | \$ 10.00 | \$ - |
| 13 | Subgrade Undercut (As Needed) | 598 | CY | \$ 40.00 | \$ 23,920.00 |
| 14 | Pathway Grading | 0 | STA | \$ 3,000.00 | \$ - |
| 15 | Underdrain, 6 Inch, w/Geotextile Trench Wrap | 0 | LF | \$ 13.00 | \$ - |
| 16 | Aggregate Base, 6 Inch | 6,100 | SY | \$ 15.00 | \$ 91,500.00 |
| 17 | HMA, 5E1 | 5,227 | Ton | \$ 95.00 | \$ 496,565.00 |
| 18 | Interlayer | 39,823 | SY | \$ 4.00 | \$ 159,292.00 |
| 19 | HMA Surface Repair | 5,974 | SY | \$ 30.00 | \$ 179,220.00 |
| 20 | Curb and Gutter, Conc | 0 | LF | \$ 30.00 | \$ - |
| 21 | Driveway, Nonreinf Conc, 6 Inch | 0 | SY | \$ 42.00 | \$ - |
| 22 | Sidewalk, Conc, 4 Inch | 0 | SF | \$ 5.00 | \$ - |
| 23 | ADA Ramp Improvements | 34 | EA | \$ 750.00 | \$ 25,500.00 |
| 24 | Monument Adjustment Allowance | 1,500 | DLR | \$ 1.00 | \$ 1,500.00 |
| 25 | Permit Allowance | 1,000 | DLR | \$ 1.00 | \$ 1,000.00 |
| 26 | Drainage | 1 | LS | \$ 38,000.00 | \$ 38,000.00 |
| 27 | Permanent Pavement Markings & Signing | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 28 | Restoration | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 29 | Inspection Crew Days | 30 | DAY | \$ 640.00 | \$ 19,200.00 |
| Estimated Construction Cost Subtotal | | | | | \$ 1,461,426.75 |
| Contingency (5%) | | | | | \$ 73,071.34 |

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| OPINION OF PROBABLE CONSTRUCTION COST | Total Estimated Construction Cost: \$ 1,534,498.09 |
|--|---|

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OPINION OF PROBABLE CONSTRUCTION COST

PROJECT NAME: Novi Road - Alternative #3
CLIENT NAME: CITY OF NOVI
PREPARED BY: EI/ES

PROJECT NO: NV15006
DATE: 07/10/15

| NO. | ITEM | QUANTITY | UNIT | PRICE | TOTAL AMOUNT |
|--|--|----------|------|---|------------------------|
| 1 | Bonds, Insurance and Mobilization (5% Max) | 1 | LS | \$ 97,128.75 | \$ 97,128.75 |
| 2 | Pre-Construction Audio-Visual | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 3 | Soil Erosion Control Measures | 1 | LS | \$ 4,000.00 | \$ 4,000.00 |
| 4 | Maintaining Traffic | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Tree Protection Fencing | 550 | LF | \$ 5.00 | \$ 2,750.00 |
| 6 | Remove Tree, (6"-18") | 0 | EA | \$ 750.00 | \$ - |
| 7 | Pavement, Remove | 14,800 | SY | \$ 12.00 | \$ 177,600.00 |
| 8 | Pavement Repair, Rem, Modified | 0 | SY | \$ 12.00 | \$ - |
| 9 | Cold Milling HMA Pavement, Special | 33,700 | SY | \$ 6.00 | \$ 202,200.00 |
| 10 | Driveway, Remove | 913 | SY | \$ 9.00 | \$ 8,217.00 |
| 11 | Sidewalk, Remove | 0 | SF | \$ 3.00 | \$ - |
| 12 | Concrete Curb and Gutter, Remove | 12,255 | LF | \$ 10.00 | \$ 122,550.00 |
| 13 | Subgrade Undercut (As Needed) | 506 | CY | \$ 40.00 | \$ 20,220.00 |
| 14 | Pathway Grading | 0 | STA | \$ 3,000.00 | \$ - |
| 15 | Underdrain, 6 Inch, w/Geotextile Trench Wrap | 12,255 | LF | \$ 13.00 | \$ 159,315.00 |
| 16 | Aggregate Base, 6 Inch | 0 | SY | \$ 15.00 | \$ - |
| 17 | HMA, 5E1 | 3,707 | Ton | \$ 95.00 | \$ 352,165.00 |
| 18 | Interlayer | 33,700 | SY | \$ 4.00 | \$ 134,800.00 |
| 19 | HMA Surface Repair | 5,055 | SY | \$ 30.00 | \$ 151,650.00 |
| 20 | Curb and Gutter, Conc | 12,255 | LF | \$ 30.00 | \$ 367,650.00 |
| 21 | Driveway, Nonreinf Conc, 6 Inch | 1,449 | SY | \$ 42.00 | \$ 60,858.00 |
| 22 | Sidewalk, Conc, 4 Inch | 0 | SF | \$ 5.00 | \$ - |
| 23 | ADA Ramp Improvements | 34 | EA | \$ 750.00 | \$ 25,500.00 |
| 24 | Monument Adjustment Allowance | 1,500 | DLR | \$ 1.00 | \$ 1,500.00 |
| 25 | Permit Allowance | 1,000 | DLR | \$ 1.00 | \$ 1,000.00 |
| 26 | Drainage | 1 | LS | \$ 75,000.00 | \$ 75,000.00 |
| 27 | Permanent Pavement Markings & Signing | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 28 | Restoration | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 29 | Inspection Crew Days | 40 | DAY | \$ 640.00 | \$ 25,600.00 |
| Estimated Construction Cost Subtotal | | | | | \$ 2,039,703.75 |
| Contingency (5%) | | | | | \$ 101,985.19 |
| OPINION OF PROBABLE CONSTRUCTION COST | | | | Total Estimated Construction Cost: | \$ 2,141,688.94 |

