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**CYPRESS POINTE**  
**SUBDIVISION OBSERVATION REPORT**

**July 25, 2012**

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**HR GREEN JOB NO. 86120056**

## **Cypress Pointe Subdivision Observation Report**

HR Green has performed a review of the available documents for the subdivision improvements located in the Cypress Pointe subdivision and field observation of the work completed by the developer. Subsequently, HR Green has compiled a punchlist of unfinished items that were part of the proposed improvements per the available subdivision documents.

The Cypress Pointe Subdivision Observation Report includes the following items:

- Punchlist identifying the outstanding and deficient subdivision improvement items
- Detention Basin Verification and Exhibit A
- Parcel Identification (Exhibit B)
- Engineer's Opinion of Probable Cost (E.O.P.C.) (Exhibit C)
- Location Map (Exhibit D)

The following documents were used in preparing the punchlist scope of work:

- Plat of Subdivision
- Improvement Plans for Cypress Pointe, dated June 25, 2004, prepared by Cowhey Gudmundson Leder, Ltd.
- Pavement cores performed through HR Green
- Photographs

The following documents were unavailable:

- Landscaping plans
- Record drawings
- Developer agreements
- Soil borings
- Meeting minutes
- Daily field reports

### **I. PUNCHLIST**

It is recommended that acceptance of this subdivision be contingent upon the completion of the noted outstanding and deficient items, and subsequent observation and approval by the Village of Homer Glen.

#### **Roadway**

Roadway improvements were observed for compliance with the approved subdivision improvement plans. The subdivision pavement includes the Hot-Mix Asphalt (HMA) binder course without the HMA surface course. HR Green had pavement cores taken at random locations on the roadways to identify the actual binder course and aggregate base course thicknesses.

The following table includes the planned pavement depths and actual pavement depths at locations randomly chosen on the roadways.

| Roadway         | Plan Surface Depth | Actual Surface Depth | Plan Binder Depth | Actual Binder Depth | Plan Agg. Base Cse. Depth | Actual Agg. Base Cse. Depth |
|-----------------|--------------------|----------------------|-------------------|---------------------|---------------------------|-----------------------------|
| Mackenzie Drive | 1.5"               | 0"                   | 2.5"              | 2"                  | 12"                       | 10"                         |
| Monterey Drive  | 1.5"               | 0"                   | 2.5"              | 2"                  | 12"                       | 10"                         |

Note: Surface course remains unpaved.

Pavement distress is evident in various areas due to the lack of plan pavement depths, utility trench settlement and the exposure to inadequate drainage from the pavement into the gutter. The difference between the binder course elevations and the gutter elevations will require an estimated 2" of HMA overlay thickness throughout Cypress Pointe. The pavement distress can be resolved by removing the existing binder course pavement and underlying aggregate/subgrade material and replacement with 12" of new aggregate base course and 2.5" of binder course. Following the pavement patching would be the HMA surface course overlay to complete the roadway improvements. Cold milling the existing surface course pavement to establish a butt joint near Will-Cook Road will also be necessary.

The following pavement improvements are recommended prior to acceptance of the subdivision by the Village of Homer Glen.

| Roadway         | Pavement Patching (2.5" HMA Binder Course with 12" Aggregate Base Course, Type B) | HMA Surface Course, Mix 'C', N50 | HMA Surface Removal – Butt Joint |
|-----------------|---|----------------------------------|----------------------------------|
| Mackenzie Drive | 73 SY<br>(60' X 7', 12' X 10',<br>15' X 8')                                       | 504 Tons<br>(4,502 SY at 2")     | N/A                              |
| Monterey Drive  | 36 SY<br>(25' X 8', 12' X 10')  | 168 Tons<br>(1,502 SY at 2")     | 40 SY<br>(18' X 10' X 2)         |
| <b>TOTALS:</b>  | <b>109 SY</b>   | <b>672 Tons</b>                  | <b>40 SY</b>                     |

Note: Due to binder course elevation deficiencies and roadway settlement, HR Green provided estimated average surface course thicknesses necessary to finish paving the roadway according to plan.

Prior to the pavement improvements, combination concrete curb and gutter replacement will be necessary. The curb and gutter is to be removed and replaced. Each section shall be cut to full depth, removed and replaced with dowel bars, proper form work and finishing techniques.

The following table includes sections of curb and gutter determined to be unacceptable because of heaving, settlement and/or damage.

| Roadway         | Combination Concrete Curb and Gutter Removal and Replacement                 |
|-----------------|--|
| Mackenzie Drive | 90 FT<br>Lot 19: 15'<br>Lot 20: 5'<br>15135: 30'<br>15206: 10'<br>15234: 30' |
| Monterey Drive  | 30 FT<br>Lot 21: 10'<br>12021: 10'<br>12034: 10'                             |
| <b>TOTAL:</b>   | <b>120 FT</b>  |

### Storm Sewer Appurtenances

Storm Sewer structures were observed for compliance with the approved subdivision improvement plans. It is recommended that all storm sewer structures be cleaned in addition to the correction of any deficiencies prior the Village of Homer Glen taking ownership and maintenance responsibilities of the storm sewer system.

It is recommended that the following defects be repaired prior to Village acceptance of the subdivision.

| Item No. | Structure # | Defect/Corrective Action   |
|----------|-------------|--|
| 1.       | INL 22      | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul> |
| 2.       | INL 24      | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul> |
| 3.       | INL 18 A    | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul> |
| 4.       | INL 34      | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul> |
| 5.       | INL 36      | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul> |
| 6.       | INL 38      | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul> |

|     |                      |   |
|-----|----------------------|---|
| 7.  | INL 32               | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 8.  | INL 25               | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 9.  | INL 28 C             | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 10. | CB 23                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Install steps</li> </ul>   |
| 11. | CB 31                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Install steps</li> </ul>   |
| 12. | CB 13 B              | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Install steps</li> </ul>   |
| 13. | CB 33                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Install steps</li> </ul>   |
| 14. | CB 37                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Install steps</li> </ul>   |
| 15. | CB 27                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Install steps</li> </ul>   |
| 16. | CB 26                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Install steps</li> </ul>   |
| 17. | CB 16                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Install steps</li> </ul>   |
| 18. | CB 3 A<br>RESTRICTOR | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Install steps</li> </ul>   |
| 19. | MH 21                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> <li>▪ Remove filter fabric</li> </ul>  |
| 20. | MH 20                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Remove filter fabric</li> <li>▪ Provide concrete bench</li> </ul>  |
| 21. | MH 19                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 22. | MH 18                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 23. | MH 30                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 24. | MH 13 A              | <ul style="list-style-type: none"> <li>▪ Could not locate lid. Assume buried. Adjust to match final grade.</li> <li>▪ Clean out debris (Assumed)</li> <li>▪ Provide concrete bench (Assumed)</li> </ul> |
| 25. | MH 13                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 26. | MH 12                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 27. | MH 11                | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |

|     |                              |   |
|-----|------------------------------|---|
| 28. | MH 10                        | <ul style="list-style-type: none"> <li>▪ Could not locate lid. Assume buried. Adjust to match final grade.</li> <li>▪ Clean out debris (Assumed)</li> <li>▪ Provide concrete bench (Assumed)</li> </ul> |
| 29. | MH 29                        | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> <li>▪ Install steps</li> </ul>   |
| 30. | MH 28                        | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 31. | MH 14                        | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 32. | MH 17                        | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 33. | MH 15                        | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 34. | MH 9                         | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 35. | MH 5                         | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 36. | MH 28 A                      | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 37. | MH 28 B                      | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 38. | Extra MH<br>Lot 19/20        | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 39. | MH 4                         | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 40. | MH 2                         | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 41. | MH 6                         | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> <li>▪ Provide concrete bench</li> </ul>  |
| 42. | MH 7<br>SPECIAL<br>STRUCTURE | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> </ul>  |
| 43. | FES 1                        | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> </ul>  |
| 44. | FES 3                        | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> </ul>  |
| 45. | FES 8                        | <ul style="list-style-type: none"> <li>▪ Clean out debris</li> </ul>  |

**Sanitary Sewer Appurtenances**

Sanitary Sewer manholes were observed for compliance with the approved subdivision improvement plans. It is HR Green’s understanding that the sanitary sewer system is owned and maintained by Illinois American Water. These improvements are not owned and maintained by the Village of Homer Glen, however, it would be beneficial to observe the sanitary sewer manholes to identify any defects to the structures that could impact other public infrastructure improvements and threaten the health and safety of the public.

It is recommended that the following defects be coordinated with Illinois American Water for review and correction prior to Village acceptance of the subdivision.

| Item No. | Structure # | Defect/Corrective Action                             |
|----------|-------------|--|
| 1.       | SAN MH 7    | ▪ Could not locate lid. Adjust to match final grade. |
| 2.       | SMH 4       | ▪ Could not locate lid. Adjust to match final grade. |

Note: The letter “S” is marked in the curb to identify sanitary sewer service crossing locations.

**Watermain Appurtenances**

Watermain fire hydrants, valve boxes and water service buffalo boxes were observed for compliance with the approved subdivision improvement plans. It is HR Green’s understanding that the water supply system is owned and maintained by Illinois American Water. These improvements are not owned and maintained by the Village of Homer Glen, however, it would be beneficial to observe the watermain appurtenances to identify any defects that could impact other public infrastructure improvements and threaten the health and safety of the public.

HR Green was not responsible to determine if the valves serving water service lines, fire hydrants or watermain mainline were operable (keyable). Assumptions were made based on the visual condition of the appurtenances and the recommended associated repairs. It is recommended to have the Village of Homer Glen/Illinois American Water determine if every valve within the subdivision, which may not be identified in the punch list, is functioning properly prior to performing corrections to water main appurtenances to establish any adjustments to the scope of work.

It is recommended that the following defects be coordinated with Illinois American Water for review and correction prior to Village acceptance of the subdivision.

| Item No. | Appurtenance # | Defect/Corrective Action  |
|----------|----------------|---|
| 1.       | FH 5           | ▪ Fire hydrant and auxiliary valve box appear low. Adjust to match final grade. |

|    |              |   |
|----|--------------|---|
| 2. | B-Box Lot 1  | ▪ Could not locate. Assume damaged and replacement will be necessary. |
| 3. | B-Box Lot 20 | ▪ Could not locate. Assume damaged and replacement will be necessary. |
| 4. | B-Box Lot 21 | ▪ B-Box appears to be set too low. Adjust to match final grade.       |

Notes:

1. The letter "W" is marked in the curb to identify water service crossing locations.
2. Water service buffalo boxes that appeared higher than future finished surrounding grades have not been identified in the deficiency list, as they can be lowered with minimal effort during the sidewalk and restoration improvements.

**Sidewalk**

Sidewalk improvements were observed for compliance with the approved subdivision improvement plans. The plans for Cypress Pointe include providing a 5' wide sidewalk throughout the entire subdivision. Sidewalk has been installed adjacent to lots with finished homes. The punchlist includes completing proposed sidewalk adjacent to undeveloped lots within the public Right-Of-Way and correcting any deficient sidewalk the exists.

It is critical to adhere to the State of Illinois American's with Disabilities Act (A.D.A.) requirements set forth for sidewalk approaches made accessible to the handicap. In order to obtain conformance with the plans and the State of Illinois requirements, A.D.A. compliant sidewalk approach improvements have been included in this report where sidewalk approaches are proposed or need corrections.

The following table includes recommendations for sidewalk related improvements to be performed prior to Village acceptance of the subdivision.

| Roadway         | P.C.C. Sidewalk (5" depth)   | Detectable Warnings   |
|-----------------|--|---|
| Mackenzie Drive | 6,545 SF<br>Lot 6: 109' X 5'<br>Lot 7: 120' X 5'<br>Lot 13: 10' X 5'<br>Lot 15: 100' X 5'<br>Lot 16: 220' X 5'<br>Lot 17: 120' X 5'<br>Lot 19: 175' X 5'<br>Lot 20: 275' X 5'<br>Lot 21: 180' X 5' | 56 SF<br>Lot 6: 4' X 2'<br>Lot 7/8: 4' X 2'<br>Lot 13: 4' X 2'<br>Lot 15/16: 4' X 2'<br>Lot 19: 4' X 2'<br>Lot 20: 4' X 2'<br>Lot 21: 4' X 2' |

|                |  |   |
|----------------|--|---|
| Monterey Drive | 2,050 SF<br>Lot 1: 90' X 5'<br>Lot 2: 80' X 5'<br>Lot 18: 130' X 5'<br>Lot 21: 90' X 5'<br>Island median: 20' X 5' | 40 SF<br>Lot 1: 4' X 2'<br>Island median: 4' X 2' X 2<br>Lot 18: 4' X 2'<br>Lot 21: 4' X 2' |
| <b>TOTALS:</b> | <b>8,595 SF</b>  | <b>96 SF</b>  |

Note: 2" of aggregate base course is to be included for the sidewalk improvements per the improvement plans.

