



Agenda Item Executive Summary

Title: Proposed Northwest Winnetka Stormwater Improvements

Presenter: Steven M. Saunders, Director of Public Works/Village Engineer

Agenda Date: 07/02/2013

Consent: YES NO

| | |
|-------------------------------------|-------------------------|
| <input type="checkbox"/> | Ordinance |
| <input type="checkbox"/> | Resolution |
| <input type="checkbox"/> | Bid Authorization/Award |
| <input checked="" type="checkbox"/> | Policy Direction |
| <input type="checkbox"/> | Informational Only |

Item History:

September 11, 2012 Study Session
October 2, 2012 Council Meeting

Executive Summary:

On October 2, 2012 the Village awarded a contract to Christopher B. Burke Engineering, Ltd. (CBBEL) to complete detailed plans and specifications suitable for permits and obtaining construction bids for drainage improvements in the Greenwood Avenue/Forest Glen Study Area of northwest Winnetka. The Greenwood and Forest Glen study area is approximately a 170 acre drainage area north of Tower Road roughly bounded by Gordon Terrance on the east and the Skokie River Diversion Ditch on the west. All of the stormwater runoff in this area drains to the Skokie River Diversion Ditch through a trunk sewer heading west under Tower Road. The contract awarded by the Village included a provision for a public review by interested citizens and the Village Council before proceeding to final design. Engineering is approximately 90% complete and input is being sought at this time before finalizing the engineering and bidding documents. The existing drainage system and the proposed improvements are described in the Agenda Report.

The estimated project cost is \$4,266,924, and is proposed to be bid in fall 2013, with construction in 2014.

Recommendation / Suggested Action:

1. Review preliminary plans and provide comments.
2. Provide policy direction – should the cost of constructing the private property laterals be paid by the Village, or should the cost be paid for by adjacent homeowners?

Attachments:

1. Agenda Report
2. Letter to Affected Residents
3. Conceptual Plan
4. Preliminary Detailed Plan Sheets

Agenda Report

Subject: **Proposed Northwest Winnetka Stormwater Improvements**

Prepared By: Steven M. Saunders, Director of Public Works/Village Engineer

Date: June 26, 2013

On October 2, 2012 the Village awarded a contract to Christopher B. Burke Engineering, Ltd. (CBBEL) to complete detailed plans and specifications suitable for permits and obtaining construction bids for drainage improvements in the Greenwood Avenue/Forest Glen Study Area of northwest Winnetka. The Greenwood and Forest Glen study area is approximately a 170 acre drainage area north of Tower Road roughly bounded by Gordon Terrace on the east and the Skokie River Diversion Ditch on the west. All of the stormwater runoff in this area drains to the Skokie River Diversion Ditch through a trunk sewer heading west under Tower Road. The contract awarded by the Village included a provision for a public review by interested citizens and the Village Council before proceeding to final design. Engineering is approximately 90% complete and input is being sought at this time before finalizing the engineering and bidding documents. The specific improvements involved are as follows:

Existing Storm Sewer System. The existing storm sewer under Tower Road begins as a 24-inch pipe at Forest Glen Drive and increases to a 60-inch pipe heading west to Grove Street. This storm sewer collects runoff from the Vernon, Edgewood, Greenwood and Grove areas along the way. West of Pine Tree Lane, the 60-inch trunk sewer is reduced to two 36-inch storm sewers at a junction chamber where one continues west and outlets at the Diversion Ditch and the other directs water south to outlet at the pond on the south side of Tower Road and east of Forest Way Drive. During large storm events, as the water rises in the Diversion Ditch, the 36-inch outlet to the Diversion Ditch cannot drain by gravity and the pond provides relief via the other 36-inch outlet. A pump station is located at this junction chamber to pump storm water into the Diversion Ditch when the water surface elevation in the Diversion Ditch is too high for gravity runoff.

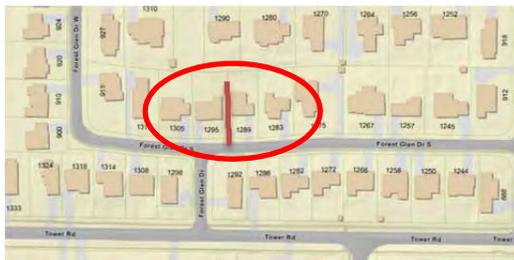
The CBBEL analysis shows that less than half of the volume within the pond is used during the 100-year design, such as the July 2011 storm events. This was confirmed by CBBEL and Public Works staff during the April 2013 storm event. This is because the pond outflows to the Diversion Ditch through a flap gate (backflow preventer) that doesn't allow water to enter, or backup into the pond when the Diversion Ditch is high. Therefore during large storm events, the storage in the pond remains available even though the water in the Diversion Ditch is high.

