LOCATION DRAINAGE STUDY

PROJECT ROUTE: Illinois 43 (Harlem Avenue)
LIMITS: at 95th Street Interchange
COUNTY: Cook
JOB NUMBER: P-91-138-99

PREPARED BY: District One
Bureau of Programming
Hydraulics Section

DATE: Rev. March 25, 2002

October 1998 Version

Illinois Department of Transportation

Memorandum

To:	John Kos	Attn: Patrick Pechnick
From:	Ralph E. Anderson	By: Todd E. Ahrens
Subject:	Hydraulic Report	
Date:	July 10, 2002	

IL43 (Harlem Avenue) at 95th Street
Cook County

P-91-138-99
S.N. 016-PS25

Pump Station #25

Reply is made to your memorandum of April 5, 2002, in which you submitted the Hydraulic Report for the above location. We have also received from your office a copy of review comments made by the Bureau of Electrical Operations, which are dated May 28.

We concur with the consultant's assessment of existing conditions. PS25 conveys considerable off-site drainage. Overflow from the Village of Bridgeview's detention basin northwest of the station constitutes a great percentage of the design inflow to PS25. The report documents that the basin's watershed is roughly 250 acres of what is considered to be off-site drainage. It also notes that flow through the basin's 15-inch pipe outflow restrictor bypasses PS25, while spillway overtopping moves southeast to the PS25 collection system. The special provisions of the 1994 permit for the basin issued by the Metropolitan Water Reclamation District of Greater Chicago specify a 24-inch outlet pipe. The smaller, 15-inch pipe contributes to higher stages in the basin that lead to larger and more frequent overtopping flows that are pumped out by our station.

We also concur with the consultant's preferred Alternate #1. It recommends constructing a berm around the basin to raise the spillway and restoring the outflow pipe to its as-permitted 24-inch diameter. TR-20 analysis supports the conclusion that modifying the detention basin in this manner will reduce the peak design inflow to roughly 50 cfs. This alternate also includes a recommendation to reduce total pumping capacity to levels consistent with reduced inflows. Alternate 1 is the most economical option available to us and probably the "cleanest" solution regarding off-site flow. We feel that coordinating this with the Village of Bridgeview is a worthwhile effort.

BEO wants to retain existing pumping capacity; a position that we agree with. The additional pumping capacity in excess of peak inflow will provide a safeguard against potential increased runoff from the interchange improvement. More importantly, in the event that the detention basin is not modified as desired in Alternate #1, or if the basin does not operate as intended for whatever reason, the additional pumping capacity will be critical. BEO also stated that they will coordinate the on-off cycling of the pumps.

Alternate #1 also includes two small detention basins within proposed interchange infields. BEO notes the 4-inch restrictor outlet proposed for each infield can be enlarged if the current pumps are retained. If that is the case and off-site detention flow is also mitigated as proposed in Alternate #1, detention in these small infield basins will not be needed.

There are several minor improvements proposed that are attached to all pump station alternates. They include sewer laterals, inlet relocation, and ditch grading to address identified problems. These recommendations are well documented and also have our concurrence.

MO'C/dla038

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1-00 EXISTING DRAINAGE SYSTEM (see Exhibit 1-00a, General Location Drainage Map; ☒ Exhibit 1-00b, Existing Drainage Plan)

1-01 IDENTIFIED DRAINAGE PROBLEMS (see Appendix C)

☒ Yes ☐ No

1-01.1 Description:

Flooding problems identified in the intersection, due to pump station failure.

Responsibility ☒ IDOT ☐ Others

Action

Pumps will be replaced and station upgraded as part of this project.

☒ Incorporate into the Study as data base
(See Section 1-03.1)

☐ Refer to others
- ☐ Bureau of Maintenance
- ☐ Local Agency

1-01.2 Description:

Village of Oak Lawn reported flooding in residential backyards south of Ramp G in the southeast quadrant of the interchange during the August 2, 2001 storm event, due to apparent runoff from Ramp G flowing into the backyards. This storm event

produced approximately 3.5 inches of rain within one hour, which is greater than a 100-year storm event.