### Street Lighting

The Cypress Pointe improvement plans provided proposed street light locations, however, no standard details were included. Decorative street lighting exists and the locations appear to be installed at or near the plan locations. The decorative street light style matches the styles used in several subdivisions within the Village of Homer Glen. Visual day time and night time observations of the street lighting indicated that all street lights were functioning and no deficiencies were observed.

### Signage and Pavement Markings

Limited signage and no pavement marking improvements are included in the Cypress Pointe improvement plans. A stop sign is located at the intersection of Monterey Drive and Will-Cook Road as proposed in the plans. Street name signs exist at the Monterey Drive intersections with Mackenzie Drive and Will-Cook Road. HR Green has not identified the need for additional signage or pavement markings based on the information provided along with the characteristics of the subdivision.

### Restoration and Landscaping

Restoration improvements within the public Right-Of-Way parkway areas are recommended for Village acceptance of the subdivision. The recommended restoration improvements consist of weed removal, placement of topsoil, seed, fertilizer and erosion control blanketing within the parkway areas between the sidewalk and the back of curb along with the space between the back of the proposed sidewalk and the Right-Of-Way line. Some excavation may be necessary in the parkway areas to accommodate a proper amount of topsoil for adequate turf growth and this work would be performed as part of the topsoil placement preparation. It is recommended that water service buffalo boxes, fire hydrants and utility structures be level with the desired finished restoration grades.

An estimated quantity of topsoil needed to complete the restoration improvements within the parkway has been included in the punchlist. A topsoil stockpile remains on Lot 6 and Lot 7. An estimated volume of the topsoil stockpile has been calculated. Furnishing

topsoil from outside of the subdivision site will not be necessary as a result of the topsoil stockpile quantity being in excess of the estimated volume required to complete the parkway restoration improvements. It is recommended that the topsoil needed to complete the restoration be pulverized from the stockpile and placed on site. It is recommended that the balance of the stockpiled topsoil no longer needed for the restoration improvements be hauled off site. Upon hauling the topsoil off site, it is recommended that the area remaining be provided with seed, fertilizer and erosion control blanket. HR Green has provided an estimated cost for the removal of the stockpile material.

Landscaping plans for Cypress Pointe were unavailable for HR Green to compare the intended landscaping improvements to what currently exists. With the understanding that trees will need to be provided within the parkways prior to Village acceptance of the subdivision, HR Green has included an estimated quantity of trees following Village of Homer Glen tree spacing criteria (40' c-c) as specified in the Village's Subdivision Ordinance. If there are completed lots with homes, sidewalk and restored parkways that are missing parkway trees or have parkway trees that appear to be dying and in need of replacement, these deficiencies are indicated in the punchlist.

HR Green has also included the option of restoring the areas surrounding the basin on Outlot A with topsoil, seed, fertilizer and erosion control blanket, as this area appears to have never been restored or landscaped. HR Green was not able to determine if any project specific plantings were intended, as the landscape plans were unavailable. If the Village desires native plantings around the ponds, HR Green does have landscape architects on staff and we can provide these native landscape services for additional costs.

The following table includes the recommended restoration and parkway tree improvements necessary to obtain Village acceptance of the subdivision.

| Roadway / Area  | Restoration<br>(Topsoil, Seed, Fertilizer<br>and Erosion Control<br>Blanket)                   | Parkway Trees   | Topsoil Removal |
|-----------------|--|---|-----------------|
| Mackenzie Drive | 1,806 SY<br>(West and south sides:<br>550' X 12.5')<br>(East and north sides:<br>750' X 12.5') | 35 EA<br>40' spacing within<br>1,300': 33<br>15138: 2 | N/A             |
| Monterey Drive  | 521 SY<br>(North side: 160' X 12.5')<br>(South side: 215' X 12.5')                             | 9 EA<br>(40' spacing within<br>375')                  | N/A             |

|  |                          |              |  |
|--|--------------------------|--------------|--|
| Lots 6 & 7<br>(Topsoil stockpile location) | 2,300 SY<br>(230' X 90') | N/A          | 4,212 CY<br>(230' X 90' X 6' = 4,600 CY) –<br>(Parkway restoration area at 6" deep = 388 CY) |
| <b>TOTALS:</b>                             | <b>4,627 SY</b>          | <b>44 EA</b> | <b>4,212 CY</b>  |

Notes:

1. Assume an average of 6" of topsoil placement necessary for restoration.
2. Parkway tree type to be determined by the Village of Homer Glen in accordance with Tree Preservation Ordinance 06-014.
3. For finished lots with missing parkway trees, 2 trees per parkway has been figured unless the lot width dictates more trees to meet the 40' c-c criteria as specified in the Village's Subdivision Ordinance.

The following table includes the optional restoration area to be considered by the Village for acceptance of the subdivision.

| Optional Area | Optional Restoration<br>(Topsoil, Seed, Fertilizer and Erosion Control Blanket) | Topsoil Removal<br>(Balance after restoring optional area)                      |
|---------------|---|---|
| Outlot A      | <b>4,472 SY</b><br>(500' X 60', 100' X 25', 250' X 10', 175' X 30')             | <b>3,715 CY</b><br>4,212 CY – (Outlot A restoration volume at 4" deep = 497 CY) |

Notes:

1. Assume 4" topsoil depth for restoration of Outlot A.
2. Topsoil Removal quantities shown are estimated final volumes to be removed from the project site after utilizing the processed topsoil for the optional areas.

**Erosion Control**

Existing erosion control measures that are commonly used such as perimeter erosion barrier and filter fabric for inlet and pipe protection become no longer applicable after vegetation has developed for areas that were once solely comprised of earth material such as clay or other soils and subject to erosion. In most cases, enough vegetation will develop such that the vegetation itself becomes a means of erosion control. HR Green

determined that vegetation growth has become established throughout the Cypress Pointe subdivision, which includes the Right-Of-Way, private lots and Outlot A. As a result, the existing perimeter erosion barrier and filter fabric (inlet and pipe protection) measures are recommended to be removed unless otherwise indicated. Filter fabric removal is covered in the storm sewer deficiency list.