Proposed Improvements. The proposed improvement for this area includes an additional trunk sewer along Tower Road, multiple lateral sewers draining Forest Glen, Vernon, Edgewood, Greenwood and Grove areas, and a larger outlet pipe to the pond. The larger storm sewer network will bring runoff to the pond where the flood storage volume within

the pond will be utilized. The outlet from the pond to the Diversion Ditch will continue through a flap gate and the new larger outlet pipe to the pond will be equipped with a backflow prevention measure. This will provide two methods of backflow prevention to stop water from the pond or the Diversion Ditch from backing up into the system. The pump station and outlet pipe (with backflow prevention) to the Diversion Ditch will remain. From the CBBEL analysis of the proposed improvements, stormwater runoff will flow west more efficiently and water from outside the area will not be able to backflow into the area.

Private Property Considerations. One somewhat unique aspect of this proposed project is that some of the lower, most flood susceptible areas are located on private property, in rear yards. These areas are subject to large volumes of overland flow generated from upstream properties and upstream portions of the drainage basin. The proposed improvements include side yard storm sewers within proposed Village easements to address associated risks of structure flooding. Past Village policy has been that side and rear yard sewers are privately funded and owned. However the grading conditions of the proposed improvement area often result in overland flow conditions that result in large accumulations of regional stormwater accumulating in private yards. In some cases, the resulting flood depths can lead to damage or inundation risk to structures, requiring drainage laterals on private property to address area wide flooding problems. Laterals are proposed in three locations:

1289/1295 Forest Glen Drive South



905/913 Greenwood Avenue
1487/1495 Tower & 902 Greenwood



The Village has, in the past, permitted construction of such private property drainage systems, but has not expended Village funds on construction. In the case of these improvements, construction of private laterals was determined to be the only effective means of flood protection, because safe or effective overland flow routes are not available. The cost associated with constructing these private laterals is approximately \$110,000, or \$30,000 to \$50,000 per location, and is included in the total estimated project cost. It should be noted that the proposed laterals have been designed to protect against the 100-year flood, therefore they are significantly larger than what would typically be constructed by a homeowner to solve a private drainage problem.

Staff is recommending that in this case, the proposed laterals be included in the project at Village expense, for the following reasons:

1. They are an integral part of an overall Village project, and are necessary to achieve the project goal of reducing the risk of structure flooding;
2. They are intended to reduce the risk of structure flooding in large storms, and are not simply intended to reduce nuisance rear yard flooding;
3. There is not a safe and effective alternative in the form of an overland flow route to otherwise achieve the project objectives.

Policy direction is required to determine whether these laterals should be included in the project and funded by the Village, or whether these laterals should be funded by the adjacent homeowners.

Landscaping Berms. The proposed improvements within the Forest Glen subdivision include berms within the right-of-way and adjacent to the roadway. The purpose of the berms is to redirect overland flow away from the private property and toward the storm sewer system within the pavement. The berms will generally be modest in height (4 to 6 inches) and will be planted with landscape materials approved by the Village Forester, in consultation with the adjacent residents.

Traffic Patterns. The proposed detour plan uses Hibbard Road, Willow Road and Forestway Drive as a bypass for non-local traffic. Traffic on Tower Road will be limited to local traffic only as there will be daily road closures and no thru traffic will be permitted. Once the contract is awarded, the contractor will be required to submit a detailed schedule. Residents of the area will be notified of the schedule and the best means to access their properties. Emergency access will be maintained at all times, and the project team will work with the schools regarding routing of bus traffic.

Required Permits. The project requires several permits from other agencies. First and foremost, the project requires permission from the Cook County Forest Preserve District for construction of a new outlet from Tower Road to the pond. The project has been submitted to the District for review, but permission has not yet been obtained. The project also requires a wetland construction permit from the United States Army Corps of Engineers. This permit has been received. Finally, a water supply permit from the Illinois Environmental Protection Agency is needed, due to the several water main relocations that are required in order to construct the storm sewer. This permit is expected to be received in the next 30 to 60 days.