Responsibility ☒ IDOT ☐ Others

Action

The drainage system of the interchange is not designed to accommodate a storm event greater than a 100-year storm. However, a field survey of the area was performed. A ditch exists at the toe of the slope from Ramp G, to convey runoff to the storm sewer system. However, this ditch has filled with debris and silt, and no longer has a positive slope towards the storm sewer system. It appears that regrading the ditch at a constant slope from the inlet to the upstream end would create a positive 0.7% slope on the ditch. Additionally, widening the ditch to 9' wide at the bottom and creating 3:1 side slopes for a one-foot depth would create sufficient capacity to convey runoff from the 100-year storm to the inlet.

☒ Incorporate into the Study as data base
(See Section 1-03.1)

☐ Refer to others
- ☐ Bureau of Maintenance
- ☐ Local Agency

1-01.3 Description:

The Village of Chicago Ridge reported flooding problems at the intersection of Harlem Avenue and the eastern frontage road, near 98th Street. The drainage problems appear to be the result of runoff from Harlem Avenue. A catch basin located on Harlem Avenue just north of the eastern frontage road is located within the roadway pavement, outside of the curbline. Runoff flows from the 95th Street overpass down Harlem Avenue along the curbline, and bypasses the catch basin located outside of the curbline. Runoff follows the curbline as it wraps to the east at the frontage road. The curbline ends prior to the intersection of the frontage road and 98th Street, and runoff flows off the roadway across the shoulder and into a grassed depressional area between Harlem Avenue and the Harlem Avenue frontage road. Inlets/catch basins located in those depressional areas may also clog.

Responsibility: ☒ IDOT ☐ Others

Action:

Relocating the catch basin on Harlem Avenue from the roadway to the curbline to capture Harlem Avenue runoff should reduce drainage problems in the area. Additionally, inlets and storm sewers in the depressional areas should be inspected, and any debris accumulation should be removed to facilitate drainage of those areas. The total flow to the catch basin from Harlem Avenue is 1.2 cfs in the 50-year storm event. An inlet capacity analysis shows that the inlets located upstream of the catch basin appear to have sufficient capacity to handle runoff without bypassing flow.

☒ Incorporate into the Study as data base
(See Section 1-03.1)

☐ Refer to others
- ☐ Bureau of Maintenance
- ☐ Local Agency

1-02 IDENTIFIED BASE FLOODPLAINS (see Exhibit 1-02a Flood Boundary and Floodway Map or Flood Insurance Rate Map and Section 3-00)

The Flood Boundary and Floodway Map for the Village of Palos Hills and/or the County of Cook were examined for identified base floodplains which were either traversed by or adjacent to Illinois Route 43 (Harlem Avenue) at 95th Street.

Floodplains	☒ YES	☐ NO
Floodways	☒ YES	☐ NO

Note: Floodplain and floodway is at Stony Creek, approximately 7,100 feet downstream of the IL Route 43 – 95th Street interchange. The storm sewers which drain the interchange discharge to Stony Creek, but no improvements are proposed at or near Stony Creek.

1-03 MAJOR DRAINAGE FEATURES (see Exhibit 1-00a)

1-03.1 Pump Station

Location: Southwest Quadrant of Illinois Route 43 (Harlem Avenue) at 95th Street Interchange

Pump Station No.: 25

Hydraulic Report Prepared by Earth Tech in August, 2001

Waterway Information Table Available:

☐ Yes (Exhibit 1-03.1a)
☒ No

Narrative Summary:
The existing pump station is in relatively good condition and exceeds the current and anticipated capacity requirements for the interchange. However, the age of the existing equipment in the pump station, and the limited availability of repair and replacement parts for the equipment suggest that rehabilitation of the pump station is necessary for continued service.

2-00 PROPOSED DRAINAGE SYSTEM (☒ Exhibit 2-00a, Proposed Drainage Plan)

2-01 DESIGN CRITERIA (☒ Exhibit 2-01 - Typical Sections)

☐ Construction ☒ Reconstruction ☐ Rehabilitation

1. Proposed storm sewer conveyance systems will be designed for a 50 year storm frequency with a velocity between 900mm/sec (3 ft/sec) and 3000mm/sec (10 ft/sec).