The following table includes the perimeter erosion barrier recommended for removal prior to Village acceptance of the subdivision.

| <b>Location</b>              | <b>Perimeter Erosion Barrier Removal</b> |
|------------------------------|--|
| Lot 1 (North side)           | 95 FT                                    |
| Lot 2 (North side)           | 80 FT                                    |
| Lot 6 (North and west sides) | 250 FT                                   |
| Lot 7 (West and south sides) | 250 FT                                   |
| Lot 15 (South side)          | 70 FT                                    |
| Lot 16 (South side)          | 100 FT                                   |
| <b>TOTAL:</b>                | <b>845 FT</b>                            |

During the erosion control observation, there were areas identified where erosion has occurred in the past, creating several eroded voids within the ground surface at various areas. Some of these areas may not be subject to future erosion issues due to surrounding vegetation but they are assumed as hazardous to pedestrians walking through the areas due to the differential in grades. It is recommended that these areas be corrected by means of re-grading or filling the eroded areas with earth material and restoring the surface with seed, fertilizer and erosion control blanket.

The following table includes the recommended erosion corrections to be performed prior to Village acceptance of the subdivision.

| Location     | Erosion Corrections          |
|--------------|------------------------------|
| Lots 15 & 16 | <b>278 SY</b><br>(50' X 50') |

Note: Erosion corrections work includes necessary earth moving operations, necessary furnishing of placement of earth material from on site and placement of vegetation seed and erosion control blanket.

### Bike Path Improvements

The Cypress Pointe improvement plans include a proposed 8' wide asphalt bike path to be installed along the north side of Outlot A, from the west limit of the subdivision improvements to the east limit of the subdivision improvements (Will-Cook Road Right-Of-Way). The bike path does not exist.

The following table includes the bike path improvements necessary to comply with the subdivision plans and allow for Village acceptance of the subdivision.

| Location              | Earth Excavation                  | Aggregate Base Course, Type B (6") | HMA Surface Course, Mix 'C', N50 |
|-----------------------|-----------------------------------|------------------------------------|----------------------------------|
| East side of Outlot A | <b>125 CY</b><br>(630' X 8' X 8") | <b>560 SY</b><br>(630' X 8')       | <b>63 Tons</b><br>(560 SY at 2") |

Note: The proposed bike path work would entail incidental restoration to areas impacted during construction.

## II. DETENTION BASIN VERIFICATION

### Proposed and Existing Drainage Features Summary

HR Green performed topographical survey services on the Cypress Pointe Subdivision on June 6<sup>th</sup>, 2012. The specific information collected included topography of the subdivision's stormwater detention basin including interconnecting storm sewer pipes and structures adjacent to said detention basin in it's existing condition. The basin was surveyed along the top of bank and down to the surface water elevations. This analysis was based on the Engineering Plans dated 06/25/04 prepared by Cowhey Gudmundson Leder, LTD. For the Cypress Pointe subdivision, there is a single wet bottom retention pond that is proposed to be controlled by a dual restrictor manhole. See Exhibit A. The 2-year storm is controlled by a 4" orifice within a weir wall. The 100-year storm is controlled by a 5.5" restrictor pipe proposed to be mortared into the 12" outfall pipe of the restrictor manhole. The restrictors were under water at the time of our survey and the sizes could not be verified. Below is a summary of the proposed and existing conditions of the control structures.

|   | PROPOSED         | EXISTING  | DIFFERENCE             |
|---|------------------|---|------------------------|
| WEIR WALL-<br>TOP ELEV.                           | 716.45           | 716.25  | 0.20' LOW              |
| 2 YEAR<br>RESTRICTOR<br>INV ELEV.<br>(diameter)   | 714.50<br>(4")   | NOT ACCESSABLE -<br>UNDER WATER                     | Unknown                |
| 100 YEAR<br>RESTRICTOR<br>INV ELEV.<br>(diameter) | 714.50<br>(5.5") | 714.35 (12" pipe)<br>NOT ACCESSABLE-<br>UNDER WATER | 0.15' LOW<br>(Unknown) |
| 100 YEAR<br>EMERGENCY<br>OVERFLOW<br>WEIR ELEV.   | 721.00           | 719.90  | 1.1' LOW               |

### Volume Determination Summary

The Cypress Pointe Subdivision stormwater basin existing contour areas were imported into an Excel spreadsheet to calculate the volume of provided storage using the average end area method. The proposed storage volume was not included on the plans and the drainage calculations were not available. To determine the proposed volume the plan contours were digitized and calculated with the same method as the existing volume.

|                               | PROPOSED | EXISTING | DIFFERENCE |
|-------------------------------|----------|----------|------------|
| NWL                           | 714.70   | 714.40   | 0.30' LOW  |
| HWL                           | 721.00   | 719.90   | 1.10' LOW  |
| STORAGE<br>VOLUME<br>(AC.FT.) | 6.51     | 5.30     | 1.21 SHORT |

### Conclusions

The weir wall within the restrictor manhole and the 100-year restrictor orifice were constructed 0.20' and 0.15' low respectively. The 2 and 100 year orifice elevations and sizes could not be verified. The known deviations would result in a stormwater release rate that is greater than the rate proposed. The existing 100-year emergency overflow was found to be in an alternate location and at an elevation 1.1' lower than proposed. This results in a reduced storage volume for the basin. Based on the information available we were able to determine that the existing pond has 1.21 ac.ft. less storage volume than proposed. This basin does not comply with the design plans. Our analysis concludes that the existing pond is 19% short of the proposed storage volume. If corrective measures are deemed necessary, adjustments to the overflow weir or outfall pipes can be

evaluated. A detailed analysis of the original design calculations and existing site conditions would be necessary. HR Green can provide this service for an additional cost.

### **III. PARCEL IDENTIFICATION**

HR Green has researched the specific ownership of both private and public improvement property in the Cypress Pointe subdivision. The parcel data was obtained by utilizing 2011 tax records through the Will County Treasurer's Office. There are 22 lots within the subdivision numbered 1 through 22 and an outlot named Outlot A. Please refer to Exhibit B for parcel identification.

### **IV. ENGINEER'S OPINION OF PROBABLE COST**

The punch list items included in this report have been identified as construction action items with assigned quantities of work and associated unit pricing necessary to correct the deficiencies and complete the outstanding improvements necessary for Village acceptance of the subdivision. HR Green utilized 2012 unit prices for cost estimation purposes. Please refer to Exhibit C for the Engineer's Opinion of Probable Cost.