Cost Estimate. The estimated project cost is \$4,266,924, detailed as follows:

| | |
|-------------------------------------|--------------------|
| Engineering | \$226,874 |
| Construction | \$3,187,130 |
| Construction Engineering/Management | \$215,494 |
| Construction Contingency | \$637,426 |
| Total | \$4,266,924 |

Schedule. Staff proposes to complete the engineering and bidding documents so that the project can be bid in fall 2013. Construction is proposed to start during March 2014 and should be complete by the fall of 2014.

Recommendation:

1. Review preliminary plans and provide comments.
2. Provide policy direction – should the cost of constructing the private property laterals be paid by the Village, or should the cost be paid for by adjacent homeowners?

Attachments:

1. Letter to Affected Residents
2. Conceptual Plan
3. Preliminary Detailed Plan Sheets

ATTACHMENT #1
LETTER TO AFFECTED RESIDENTS



VILLAGE OF WINNETKA

Incorporated in 1869

Office of the Public Works Director

(847) 716-3534

e-mail: ssaunders@winnetka.org

June 21, 2013

Dear Resident:

As you may be aware, the Village of Winnetka is evaluating and developing stormwater drainage improvements to reduce the risk of flooding in various areas of Winnetka. One area for which improvements have been identified is an area of northwest Winnetka along and north of Tower Road west of Hibbard Road, known as the Greenwood and Forest Glen Study Area. The Greenwood and Forest Glen study area is approximately a 170 acre drainage area north of Tower Road roughly bounded by Gordon Terrace on the east and the Skokie River Diversion Ditch on the west. All of the stormwater runoff in this area drains to the Skokie River Diversion Ditch through a trunk sewer heading west under Tower Road. The Village has engaged the services of Christopher B. Burke Engineering, Ltd. of Rosemont, IL (CBBEL) to complete construction plans and specifications so that necessary permits and construction bids can be obtained, with an eye towards construction in the spring of 2014.

Existing Storm Sewer System. The existing storm sewer under Tower Road begins as a 24-inch pipe at Forest Glen Drive and increases to a 60-inch pipe heading west to Grove Street. This storm sewer collects runoff from the Vernon, Edgewood, Greenwood and Grove areas along the way. West of Pine Tree Lane, the 60-inch trunk sewer is reduced to two 36-inch storm sewers at a junction chamber where one continues west and outlets at the Diversion Ditch and the other directs water south to outlet at the pond on the south side of Tower Road and east of Forest Way Drive. During large storm events, as the water rises in the Diversion Ditch, the 36-inch outlet to the Diversion Ditch cannot drain by gravity and the pond provides relief via the other 36-inch outlet. A pump station is located at this junction chamber to pump storm water into the Diversion Ditch when the water surface elevation in the Diversion Ditch is too high for gravity runoff.

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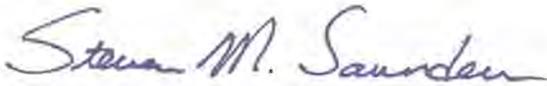
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CBBEL has completed preliminary engineering plans, and the Village is seeking public input on the project prior to completing plans and seeking construction bids and permits. As a property owner in the area that will be affected by the project, your input is being sought. You are invited to attend the Village Council's July 2 meeting to discuss the proposed project. The meeting is being held:

Tuesday, July 2, 2013
7:00 PM
Winnetka Village Hall – Council Chambers
510 Green Bay Road
Winnetka, Illinois

If you are unable to attend this meeting, you are welcome to provide your comments by e-mail to stormwatercomments@winnetka.org. I look forward to hearing from you, and to a project that will hopefully provide needed drainage relief to your neighborhood. Please feel free to contact me at (847) 716-3534, if you have any questions.