   ☒ Yes ☐ No ☐ N/A

2. Proposed ditches will be designed for a 50 year storm frequency and desirable ditch grades will be no less than 0.5%.

   ☐ Yes ☐ No ☒ N/A

3. The crown grade of the roadway in a floodplain will be a minimum of 900mm (3 feet) above highwater (backwater) for the flood frequency for which the roadway is designed.

   ☐ Yes ☐ No ☒ N/A

4. The low chord of the superstructure (bridge) will be a minimum of 600mm (2 feet) above design highwater (natural) and will not be below the all time record highwater.

   ☐ Yes ☐ No ☒ N/A

5. The waterway openings of bridges and culverts will be designed for a (30, 50) year storm frequency.

☐ Yes ☐ No ☒ N/A

6. The vertical alignment for curbed pavements will have a minimum grade of 0.3% and a drainage maximum "K" value of 51 (167 English Unit).

☒ Yes ☐ No ☐ N/A

A drainage design exemption is not required at this stage based on the proposed scope of work. If the scope of work is changed during the P.S. & E. stage, the appropriate drainage design exemption approval, if any, will be processed through the Hydraulics Section by the District's Bureau of Design.

2-02 OUTLET EVALUATION

Unless otherwise noted below, the various outlets within the limits of the subject improvement were determined to be suitable for continued use under proposed conditions without modifications or the provision of stormwater detention.

Unsuitable outlets: ☐ Yes ☒ No

Sensitive outlets: ☒ Yes ☐ No

Location: Outfall at Stony Creek.

Source: Storm Sewer from Illinois Route 43 & 95th Street Interchange.

Evaluation: Stony Creek is sensitive due to downstream communities which have flooding problems. The peak flow into Stony Creek should not be increased. During the 50-year storm event, the discharge into Stony Creek decreases from 263.69 (existing) to 234.8 cfs (proposed.) Note that the flow rate from the pump station is 80.1 cfs in the existing condition and 53.5 cfs in the proposed condition (Alternatives 1, 2, 3a and 3b) for the 50-year storm event. In the 100-year event, the existing flow rate is 80.1 cfs and the proposed flow rate from the pump station is 53.5 cfs, 71.2 cfs and 80.1 cfs for Alternatives 1 and 2, Alternative 3a, and Alternative 3b, respectively.

Recommendation: Outlet suitable for continued use.

2-03 STORM WATER DETENTION ANALYSIS

This project has been reviewed in accordance with Drainage Manual, Section 1-303.035 "Storm Water Storage".

2-03.1 Evaluation

☒ Storm water detention required

Sensitive outlets (see Section 2-02)

Location:

The Harlem Avenue storm sewer discharges to Stony Creek at Harlem Avenue, 7080' south of the interchange. The outlet is sensitive but is suitable for continued use; however, the flow rate to Stony Creek must not increase in the proposed condition. Due to overtopping of the Central Detention Pond in the 50- and 100-year storm events (existing,) detention is required to control the overflow from the Central Detention Pond, prevent flooding in the interchange, and prevent an increase in discharge to Stony Creek. Several alternatives are available for providing the required detention. These are summarized in section 2-03.2 and described in greater detail in Section 2-05.

The storm sewer analysis shows that during the critical duration 50-year storm, the existing peak flow into the creek is 263.69 cfs, and the proposed peak flow into the creek is 234.8 cfs. As the outlet is suitable for continued use, no detention is required for Stony Creek.

2-.03.2 Recommendation – Alternative 1

Detention Ponds ☒ Yes ☐ No

For Outlet at Westbound 95th Street Station 605+81, 179' Lt.

70,052 Cubic meters (91,621 Cu. Yds.) for a 100 year storm frequency. (The existing Central Detention Pond provides 54,289 cubic meters (71,002 cu. yds.) of storage. This alternative includes raising the overtopping berm to provide 15,765 cubic meters (20,619 cubic yards) of additional storage in the existing pond. See Section 2-05 for additional information.)

Pond Location: The Central Detention Pond is located east of I-294, north of 95th Street, and south of the railroad.

For Outlet at Westbound 95th Street Station 616+03, 86' Lt.

555 Cubic meters (726 Cu. Yds.) for a 100 year storm frequency. See Section 2-05 for additional information.

Pond Location: Northwest quadrant of interchange.

For Outlet at Eastbound 95th Street Station 705+65, 57' Rt.

