LIVONIA STEVENSON HIGH SCHOOL
DRAIN OUTFALL EROSION REPAIR

ENGINEERING PLANS
33500 SIX MILE ROAD,
LIVONIA, MICHIGAN 48152

NTH PROJECT NO. 22000694

OWNER:
LIVONIA PUBLIC SCHOOLS
15125 Farmington Road
Livonia, MI 48154

ENGINEER:
NTH Consultants, LTD.
41780 Six Mile Road, Suite 200
Northville, Michigan 48168

PROJECT DESCRIPTION:
LIVONIA STEVENSON HIGH SCHOOL DRAIN OUTFALL EROSION REPAIR CONSISTS OF THE REPAIR OF AN ERODED OUTFALL USING RIP-RAP FILLED RENO MATTRESS, WITH ADDITIONAL DRAINAGE IMPROVEMENTS ACHIEVED THROUGH REGRADING OF THE EAST COURTYARD.

Sheet List Table

<table>
<thead>
<tr>
<th>Sheet Number</th>
<th>Sheet Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-100</td>
<td>COVER SHEET</td>
</tr>
<tr>
<td>C-101</td>
<td>TOPOGRAPHIC SURVEY (1 of 2)</td>
</tr>
<tr>
<td>C-102</td>
<td>TOPOGRAPHIC SURVEY (2 of 2)</td>
</tr>
<tr>
<td>C-103</td>
<td>DEMOLITION AND SESC PLAN</td>
</tr>
<tr>
<td>C-104</td>
<td>PROPOSED SITE AND GRADING PLAN (1 of 2)</td>
</tr>
<tr>
<td>C-105</td>
<td>PROPOSED SITE AND GRADING PLAN (2 of 2)</td>
</tr>
<tr>
<td>C-500</td>
<td>NOTES AND DETAILS</td>
</tr>
</tbody>
</table>
SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

1. Proceed by installation of soil erosion and sedimentation control devices as follows, unless permission is obtained from the governing agency. The contractor shall follow the procedures outlined below in the project specifications and construct the facilities shown on the drawings. Temporary facilities shall be removed by the contractor at the completion of construction unless ordered by the engineer to be left in place. The contractor shall provide a certified stormwater operator (CSWO) to monitor and maintain the effectiveness of the silt traps or sedimentation control devices. Where required, the contractor shall remove and replace filter materials which have become ineffective due to contamination or physical deterioration. The action of water, ice, gravity and wind will prevent water carrying eroded soil from entering a watercourse, sewer, adjacent lands, and roadways. Such sedimentation control devices shall include, but not be limited to, sediment traps, sediment basins, sediment basins, permanent filters, and sedimentation basins. The project work has been completed, inspected, and approved. The contractor shall maintain sediment controls in full accordance with the drawings and specifications. The site shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access.

2. Keep stormwater runoff pollution low. The purpose of this plan is to specify methods for temporary erosion control during construction. It is important to minimize the impact on the adjoining environment. It is important to minimize the impact on the adjoining environment. It is important to minimize the impact on the adjoining environment. It is important to minimize the impact on the adjoining environment. It is important to minimize the impact on the adjoining environment. It is important to minimize the impact on the adjoining environment.

3. Remove all temporary erosion control facilities when it becomes effective due to contamination of physical, detrimental to the adjoining environment. Remove all temporary erosion control facilities when it becomes effective due to contamination of physical, detrimental to the adjoining environment. Remove all temporary erosion control facilities when it becomes effective due to contamination of physical, detrimental to the adjoining environment. Remove all temporary erosion control facilities when it becomes effective due to contamination of physical, detrimental to the adjoining environment. Remove all temporary erosion control facilities when it becomes effective due to contamination of physical, detrimental to the adjoining environment.

4. Retain sediment within immediate construction area. Protect existing concrete during wet weather season (March, April, May) - 5 days prior to beginning any earth change activity. Protect existing concrete during wet weather season (March, April, May) - 5 days prior to beginning any earth change activity. Protect existing concrete during wet weather season (March, April, May) - 5 days prior to beginning any earth change activity. Protect existing concrete during wet weather season (March, April, May) - 5 days prior to beginning any earth change activity. Protect existing concrete during wet weather season (March, April, May) - 5 days prior to beginning any earth change activity.

5. Install silt fence and inlet filters on existing building (C-500 typ.) and pr. inlet filter. See detail 2 on sheet C-104 for information. Install silt fence and inlet filters on existing building (C-500 typ.) and pr. inlet filter. See detail 2 on sheet C-104 for information. Install silt fence and inlet filters on existing building (C-500 typ.) and pr. inlet filter. See detail 2 on sheet C-104 for information. Install silt fence and inlet filters on existing building (C-500 typ.) and pr. inlet filter. See detail 2 on sheet C-104 for information.