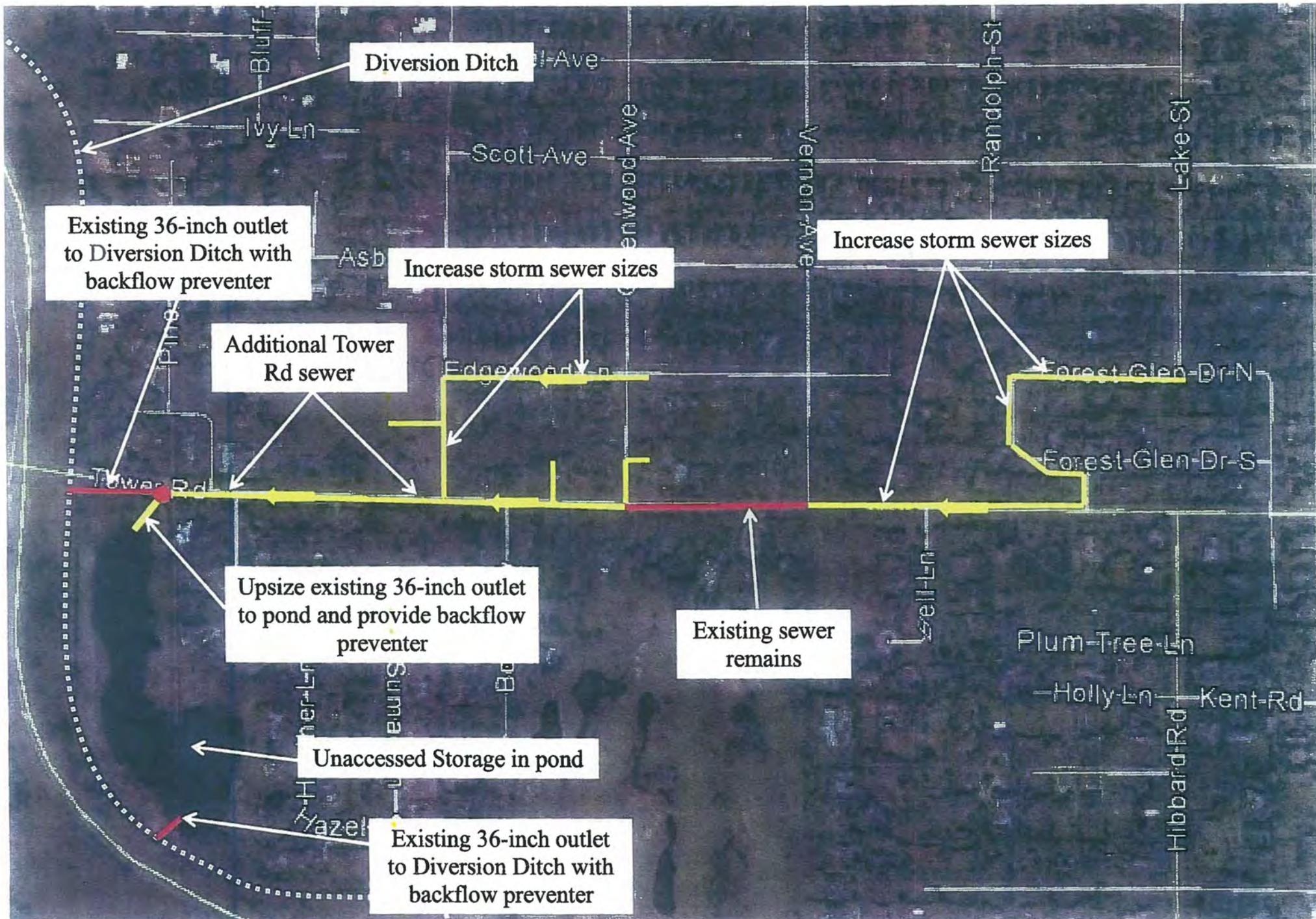
Sincerely,



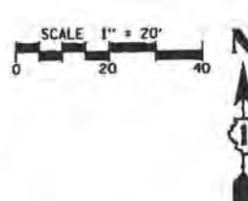
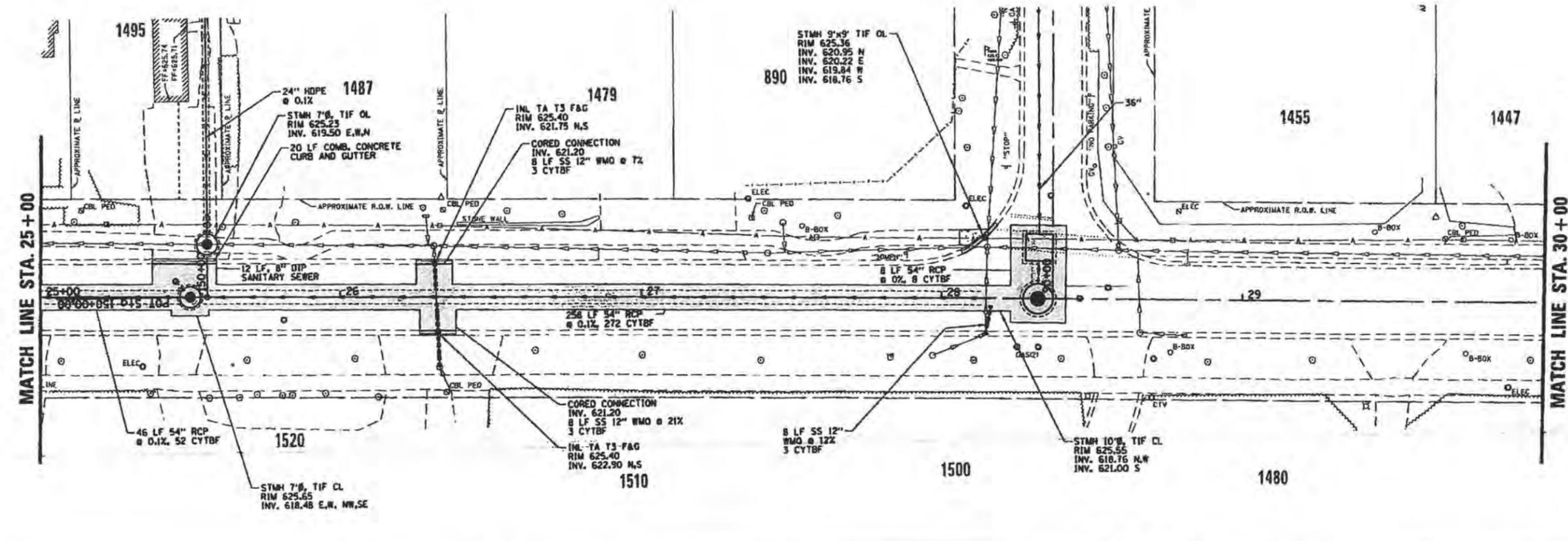