PROPOSED EMERGENCY  
 OVERFLOW ELEV=721.00

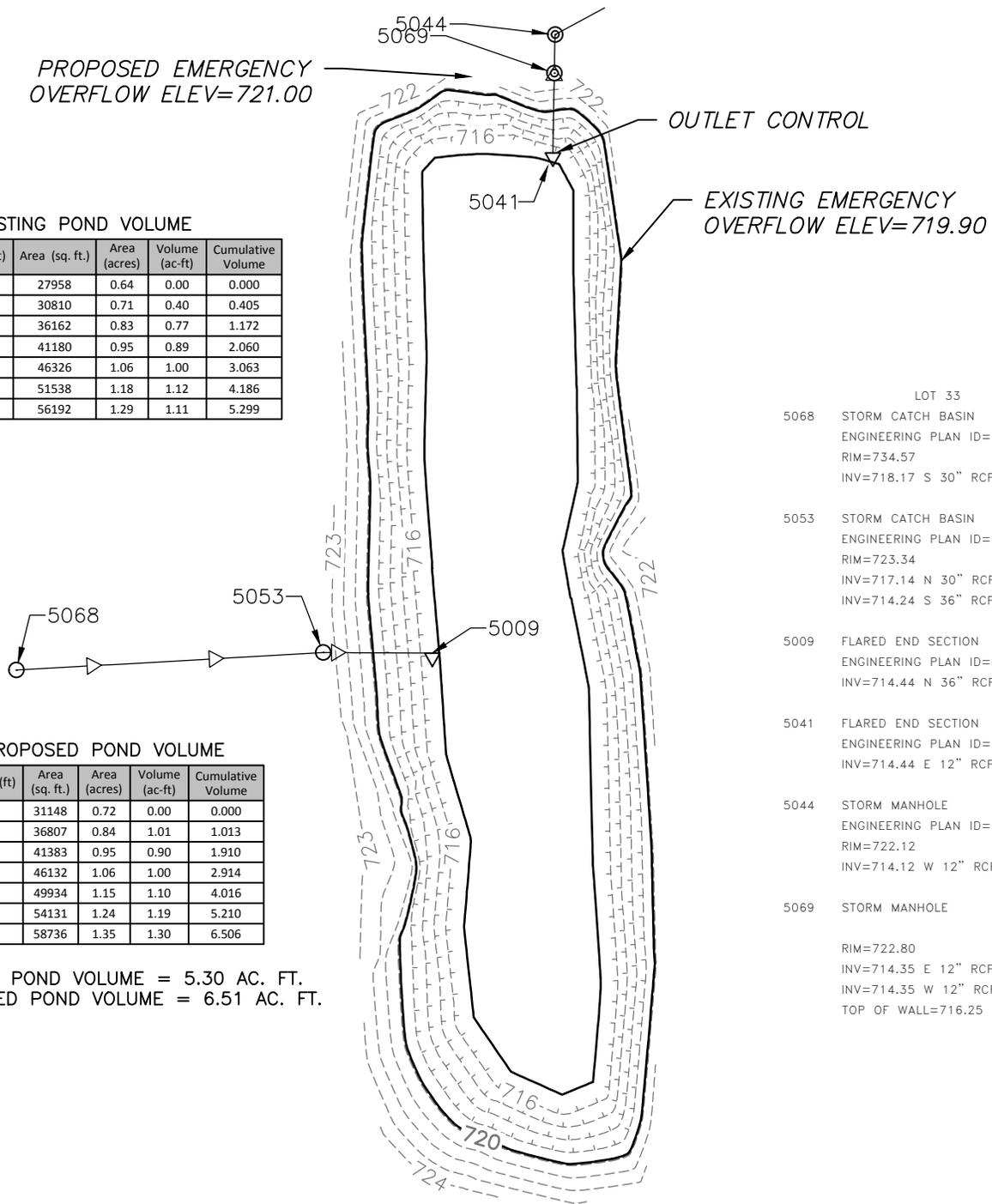
EXISTING POND VOLUME

| Elevation (ft) | Area (sq. ft.) | Area (acres) | Volume (ac-ft) | Cumulative Volume |
|----------------|----------------|--------------|----------------|-------------------|
| 714.4          | 27958          | 0.64         | 0.00           | 0.000             |
| 715            | 30810          | 0.71         | 0.40           | 0.405             |
| 716            | 36162          | 0.83         | 0.77           | 1.172             |
| 717            | 41180          | 0.95         | 0.89           | 2.060             |
| 718            | 46326          | 1.06         | 1.00           | 3.063             |
| 719            | 51538          | 1.18         | 1.12           | 4.186             |
| 719.9          | 56192          | 1.29         | 1.11           | 5.299             |

PROPOSED POND VOLUME

| Elevation (ft) | Area (sq. ft.) | Area (acres) | Volume (ac-ft) | Cumulative Volume |
|----------------|----------------|--------------|----------------|-------------------|
| 714.7          | 31148          | 0.72         | 0.00           | 0.000             |
| 716            | 36807          | 0.84         | 1.01           | 1.013             |
| 717            | 41383          | 0.95         | 0.90           | 1.910             |
| 718            | 46132          | 1.06         | 1.00           | 2.914             |
| 719            | 49934          | 1.15         | 1.10           | 4.016             |
| 720            | 54131          | 1.24         | 1.19           | 5.210             |
| 721            | 58736          | 1.35         | 1.30           | 6.506             |

EXISTING POND VOLUME = 5.30 AC. FT.  
 PROPOSED POND VOLUME = 6.51 AC. FT.