6. Maintain the effectiveness of the silt traps or sedimentation control devices. Where required, the contractor shall remove and replace filter materials which have become ineffective due to contamination or physical deterioration. Where required, the contractor shall remove and replace filter materials which have become ineffective due to contamination or physical deterioration. Where required, the contractor shall remove and replace filter materials which have become ineffective due to contamination or physical deterioration. Where required, the contractor shall remove and replace filter materials which have become ineffective due to contamination or physical deterioration. Where required, the contractor shall remove and replace filter materials which have become ineffective due to contamination or physical deterioration.

7. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access.

8. Temporary facilities shall be constructed to comply with Part 1 of Act No. 61 of 1969, the Michigan Water Quality Act, and the Michigan environmental protection act. Under the control of the local permit agency charged with administering the provisions of the act, the contractor shall follow the procedures outlined below in the project specifications and construct the facilities shown on the drawings. Temporary stabilization shall be performed with 24 hours of a significant rain event. The contractor shall be responsible for maintaining the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices.

9. Temporary facilities shall be constructed to comply with Part 1 of Act No. 61 of 1969, the Michigan Water Quality Act, and the Michigan environmental protection act. Under the control of the local permit agency charged with administering the provisions of the act, the contractor shall follow the procedures outlined below in the project specifications and construct the facilities shown on the drawings. Temporary stabilization shall be performed with 24 hours of a significant rain event. The contractor shall be responsible for maintaining the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices.

10. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access.

11. Temporary facilities shall be constructed to comply with Part 1 of Act No. 61 of 1969, the Michigan Water Quality Act, and the Michigan environmental protection act. Under the control of the local permit agency charged with administering the provisions of the act, the contractor shall follow the procedures outlined below in the project specifications and construct the facilities shown on the drawings. Temporary stabilization shall be performed with 24 hours of a significant rain event. The contractor shall be responsible for maintaining the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices.

12. Temporary facilities shall be constructed to comply with Part 1 of Act No. 61 of 1969, the Michigan Water Quality Act, and the Michigan environmental protection act. Under the control of the local permit agency charged with administering the provisions of the act, the contractor shall follow the procedures outlined below in the project specifications and construct the facilities shown on the drawings. Temporary stabilization shall be performed with 24 hours of a significant rain event. The contractor shall be responsible for maintaining the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices.

13. Temporary facilities shall be constructed to comply with Part 1 of Act No. 61 of 1969, the Michigan Water Quality Act, and the Michigan environmental protection act. Under the control of the local permit agency charged with administering the provisions of the act, the contractor shall follow the procedures outlined below in the project specifications and construct the facilities shown on the drawings. Temporary stabilization shall be performed with 24 hours of a significant rain event. The contractor shall be responsible for maintaining the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices.

14. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access. All disturbed surface area, including utility trenches, shall be temporarily graded to facilitate access.

15. SEDIMENTATION CONTROL DEVICES WEEKLY AND WITHIN 24 HOURS OF A SIGNIFICANT RAIN EVENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF PERMANENT TURF. TURF ESTABLISHMENT MEASURES SHALL BE MAINTAINED AS WOULD ANY OTHER DEVICES PRIOR TO ESTABLISHMENT OF PERMANENT TURF.

16. Temporary facilities shall be constructed to comply with Part 1 of Act No. 61 of 1969, the Michigan Water Quality Act, and the Michigan environmental protection act. Under the control of the local permit agency charged with administering the provisions of the act, the contractor shall follow the procedures outlined below in the project specifications and construct the facilities shown on the drawings. Temporary stabilization shall be performed with 24 hours of a significant rain event. The contractor shall be responsible for maintaining the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices.

17. Temporary facilities shall be constructed to comply with Part 1 of Act No. 61 of 1969, the Michigan Water Quality Act, and the Michigan environmental protection act. Under the control of the local permit agency charged with administering the provisions of the act, the contractor shall follow the procedures outlined below in the project specifications and construct the facilities shown on the drawings. Temporary stabilization shall be performed with 24 hours of a significant rain event. The contractor shall be responsible for maintaining the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices.

18. Temporary facilities shall be constructed to comply with Part 1 of Act No. 61 of 1969, the Michigan Water Quality Act, and the Michigan environmental protection act. Under the control of the local permit agency charged with administering the provisions of the act, the contractor shall follow the procedures outlined below in the project specifications and construct the facilities shown on the drawings. Temporary stabilization shall be performed with 24 hours of a significant rain event. The contractor shall be responsible for maintaining the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices.