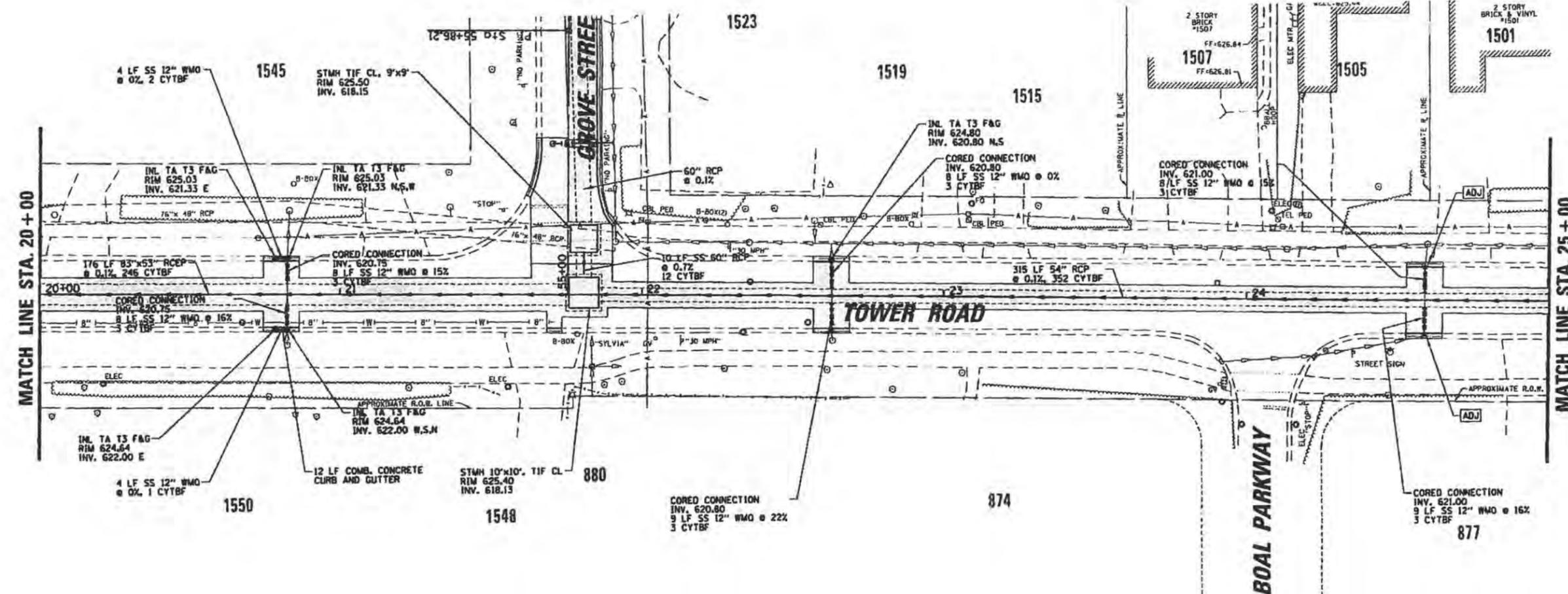
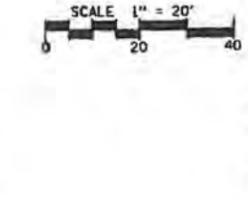
Steven M. Saunders
Director of Public Works/Village Engineer