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OPINION OF PROBABLE CONSTRUCTION COST

 PROJECT NAME: Novi Road - Alternative #4
 CLIENT NAME: CITY OF NOVI
 PREPARED BY: EI/ES

 PROJECT NO: NV15006
 SAD NO: N/A
 DATE: 07/10/15

| NO. | ITEM | QUANTITY | UNIT | UNIT PRICE | TOTAL AMOUNT |
|--|--|----------|------|---|------------------------|
| 1 | Bonds, Insurance and Mobilization (5% Max) | 1 | LS | \$ 91,093.75 | \$ 91,093.75 |
| 2 | Pre-Construction Audio-Visual | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 3 | Soil Erosion Control Measures | 1 | LS | \$ 4,000.00 | \$ 4,000.00 |
| 4 | Maintaining Traffic | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Tree Protection Fencing | 0 | LF | \$ 5.00 | \$ - |
| 6 | Remove Tree, (6"-18") | 0 | EA | \$ 750.00 | \$ - |
| 7 | Pavement, Remove | 6,100 | SY | \$ 12.00 | \$ 73,200.00 |
| 8 | Pavement Repair, Rem, Modified | 0 | SY | \$ 12.00 | \$ - |
| 9 | Cold Milling HMA Pavement, Special | 39,823 | SY | \$ 6.00 | \$ 238,938.00 |
| 10 | Driveway, Remove | 0 | SY | \$ 9.00 | \$ - |
| 11 | Sidewalk, Remove | 0 | SF | \$ 3.00 | \$ - |
| 12 | Concrete Curb and Gutter, Remove | 0 | LF | \$ 10.00 | \$ - |
| 13 | Subgrade Undercut (As Needed) | 598 | CY | \$ 40.00 | \$ 23,920.00 |
| 14 | Pathway Grading | 0 | STA | \$ 3,000.00 | \$ - |
| 15 | Underdrain, 6 Inch, w/Geotextile Trench Wrap | 4,565 | LF | \$ 13.00 | \$ 59,345.00 |
| 16 | Aggregate Base, 6 Inch | 6,100 | SY | \$ 15.00 | \$ 91,500.00 |
| 17 | HMA, 5E1 | 4,381 | Ton | \$ 95.00 | \$ 416,195.00 |
| 18 | Interlayer | 39,823 | SY | \$ 4.00 | \$ 159,292.00 |
| 19 | HMA Surface Repair | 5,974 | SY | \$ 30.00 | \$ 179,220.00 |
| 20 | Curb and Gutter, Conc | 9,303 | LF | \$ 30.00 | \$ 279,090.00 |
| 21 | Driveway, Nonreinf Conc, 6 Inch | 0 | SY | \$ 42.00 | \$ - |
| 22 | Sidewalk, Conc, 4 Inch | 36,395 | SF | \$ 5.00 | \$ 181,975.00 |
| 23 | ADA Ramp Improvements | 34 | EA | \$ 750.00 | \$ 25,500.00 |
| 24 | Monument Adjustment Allowance | 1,500 | DLR | \$ 1.00 | \$ 1,500.00 |
| 25 | Permit Allowance | 1,000 | DLR | \$ 1.00 | \$ 1,000.00 |
| 26 | Drainage | 1 | LS | \$ 18,000.00 | \$ 18,000.00 |
| 27 | Permanent Pavement Markings & Signing | 1 | LS | \$ 25,000.00 | \$ 25,000.00 |
| 28 | Restoration | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 29 | Inspection Crew Days | 30 | DAY | \$ 640.00 | \$ 19,200.00 |
| Estimated Construction Cost Subtotal | | | | | \$ 1,912,968.75 |
| Contingency (5%) | | | | | \$ 95,648.44 |
| OPINION OF PROBABLE CONSTRUCTION COST | | | | Total Estimated Construction Cost: | \$ 2,008,617.19 |