19. Temporary facilities shall be constructed to comply with Part 1 of Act No. 61 of 1969, the Michigan Water Quality Act, and the Michigan environmental protection act. Under the control of the local permit agency charged with administering the provisions of the act, the contractor shall follow the procedures outlined below in the project specifications and construct the facilities shown on the drawings. Temporary stabilization shall be performed with 24 hours of a significant rain event. The contractor shall be responsible for maintaining the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices.

20. Temporary facilities shall be constructed to comply with Part 1 of Act No. 61 of 1969, the Michigan Water Quality Act, and the Michigan environmental protection act. Under the control of the local permit agency charged with administering the provisions of the act, the contractor shall follow the procedures outlined below in the project specifications and construct the facilities shown on the drawings. Temporary stabilization shall be performed with 24 hours of a significant rain event. The contractor shall be responsible for maintaining the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices. Maintain the effectiveness of the silts and sedimentation control devices.
1. Topographic survey was provided by Kem-Tec Professional Engineering Surveying & Environmental Services on May 5, 2023. All existing information shown is from this survey of record or was supplemented by information from site notes and historical drawings.

2. All exposed soil stockpiles shall be enclosed in silt fencing until removed from the site or provided with permanent erosion control measures.

3. The contractor shall provide necessary traffic control and signage to maintain access to all existing property throughout construction in accordance with applicable state and local regulations and standards. Slots in the temporary fence located at the location of existing site features shall be provided for pedestrian and vehicular safety.

4. The contractor shall avoid damage to the existing items designated to remain. Any damage that occurs as a result of the contractor's operations shall be repaired by the contractor at no additional cost to the owner.

5. The contractor is responsible for providing and maintaining all necessary construction staking and grade and alignment controls.

6. All existing site features shall be protected unless otherwise indicated on plans.

7. All areas of earth disturbance caused by construction activities shall be instantly seeded and mulched with 3" topsoil and MDOT Class A seed where final earth stabilization measures are not specifically designated.

8. The contractor shall extend riprap over the crown and up to the headwall of the pipe.

9. Note: See details 5 and 6 on Sheet C-500 for full channel dimensions.
INTEGRATE EACH LIFT INTO THE PREVIOUS LIFT BY TECHNIQUES SUCH AS SCARIFYING EACH LIFT AND BY PROTECT THE COMPACTED SOIL FROM DETRIMENTAL CLIMATIC EFFECTS DURING CONSTRUCTION BY DOING LIFT. THE MAXIMUM CLOD SIZE IS 4 INCHES. USING COMPACTION EQUIPMENT THAT IS CAPABLE OF PENETRATING THE THICKNESS OF EACH COMPACTED PLACE AND COMPACT EACH LIFT WITH A GENERAL THICKNESS OF 6 INCHES AFTER COMPACTION OR THE DETERMINED BY THE MODIFIED PROCTOR TEST, ASTM D1557-91.


INSTALL A 2-INCH DIAMETER HOLE THROUGH THE SPLASH APRON AND CONTINUE PLACING THE MATERIAL FOR SUPPORT OF THE PROPOSED CONSTRUCTION ACTIVITIES. REMOVE AND DISPOSE OF EXISTING LOOSE SOILS, DEBRIS AND ROCKS FROM WITHIN THE AREA IDENTIFIED DURING CONSTRUCTION ACTIVITIES. MINIMAL DISCHARGE OCCURS CONTINUOUSLY INDEPENDENT OF FLOW OF WATER FROM EXISTING 36-INCH STORM SEWER OUTFALL CANNOT BE STOPPED OR INTERRUPTED PROVIDE TEMPORARY SHORING AS REQUIRED TO SUPPORT THE EXISTING CONCRETE HEADWALL/SPLASH APRON STRUCTURE PRIOR TO START OF HEADWALL OUTLET REPAIR CONSTRUCTION ACTIVITIES. SHORING SHALL BE DESIGNED AND INSTALLED TO REMAIN IN PLACE AFTER PLACING OF FLOWABLE FILL.

RE-COMPACT ANY SOIL LIFT THAT HAS ITS INTEGRITY SO ADVERSELY AFFECTED BY WEATHER THAT THE SOIL LIFT IS NO LONGER IN COMPLIANCE WITH THE REQUIREMENTS OF THESE PLANS. NOT USING FROZEN SOIL IN ANY PART OF THE COMPACTED SOIL. REMOVAL SHALL BE TO COMPETENT CRACKING MUST BE REMOVED.

ENSURE THAT THE COMPACTED SOIL IS NOT SUBJECT TO DESICCATION CRACKING BY SPRINKLING THE LANDSCAPE RESTORATION DETAIL.