- LOT 33
- 5068 STORM CATCH BASIN  
ENGINEERING PLAN ID=14  
RIM=734.57  
INV=718.17 S 30" RCP
  - 5053 STORM CATCH BASIN  
ENGINEERING PLAN ID=9  
RIM=723.34  
INV=717.14 N 30" RCP  
INV=714.24 S 36" RCP
  - 5009 FLARED END SECTION  
ENGINEERING PLAN ID=8  
INV=714.44 N 36" RCP
  - 5041 FLARED END SECTION  
ENGINEERING PLAN ID=3  
INV=714.44 E 12" RCP
  - 5044 STORM MANHOLE  
ENGINEERING PLAN ID=2  
RIM=722.12  
INV=714.12 W 12" RCP
  - 5069 STORM MANHOLE  
  
RIM=722.80  
INV=714.35 E 12" RCP  
INV=714.35 W 12" RCP  
TOP OF WALL=716.25

REVISIONS

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Illinois Professional Design Firm # 184-001322



323 Alana Drive,  
 New Lenox, Illinois 60451  
 t. 815.462.9324 f. 815.462.9328  
 www.secgroupinc.com

CYPRESS POINTE  
 LOT 33

DATE:  
6/20/2012

HORIZ. SCALE:  
NOT TO SCALE

DWN. BY: BDE    DSN. BY: N/A    CHK. BY: MD

PROJECT NO.  
86120056

SHEET NO.  
1 OF 1



## EXHIBIT B

### Cypress Pointe Subdivision Parcel Identification

| Lot Number | Permanent Index Number (PIN) | Property Owner                           | Property Address | Property Street | Property City | Property State | Property Zip | Owner Address | Owner Street          | Owner City  | Owner State | Owner Zip |
|------------|------------------------------|--|------------------|-----------------|---------------|----------------|--------------|---------------|-----------------------|-------------|-------------|-----------|
| 1          | 16-05-13-201-004-0000        | OLD NATIONAL BANK                        |                  |                 |               |                |              | 625           | PLAINFIELD RD STE 424 | WILLOWBROOK | IL          | 60527     |
| 2          | 16-05-13-201-003-0000        | OLD NATIONAL BANK                        |                  |                 |               |                |              | 625           | PLAINFIELD RD STE 424 | WILLOWBROOK | IL          | 60527     |
| 3          | 16-05-13-201-001-0000        | ROSAS LYDIA E FRANCISCO                  | 15135            | S MACKENZIE DR  | HOMER GLEN    | IL             | 60491        | 15135         | S MACKENZIE DR        | HOMER GLEN  | IL          | 60491     |
| 4          | 16-05-13-201-002-0000        | DE CESARE FRANK EVA S                    | 12034            | W MONTEREY DR   | HOMER GLEN    | IL             | 60491        | 12034         | W MONTEREY DR         | HOMER GLEN  | IL          | 60491     |
| 5          | 16-05-13-279-012-0000        | SAMARA IMAD KARIMAN                      | 15138            | MACKENZIE DR    | HOMER GLEN    | IL             | 60491        | 15138         | MACKENZIE DR          | HOMER GLEN  | IL          | 60491     |
| 6          | 16-05-13-279-013-0000        | MORA BUILDERS INC                        |                  |                 |               |                |              | 12141         | W 159TH ST UNIT B     | HOMER GLEN  | IL          | 60491     |
| 7          | 16-05-13-279-014-0000        | MORA BUILDERS INC                        |                  |                 |               |                |              | 12141         | W 159TH ST UNIT B     | HOMER GLEN  | IL          | 60491     |
| 8          | 16-05-13-279-015-0000        | BANK ERIN M<br>PENNACHIO JOSEPH          | 15166            | S MACKENZIE DR  | HOMER GLEN    | IL             | 60491        | 15166         | S MACKENZIE DR        | HOMER GLEN  | IL          | 60491     |
| 9          | 16-05-13-279-016-0000        | SEKHRI VIRENDER                          | 15206            | S MACKENZIE DR  | HOMER GLEN    | IL             | 60491        | 15206         | S MACKENZIE DR        | HOMER GLEN  | IL          | 60491     |
| 10         | 16-05-13-279-017-0000        | PAVLIK EDWARD J REV TR                   | 15214            | S MACKENZIE DR  | HOMER GLEN    | IL             | 60491        | 15214         | S MACKENZIE DR        | HOMER GLEN  | IL          | 60491     |
| 11         | 16-05-13-279-018-0000        | HEDRICH DAVID RENEE                      | 15220            | S MACKENZIE DR  | HOMER GLEN    | IL             | 60491        | 15220         | S MACKENZIE DR        | HOMER GLEN  | IL          | 60491     |
| 12         | 16-05-13-279-019-0000        | MICHET ROBERT J SUSAN M                  | 15226            | MACKENZIE DR    | HOMER GLEN    | IL             | 60491        | 15226         | MACKENZIE DR          | HOMER GLEN  | IL          | 60491     |
| 13         | 16-05-13-279-020-0000        | DRZONEK ARNOLD LEE DIANE M               | 15234            | S MACKENZIE DR  | HOMER GLEN    | IL             | 60491        | 15234         | S MACKENZIE DR        | HOMER GLEN  | IL          | 60491     |
| 14         | 16-05-13-279-021-0000        | DESANTO JASON<br>TR 21238                | 15240            | S MACKENZIE DR  | HOMER GLEN    | IL             | 60491        | 15240         | S MACKENZIE DR        | HOMER GLEN  | IL          | 60491     |
| 15         | 16-05-13-279-022-0000        | MORA BUILDERS INC                        |                  |                 |               |                |              | 12141         | W 159TH ST UNIT B     | HOMER GLEN  | IL          | 60491     |
| 16         | 16-05-13-279-023-0000        | OLD NATIONAL BANK                        |                  |                 |               |                |              | 625           | PLAINFIELD RD STE 424 | WILLOWBROOK | IL          | 60527     |
| 17         | 16-05-13-279-030-0000        | MORA BUILDERS INC                        |                  |                 |               |                |              | 12141         | W 159TH ST UNIT B     | HOMER GLEN  | IL          | 60491     |
| 18         | 16-05-13-279-027-0000        | MORA BUILDERS INC                        |                  |                 |               |                |              | 12141         | W 159TH ST UNIT B     | HOMER GLEN  | IL          | 60491     |
| 19         | 16-05-13-279-029-0000        | OLD NATIONAL BANK                        |                  |                 |               |                |              | 625           | PLAINFIELD RD STE 424 | WILLOWBROOK | IL          | 60527     |
| 20         | 16-05-13-279-028-0000        | MORA BUILDERS INC                        |                  |                 |               |                |              | 12141         | W 159TH ST UNIT B     | HOMER GLEN  | IL          | 60491     |
| 21         | 16-05-13-279-025-0000        | MORA BUILDERS INC                        |                  |                 |               |                |              | 12141         | W 159TH ST UNIT B     | HOMER GLEN  | IL          | 60491     |
| 22         | 16-05-13-279-026-0000        | OLIVITO GIULIO NANCY                     | 12027            | MONTEREY DR     | HOMER GLEN    | IL             | 60491        | 12027         | MONTEREY DR           | HOMER GLEN  | IL          | 60491     |
| OUTLOT A   | 16-05-13-279-024-0000        | MILL CREEK DEVELOPMENT INC<br>TR 02-2469 |                  |                 |               |                |              | 18700         | S WOLF RD STE 204     | MOKENA      | IL          | 60448     |

Notes:

1. Outlot A serves the detention basin.
2. Subdivision plat recorded on 09/20/2004.
3. Information based upon 2011 property tax records.
4. Will County's current available documentation does not reflect recent property activity since 2011. Current information will be available as provided by Will County.