740 Cubic meters (968 Cu. Yds.) for a 100 year storm frequency. See Section 2-05 for additional information.

Pond Location: Southwest quadrant of interchange.

Storage Pipes ☐ Yes ☒ No

Oversizing storm sewers/ditches ☐ Yes ☒ No

Control structure schematics (see Exhibit 2-03.2a)

☒ Yes ☐ No

4" non-clogging restrictor at inlet "W" (eastbound 95th Street Station 705+65, 57' Rt.)

4" non-clogging restrictor at inlet "D" (westbound 95th Street Station 616+03, 86' Lt)

Replace 15" outlet with 24" outlet at Central Detention Pond (westbound 95th Street Station 605+81, 179' Lt.)

Detailed evaluation and supporting calculations are included in Appendix D.

☒ Yes ☐ No

2-.03.2 Recommendation – Alternative 2

Detention Ponds ☒ Yes ☐ No

For Outlet at Westbound 95th Street Station 605+81, 179' Lt.

70,052 Cubic meters (91,621 Cu. Yds.) for a 100 year storm frequency. (The existing Central Detention Pond provides 54,289 cubic meters (71,002 cu. yds.) of storage. This alternative includes raising the overtopping berm to provide

15,765 cubic meters (20,619 cubic yards) of additional storage in the existing pond. See Section 2-05 for additional information.)

Pond Location: The Central Detention Pond is located east of I-294, north of 95th Street, and south of the railroad.

For Outlet at Westbound 95th Street Station 616+03, 86' Lt.

22,203 Cubic meters (29,040 Cu. Yds.) for a 100 year storm frequency. See Section 2-05 for additional information.

Pond Location: Northwest quadrant of interchange

For Outlet at Eastbound 95th Street Station 705+65, 57' Rt.

740 Cubic meters (968 Cu. Yds.) for a 100 year storm frequency. See Section 2-05 for additional information.

Pond Location: Southwest quadrant of interchange.

Storage Pipes ☐ Yes ☒ No

Oversizing storm sewers/ditches ☐ Yes ☒ No

Control structure schematics (see Exhibit 2-03.2a)

☒ Yes ☐ No

4" non-clogging restrictor at inlet "W" (eastbound 95th Street Station 705+65, 57' Rt.)

Existing 15" outlet at inlet "D" (westbound 95th Street Station 616+03, 86' Lt).

Detailed evaluation and supporting calculations are included in Appendix D.

☒ Yes ☐ No

2-.03.2 Recommendation – Alternative 3a

Detention Ponds ☒ Yes ☐ No

For Outlet at Westbound 95th Street Station 605+81, 179' Lt.

78,341 Cubic meters (102,463 Cu. Yds.) for a 100 year storm frequency. (The existing Central Detention Pond provides 54,289 cubic meters (71,002 cu. yds.) of storage. This alternative includes raising the overtopping berm to provide 24,054 cubic meters (31,460 cubic yards) of additional storage in the existing pond. See Section 2-05 for additional information.)

Pond Location: The Central Detention Pond is located east of I-294, north of 95th Street, and south of the railroad.

For Outlet at Westbound 95th Street Station 616+03, 86' Lt.

5921 Cubic meters (7,744 Cu. Yds.) for a 100 year storm frequency. See Section 2-05 for additional information.

Pond Location: Northwest quadrant of interchange

For Outlet at Eastbound 95th Street Station 705+65, 57' Rt.

740 Cubic meters (968 Cu. Yds.) for a 100 year storm frequency. See Section 2-05 for additional information.

Pond Location: Southwest quadrant of interchange.

Storage Pipes ☐ Yes ☒ No

Oversizing storm sewers/ditches ☐ Yes ☒ No

Control structure schematics (see Exhibit 2-03.2a)

☒ Yes ☐ No

4" non-clogging restrictor at inlet "W" (eastbound 95th Street Station 705+65, 57' Rt.)

36" outlet at inlet "D" (westbound 95th Street Station 616+03, 86' Lt).

Detailed evaluation and supporting calculations are included in Appendix D.

☒ Yes ☐ No

2-.03.2 Recommendation – Alternative 3b

Detention Ponds ☒ Yes ☐ No

For Outlet at Westbound 95th Street Station 605+81, 179' Lt.