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OPINION OF PROBABLE CONSTRUCTION COST

PROJECT NAME: Novi Road - Alternative #5
CLIENT NAME: CITY OF NOVI
PREPARED BY: EI/ES

PROJECT NO: NV15006
DATE: 07/10/15

| NO. | ITEM | QUANTITY | UNIT | PRICE | TOTAL AMOUNT |
|-----|--|----------|------|--------------------------------------|-----------------|
| 1 | Bonds, Insurance and Mobilization (5% Max) | 1 | LS | \$ 118,818.05 | \$ 118,818.05 |
| 2 | Pre-Construction Audio-Visual | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 3 | Soil Erosion Control Measures | 1 | LS | \$ 4,000.00 | \$ 4,000.00 |
| 4 | Maintaining Traffic | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Tree Protection Fencing | 300 | LF | \$ 5.00 | \$ 1,500.00 |
| 6 | Remove Tree, (6"-18") | 60 | EA | \$ 750.00 | \$ 45,000.00 |
| 7 | Pavement, Remove | 20,000 | SY | \$ 12.00 | \$ 240,000.00 |
| 8 | Pavement Repair, Rem, Modified | 0 | SY | \$ 12.00 | \$ - |
| 9 | Cold Milling HMA Pavement, Special | 27,200 | SY | \$ 6.00 | \$ 163,200.00 |
| 10 | Driveway, Remove | 892 | SY | \$ 9.00 | \$ 8,028.00 |
| 11 | Sidewalk, Remove | 0 | SF | \$ 3.00 | \$ - |
| 12 | Concrete Curb and Gutter, Remove | 12,255 | LF | \$ 10.00 | \$ 122,550.00 |
| 13 | Subgrade Undercut (As Needed) | 408 | CY | \$ 40.00 | \$ 16,320.00 |
| 14 | Pathway Grading | 98 | STA | \$ 3,000.00 | \$ 292,500.00 |
| 15 | Underdrain, 6 Inch, w/Geotextile Trench Wrap | 12,255 | LF | \$ 13.00 | \$ 159,315.00 |
| 16 | Aggregate Base, 6 Inch | 3,250 | SY | \$ 15.00 | \$ 48,750.00 |
| 17 | HMA, 5E1 | 2,992 | Ton | \$ 95.00 | \$ 284,240.00 |
| 18 | Interlayer | 27,200 | SY | \$ 4.00 | \$ 108,800.00 |
| 19 | HMA Surface Repair | 4,080 | SY | \$ 30.00 | \$ 122,400.00 |
| 20 | Curb and Gutter, Conc | 12,255 | LF | \$ 30.00 | \$ 367,650.00 |
| 21 | Driveway, Nonreinf Conc, 6 Inch | 1,449 | SY | \$ 42.00 | \$ 60,858.00 |
| 22 | Sidewalk, Conc, 4 Inch | 29,250 | SF | \$ 5.00 | \$ 146,250.00 |
| 23 | ADA Ramp Improvements | 34 | EA | \$ 750.00 | \$ 25,500.00 |
| 24 | Monument Adjustment Allowance | 1,500 | DLR | \$ 1.00 | \$ 1,500.00 |
| 25 | Permit Allowance | 1,000 | DLR | \$ 1.00 | \$ 1,000.00 |
| 26 | Drainage | 1 | LS | \$ 75,000.00 | \$ 75,000.00 |
| 27 | Permanent Pavement Markings & Signing | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 28 | Restoration | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 29 | Inspection Crew Days | 50 | DAY | \$ 640.00 | \$ 32,000.00 |
| | | | | Estimated Construction Cost Subtotal | \$ 2,495,179.05 |
| | | | | Contingency (5%) | \$ 124,758.95 |

OPINION OF PROBABLE CONSTRUCTION COST **Total Estimated Construction Cost: \$ 2,619,938.00**

In providing opinions of probable construction cost, the Client understands that the Consultant has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing, and that the Consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgement and experience. The Consultant makes no warranty, express or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.