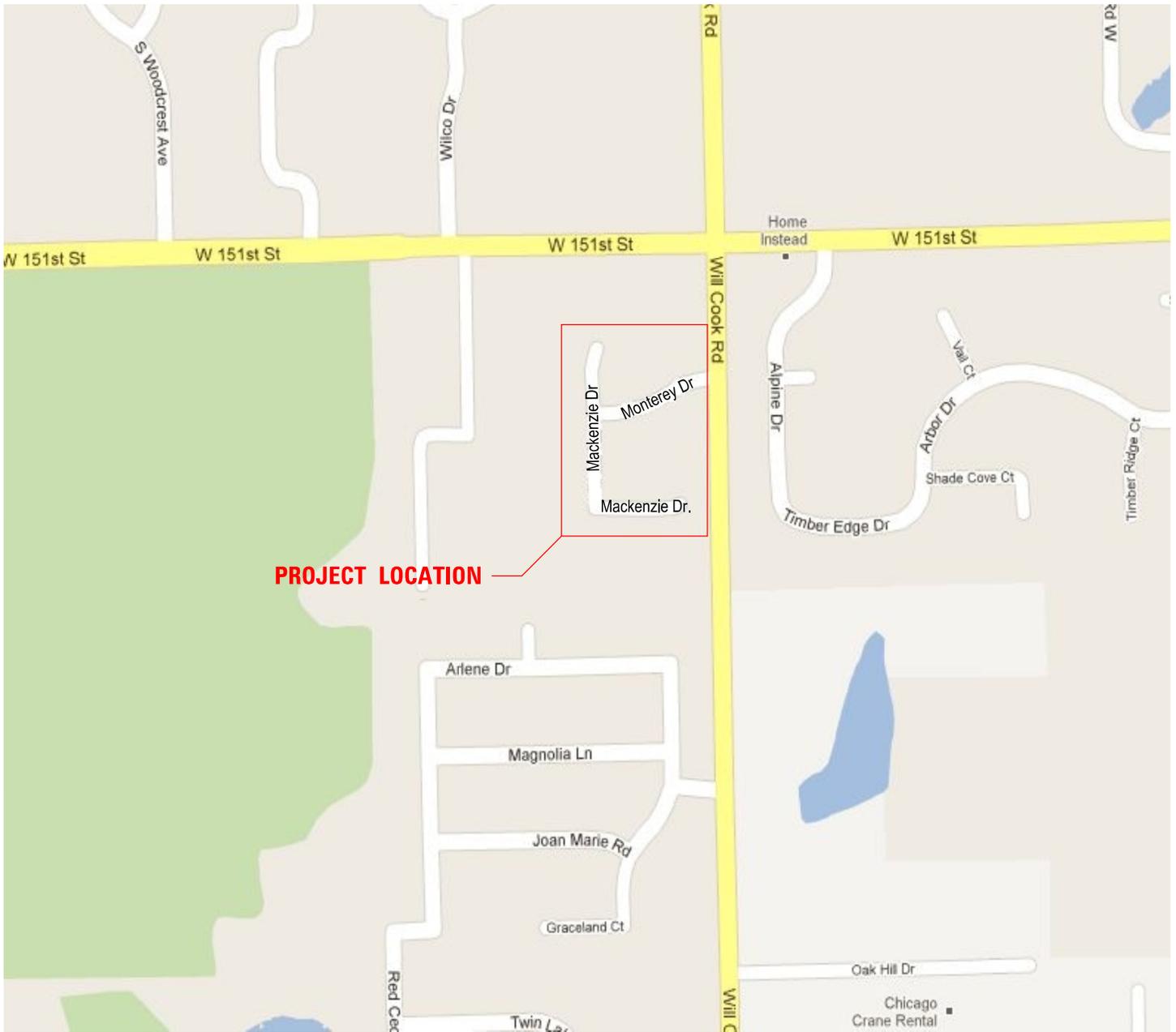
## EXHIBIT C Cypress Pointe - Engineer's Opinion of Probable Cost (July, 2012)