78,341 Cubic meters (102,463 Cu. Yds.) for a 100 year storm frequency. (The existing Central Detention Pond provides 54,289 cubic meters (71,002 cu. yds.) of storage. This alternative includes raising the overtopping berm to provide 24,054 cubic meters (31,460 cubic yards) of additional storage in the existing pond. See Section 2-05 for additional information.)

Pond Location: The Central Detention Pond is located east of I-294, north of 95th Street, and south of the railroad.

For Outlet at Westbound 95th Street Station 616+03, 86' Lt.

555 Cubic meters (726 Cu. Yds.) for a 100 year storm frequency. See Section 2-05 for additional information.

Pond Location: Northwest quadrant of interchange

For Outlet at Eastbound 95th Street Station 705+65, 57' Rt.

740 Cubic meters (968 Cu. Yds.) for a 100 year storm frequency. See Section 2-05 for additional information.

Storage Pipes ☐ Yes ☒ No

Oversizing storm sewers/ditches ☒ Yes ☐ No

For Outlet at Westbound 95th Street Station 610+41, 50' Lt.

1826 Cubic meters (2,388 Cu. Yds.) for a 100 year storm frequency

Oversized Storm Sewer Location: North of 95th Street, east of the Central Detention Pond, and west of the Railroad, to collect overflow from the Central Detention Pond.

Control structure schematics (see Exhibit 2-03.2a)

☒ Yes ☐ No

4" non-clogging restrictor at inlet "W" (eastbound 95th Street Station 705+65, 57' Rt.)

4" non-clogging restrictor at inlet "D" (westbound 95th Street Station 616+03, 86' Lt)

33" restrictor at inlet "A" (westbound 95th Street Station 610+41, 50' Lt.)

Detailed evaluation and supporting calculations are included in Appendix D.

☒ Yes ☐ No

2-04 RIGHT OF WAY ANALYSIS

☒ Yes ☐ No The right of way requirements have been coordinated with and accepted by the Project and Environmental Studies Section and Bureau of Design.

☒ Yes ☐ No Existing/Proposed right of way is sufficient to accommodate the proposed drainage system.

☐ Yes ☒ No Additional right of way is required to accommodate the proposed drainage system.

☐ Yes ☒ No A drainage easement is required to accommodate the proposed drainage system.

2-05 DRAINAGE ALTERNATIVES

Three drainage alternatives were analyzed to improve performance of the pump station and reduce flooding of the intersection during the 50- and 100-year storm. As described in the hydraulic report, the Central Detention Pond located east of the Tollway and north of 95th Street normally discharges to the south and away from the pump station service area. However, in most 50- and 100-year storm events, runoff overtops the Central Detention Pond and enters the pump station service area.

The existing pump station does not have sufficient capacity to handle the overflow from the Central Detention Pond. The wet well fills beyond the low pavement elevation of 587.5, water begins bubbling out of the inlets, and the interchange floods.

An analysis of the Central Detention Pond was conducted to determine whether modifications to the pond could prevent the pond from overtopping in all storm events. It was determined that the berm would need to be raised to elevation 615, approximately. Due to space constraints and upstream development, it is not possible to raise the berm of the pond beyond 612. Therefore, three alternatives were analyzed to reduce flooding of the interchange during the 50- and 100-year storm event. Alternatives 1 and 2 considered adding detention storage upstream of the pump station, and Alternatives 3a and 3b considered adding pumps in the pump station in addition to creating additional storage upstream.

Alternative 1: Storage and Restrictor Replacement (See Exhibit 2-04)

Detention storage can be provided upstream of the pump station to reduce the 100-year peak flows into the pump station. Reducing the peak inflow to the pump station will allow the three 8000 gpm pumps (designed for the 50-year storm event) to function during the 100-year storm event without flooding of the intersection.

This alternative includes constructing a berm to elevation 610.5 around the south and southwest edges of the Central Detention Pond, and replacing the 15" restrictor with the 24" restrictor as the pond was designed. The pond currently overtops at elevation 608.0. Raising the berm and increasing the outlet will prevent overtopping of the pond during the 50-year storm event and reduce overtopping during the 100-year storm event. (The TR-20 analysis shows the pond filling to a maximum elevation of 608.91 in the 50-year, 24-hour storm.)