Cc: Robert Bahan, Village Manager
James Johnson, Stormwater Program Manager
Thomas Burke, Christopher Burke Engineering

**ATTACHMENT #2
CONCEPTUAL PLAN**



ATTACHMENT #3
PRELIMINARY DETAILED PLAN SHEETS



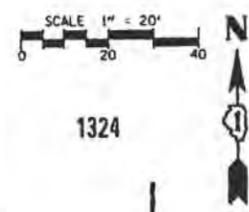
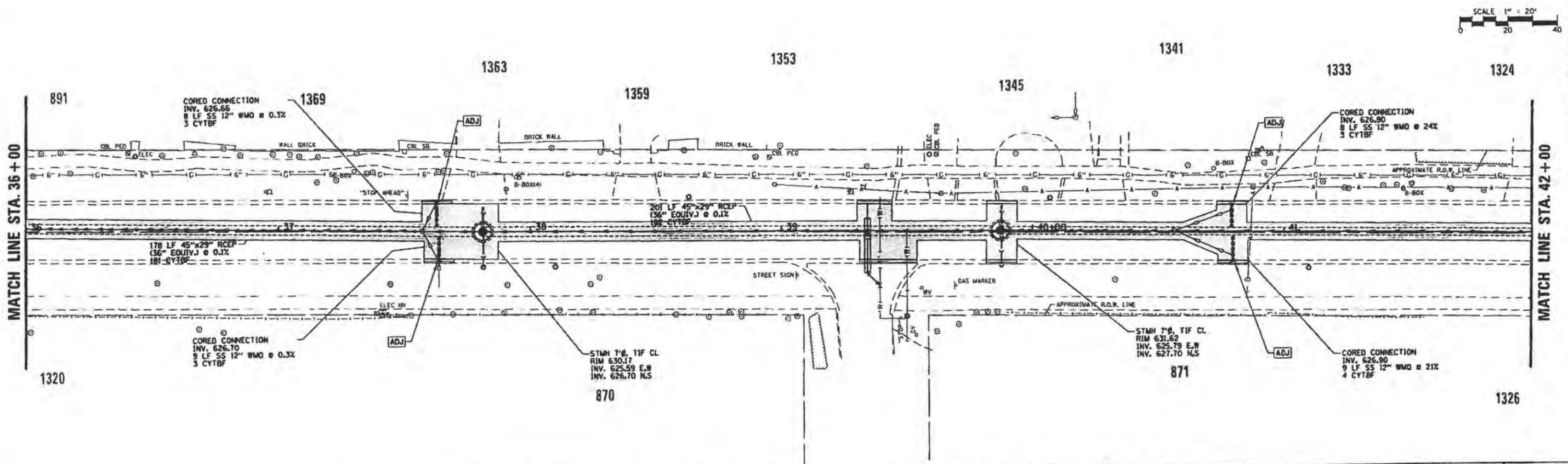
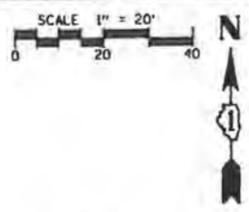
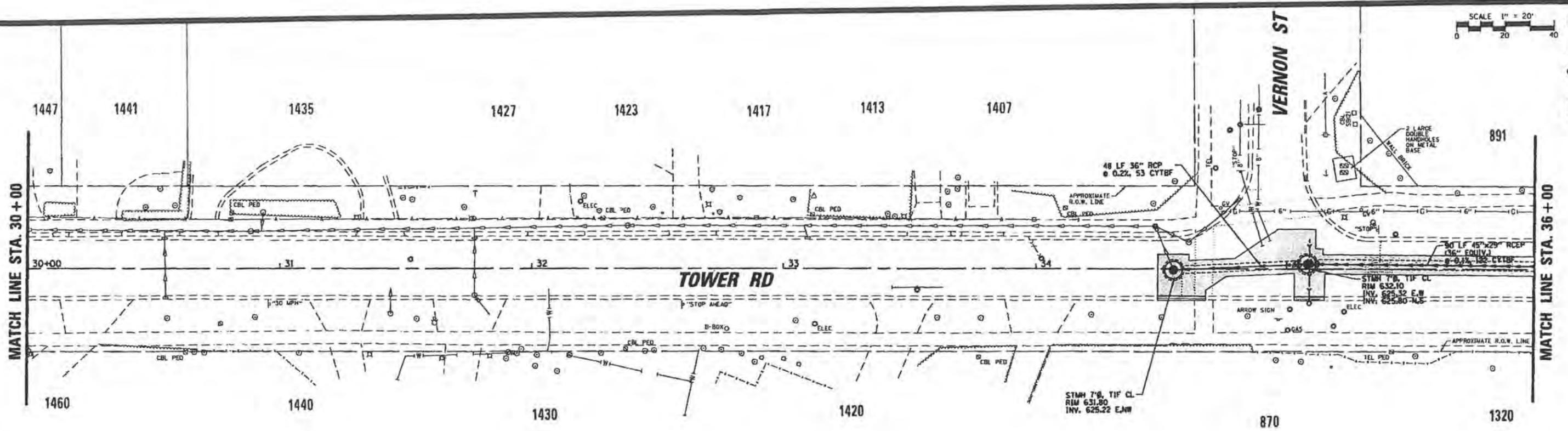
CHRISTOPHER B. BURKE ENGINEERING, LTD.
 9575 W. Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (847) 823-0500