| ROADWAY NAME   |       | MACKENZIE DRIVE        | MONTEREY DRIVE                    | VARIOUS AREAS (PUBLIC AND PRIVATE LOTS) | TOTAL | UNIT COST  | ESTIMATED COST |
|--|-------|------------------------|-----------------------------------|---|-------|------------|----------------|
| ROADWAY LIMITS   |       | NORTH END TO SOUTH END | MACKENZIE DRIVE TO WILL-COOK ROAD |   |       |            |                |
| LENGTH (FOOT)  |       | 850                    | 340                               |   | 1,190 |            |                |
| WIDTH (FOOT)   |       | 28                     | 28                                |   |       |            |                |
| EXTRA AREA (SQ YD)   |       | 1,858                  | 444                               |   | 2,302 |            |                |
| AREA (SQ YD)   |       | 4,502                  | 1,502                             |   | 6,004 |            |                |
| BITUMINOUS MATERIALS (PRIME COAT)                            | GAL   | 450                    | 150                               |   | 600   | \$2.00     | \$1,200.00     |
| AGGREGATE (PRIME COAT)                                       | TON   | 9                      | 3                                 |   | 12    | \$20.00    | \$240.00       |
| HOT-MIX ASPHALT SURFACE COURSE, MIX 'C', N50                 | TON   | 504                    | 168                               |   | 672   | \$70.00    | \$47,040.00    |
| HMA BINDER COURSE REMOVAL AND REPLACEMENT (2.5")             | SQ YD | 73                     | 36                                |   | 109   | \$14.00    | \$1,526.00     |
| AGGREGATE BASE COURSE REMOVAL AND REPLACEMENT, TYPE B (12")  | SQ YD | 73                     | 36                                |   | 109   | \$18.00    | \$1,962.00     |
| HMA SURFACE REMOVAL - BUTT JOINT                             | SQ YD |                        | 40                                |   | 40    | \$15.00    | \$600.00       |
| COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT | FT    | 90                     | 30                                |   | 120   | \$30.00    | \$3,600.00     |
| PORTLAND CEMENT CONCRETE SIDEWALK (5")                       | SQ FT | 6,545                  | 2,050                             |   | 8,595 | \$6.00     | \$51,570.00    |
| DETECTABLE WARNINGS  | SQ FT | 56                     | 40                                |   | 96    | \$30.00    | \$2,880.00     |
| CLEANING INLETS  | EACH  |                        |                                   | 9                                       | 9     | \$100.00   | \$900.00       |
| CLEANING CATCH BASINS  | EACH  |                        |                                   | 9                                       | 9     | \$225.00   | \$2,025.00     |
| CLEANING MANHOLES  | EACH  |                        |                                   | 24                                      | 24    | \$185.00   | \$4,440.00     |
| CLEANING END SECTIONS  | EACH  |                        |                                   | 3                                       | 3     | \$100.00   | \$300.00       |
| CONCRETE BENCH FOR INLET                                     | EACH  |                        |                                   | 9                                       | 9     | \$125.00   | \$1,125.00     |
| CONCRETE BENCH FOR MANHOLE                                   | EACH  |                        |                                   | 24                                      | 24    | \$350.00   | \$8,400.00     |
| FRAMES TO BE ADJUSTED  | EACH  |                        |                                   | 4                                       | 4     | \$250.00   | \$1,000.00     |
| STEP INSTALLATION FOR STORM SEWER STRUCTURE                  | EACH  |                        |                                   | 10                                      | 10    | \$150.00   | \$1,500.00     |
| VALVE BOX ADJUSTMENT   | EACH  |                        |                                   | 1                                       | 1     | \$150.00   | \$150.00       |
| WATER SERVICE BUFFALO BOX REPLACEMENT                        | EACH  |                        |                                   | 2                                       | 2     | \$325.00   | \$650.00       |
| WATER SERVICE BUFFALO BOX ADJUSTMENT                         | EACH  |                        |                                   | 1                                       | 1     | \$125.00   | \$125.00       |
| TOPSOIL PLACEMENT  | SQ YD | 1,806                  | 521                               | 2,300                                   | 4,627 | \$6.00     | \$27,762.00    |
| SEEDING, CLASS 1A  | ACRE  | 0.37                   | 0.11                              | 0.48                                    | 0.96  | \$3,000.00 | \$2,880.00     |
| FERTILIZER   | POUND | 100                    | 30                                | 130                                     | 260   | \$5.00     | \$1,300.00     |
| EROSION CONTROL BLANKET                                      | SQ YD | 1,806                  | 521                               | 2,300                                   | 4,627 | \$2.50     | \$11,567.50    |
| PARKWAY TREE   | EACH  | 35                     | 9                                 |   | 44    | \$380.00   | \$16,720.00    |
| EROSION CORRECTIONS  | SQ YD |                        |                                   | 278                                     | 278   | \$6.50     | \$1,807.00     |
| PERIMETER EROSION BARRIER REMOVAL                            | FT    |                        |                                   | 845                                     | 845   | \$1.00     | \$845.00       |
| TOPSOIL REMOVAL  | CU YD |                        |                                   | 4,212                                   | 4,212 | \$11.00    | \$46,332.00    |
| OPTIONAL RESTORATION   | SQ YD |                        |                                   | 4,472                                   | 4,472 | \$8.50     | \$38,012.00    |
| EARTH EXCAVATION (BIKE PATH)                                 | CU YD |                        |                                   | 125                                     | 125   | \$35.00    | \$4,375.00     |
| HOT-MIX ASPHALT SURFACE COURSE, MIX 'C', N50 (BIKE PATH)     | TON   |                        |                                   | 63                                      | 63    | \$125.00   | \$7,875.00     |
| AGGREGATE BASE COURSE, TYPE B (6") (BIKE PATH)               | SQ YD |                        |                                   | 560                                     | 560   | \$10.00    | \$5,600.00     |

Notes:

1. Bituminous Materials (Prime Coat) = 0.1 Gal/SY.
2. Aggregate (Prime Coat) = 0.002 Ton/SY.
3. Filter fabric removal assumed to be included in cleaning of drainage structures.
4. Fertilizer includes Nitrogen, Phosphorous and Potassium nutrient types at 90lb/acre per nutrient type.
5. Price for Step Installation for Storm Sewer Structure is per structure, not per step.
6. PCC Sidewalk (5") includes 2" of aggregate base course. Any excavation for the sidewalk is incidental to the pay item.
7. Topsoil Placement includes weed removal, incidental excavation, on-site pulverizing and placement of topsoil (6" average depth) for restoration areas.
8. Topsoil Removal quantity is the estimated remaining quantity of topsoil upon completing the Topsoil Placement work. The balance of topsoil removal upon completing the Optional Restoration work is estimated to be 3,715 CY. Associated revised cost for Topsoil Removal = 3,715 CY X \$11/CY = \$40,865.00 in lieu of \$46,332.00 (per 4,212 CY).
9. The Village may be able to coordinate with area contractors for the removal and disposal of the excess topsoil stockpile material at significantly lower costs, as the material may benefit other projects.
10. Optional Restoration unit price includes weed removal, on-site pulverizing and placement of topsoil (4"), seeding, fertilizer and erosion control blanket.
11. 2012 unit prices are utilized for the Engineer's Opinion of Probable Cost.

|  |                     |
|--|---------------------|
| <b>SUB TOTAL:</b>  | <b>\$296,308.50</b> |
| <b>CONTINGENCY (10%):</b>  | <b>\$29,630.85</b>  |
| <b>PREPARATION OF CONTRACT PROPOSALS FOR BIDDING, SUBSEQUENT CONTRACT AWARD AND CONSTRUCTION OBSERVATION (6%):</b> |                     |
| <b>TOTAL:</b>  | <b>\$345,495.71</b> |



| REVISIONS |       |     |
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HRGreen.com  
 Illinois Professional Design Firm  
 # 184-001322

**VILLAGE OF HOMER GLEN  
 CYPRESS POINTE  
 LOCATION MAP**



SHEET ORIENTATION

|                         |                 |                 |
|-------------------------|-----------------|-----------------|
| DATE:<br>7/19/2012      |                 |                 |
| HORIZ. SCALE:<br>N.T.S. |                 |                 |
| DWN. BY:<br>RCB         | DSN. BY:<br>MJA | CHK. BY:<br>MJA |
| PROJECT NO.<br>86120056 |                 |                 |
| SHEET NO.               |                 |                 |

**Exhibit D**