This alternative also includes construction of two small detention storage basins within the interchange infields to reduce the peak flow from the interchange itself into the pump station. The peak flow from the interchange occurs during the 2-hour storm event; however, the peak volume of runoff occurs during the 24-hour storm event. Therefore, the small infield detention storage basins are designed to store runoff from the 24-hour, 100-year event, which will reduce the peak flow to the pump station for all storm events.

One small pond is to be located adjacent to inlet "D" (westbound 95th Station 616+03, 86' Lt.) in the northwest quadrant of the site. The pond will capture runoff from drainage areas "D" and "F" and detain the runoff prior to discharge through the storm sewer system. The TR-20 analysis shows that a pond 0.65 acres in size and 1.7 feet deep will provide 0.45 acre-feet of storage, which is sufficient to detain the runoff from this area during all storm events. Sufficient area exists within the infield area to modify the shape of the pond, if a smaller and deeper pond is preferred. The analysis assumes a 4-inch orifice restricting flow into the storm sewer system at inlet "D" (westbound 95th Station 616+03, 86' Lt.)

The second small pond is to be located adjacent to inlet "W" (eastbound 95th Station 705+65, 57' Rt.) in the southwest quadrant of the site. The pond will capture runoff from drainage area "W" and detain the runoff prior to discharge through the storm sewer system. The TR-20 hydrologic analysis shows that a pond 0.45 acres in size and 2.0 feet deep will provide 0.6 acre-feet of storage, which is sufficient to detain the runoff from this area during all storm events. Sufficient area exists within the infield area to modify the shape of the pond, if a smaller and deeper pond is preferred. The analysis assumes a 4-inch orifice restricting flow into the system at inlet "W" (eastbound 95th Station 705+65, 57' Rt.)

Providing storage within the interchange, raising the berm around the Central Detention Pond, and increasing the size of the outlet from the Central Detention Pond results in a significant reduction in peak flow to the pump station. Flow from the interchange during the critical duration 100-year, 2-hour storm is reduced to 46.22 cfs. All three pumps operate during the 100-year storm, and peak elevation in the wet well is 580.30. At the storm sewer in the infield adjacent to the low point on 95th Street, the rim elevation is 585.30 and the hydraulic grade line is 582.50, providing 2.8 feet of freeboard below the rim elevation and 5.0 feet of freeboard below the pavement elevation. The pavement does not appear to flood during the 100-year storm for this alternative.

The engineer's estimated opinion of probable construction cost for this alternative is approximately $1,416,176 as shown in Hydraulic Report Exhibit 79, which includes $1,318,797 for the pump station itself (with three pumps plus one stand-by) and $97,379 for other improvements.

The stage-storage calculations can be found in Hydraulic Report Exhibits 44 and 45, and TR-20 hydrologic model can be found in Hydraulic Report Exhibit 46. The Hydra storm sewer model can be found in Hydraulic Report Exhibits 39 - 42. The pump flow diagrams and calculations for this alternative can be found in Hydraulic Report Exhibits 47-52.

Alternative 2: Storage at Central Detention Pond and Northwest Infield (See Exhibit 2-04)

Detention storage can be provided upstream of the pump station to reduce the 100-year peak flows into the pump station. Reducing the peak inflow to the pump station will allow the three 8000 gpm pumps (designed for the 50-year storm event) to function during the 100-year storm event without flooding of the intersection.

This alternative includes constructing a berm to elevation 611.0 around the south and southwest edges of the Central Detention Pond and constructing a new overflow spillway at elevation 610.5. This alternative also includes conveying the overflow from the Central Detention Pond to a new detention facility in the northwest infield. The Central Detention Pond currently overtops at elevation 608.0. Raising the berm at the Central Detention Pond will prevent overtopping of the pond during most 50-year storm events and reduce overtopping during the 100-year storm event.