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DESIGN: LMF
 DRAWN: EDT
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 SCALE: 1" = 40'
 PLOT DATE: 6/20/2013
 CAD USER: fproctor
 TITLE: STORM SEWER PLAN
 TOWER ROAD

PROJ. NO. 120462
 DATE: 03/04/2013
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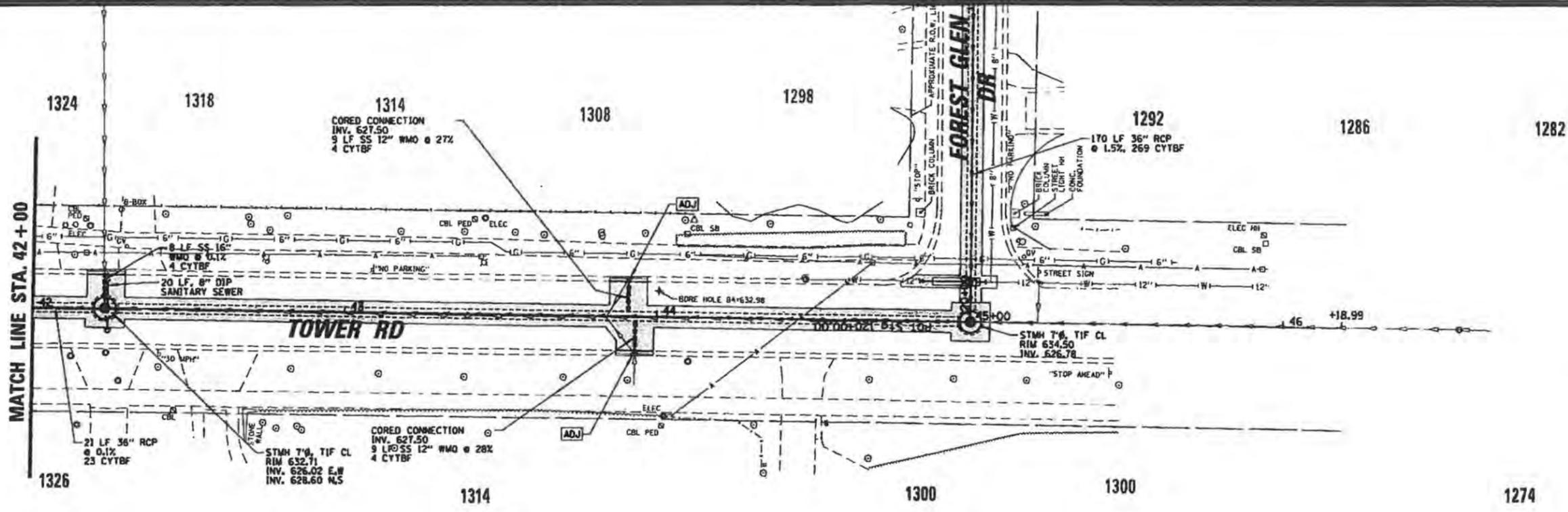
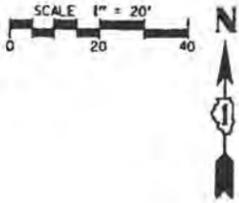


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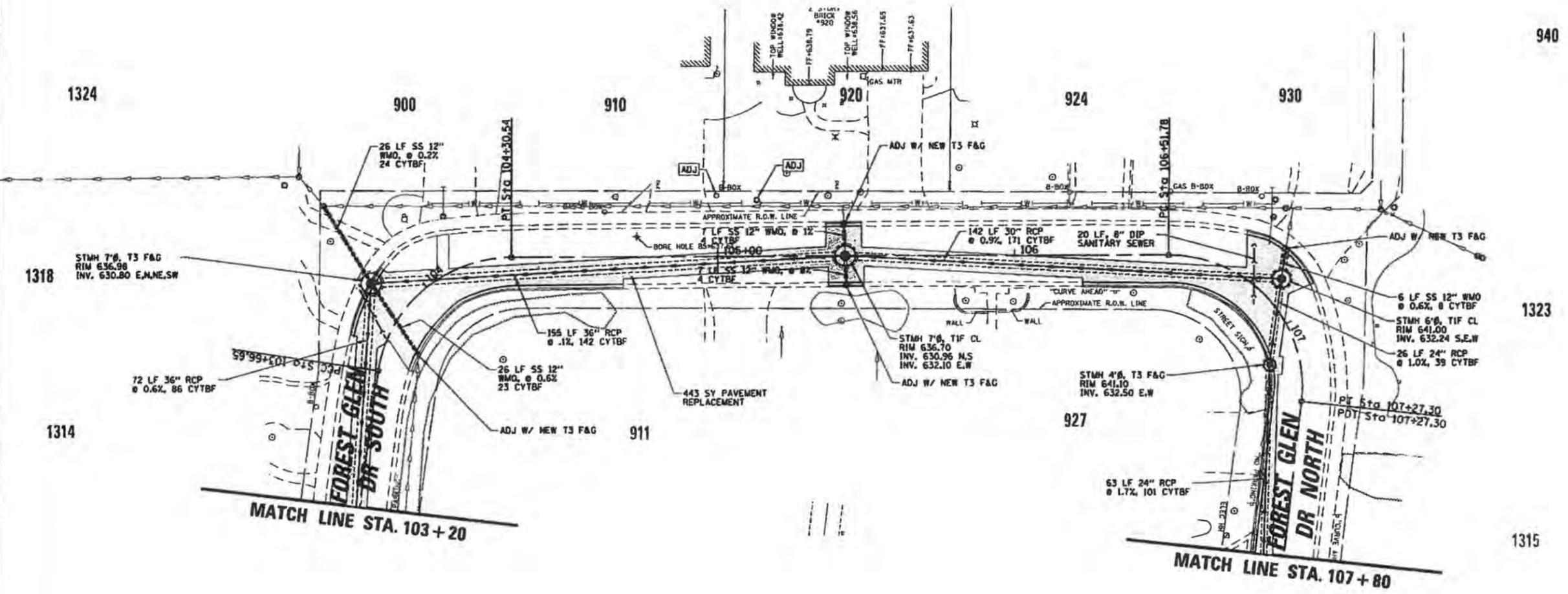
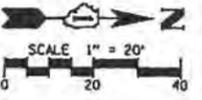


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| PLOT DATE | 6/20/2013 | |



CHRISTOPHER B. BURKE ENGINEERING, LTD.
 9575 W. Higgins Road, Suite 600
 Rosemont, Illinois 60018
 (847) 823-0500



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TITLE: **STORM SEWER PLAN
 FOREST GLEN DRIVE SOUTH/
 FOREST GLEN DRIVE NORTH**

PROJ. NO. 120462
 DATE: 03/04/2013
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 DRAWING NO. 9