The overflow from the Central Detention Pond in the 100-year storm events will be conveyed to a proposed 18 acre-foot detention storage facility in the northwest infield. A 42" storm sewer at 1.7% slope will collect the overflow from the Central Detention Pond and convey it approximately 1000 feet along the northern right-of-way of 95th Street, across the railroad, and discharge to the proposed Northwest Infield pond. The proposed Northwest Infield pond will require a 3.2 acre footprint, and will discharge through the existing 15-inch storm sewer at inlet "D" (westbound 95th Station 616+03, 86' Lt.) The existing storm sewer invert is at 582.25 and does not require modification. The existing sewer is small enough to sufficiently restrict the flow from the proposed pond. The pond is designed to store the runoff from the 100-year, 24 hour storm event. The high water level of the pond in the 100-year, 24-hour storm is 591.1. The overflow spillway crest will be at elevation 593.1 to provide 2 feet of freeboard on the pond, and the top of the berm will be at elevation 593.6.

This alternative also includes construction of a small detention storage basin within the southwest infield to reduce the peak flow from the interchange itself into the pump station. The peak flow from the interchange occurs during the 2-hour storm event; however, the peak volume of runoff occurs during the 24-hour storm event. Therefore, the small infield detention storage basins are designed to store runoff from the 24-hour, 100-year event, which will reduce the peak flow to the pump station for all storm events.

The small pond is to be located adjacent to inlet "W" (eastbound 95th Station 705+65, 57' Rt.) in the southwest quadrant of the site. The pond will capture runoff from drainage area "W" and detain the runoff prior to discharge through the storm sewer system. The TR-20 hydrologic analysis shows that a pond 0.45 acres in size and 2.0 feet deep will provide 0.6 acre-feet of storage, which is sufficient to detain the runoff from this area during all storm events. Sufficient area exists within the infield area to modify the shape of the pond, if a smaller and deeper pond is preferred. The analysis

assumes a 4-inch orifice restricting flow into the system at inlet "W" (eastbound 95th Station 705+65, 57' Rt.)

Providing storage within the northwest and southwest infield areas and raising the berm around the Central Detention Pond results in a significant reduction in peak flow to the pump station. Flow from the interchange during the critical duration 100-year, 2-hour storm is reduced to 47.13 cfs. All three pumps operate during the 100-year storm, and peak elevation in the wet well is 581.20. At the storm sewer in the infield adjacent to the low point on 95th Street, the rim elevation is 585.30 and the hydraulic grade line is 583.12, providing 2.2 feet of freeboard below the rim and 4.4 feet of freeboard below the pavement. The pavement does not appear to flood during the 100-year storm for this alternative.

The engineer's estimated opinion of probable construction cost for this alternative is approximately $1,889,102 as shown in Hydraulic Report Exhibit 79, which includes $1,318,797 for the pump station itself (with three pumps plus one stand-by) and $570,305 for other improvements. Note that this cost does not include the cost of crossing the railroad with the new conveyance pipe.

The stage-storage calculations can be found in Hydraulic Report Exhibits 44 and 45, and TR-20 hydrologic model can be found in Hydraulic Report Exhibit 53. The Hydra storm sewer model can be found in Hydraulic Report Exhibits 39 - 42. The pump flow diagrams and calculations for this alternative can be found in Hydraulic Report Exhibits 54-59.

Alternative 3: Storage and Pumps (See Exhibit 2-04)
The berm around the Central Detention Pond can be raised to a maximum elevation of 612. However, this is not sufficient to prevent the pond from overtopping during the 100-year storm events. Therefore, in addition to raising the berm to 612 at the Central Detention Pond, pumps were added to the pump station to prevent flooding of the intersection during the 100-year event. However, as previously discussed, the maximum pumping capacity is 80.1 cfs due to the sensitive outlet at Stony Creek downstream. Pumping at the maximum 80.1 cfs and raising the Central Detention Pond to 612 is not sufficient to prevent flooding. Therefore, this alternative looks at two sub-alternatives: Alternative 3a is similar to Alternative 2, and includes raising the Central Detention Pond to 612, providing a conveyance pipe to convey overflow from the Central Detention Pond to a proposed storage facility in the northwest infield, and adding a fourth pump to the pump station. Alternative 3b includes raising the Central Detention Pond to 612, providing storage in oversized pipes immediately downstream of the Central Detention Pond, and adding a fifth pump to the pump station.

Alternative 3a: Storage and Pumps, Storage at Northwest Infield (See Exhibit 2-04)
As shown in the TR-20 analyses, raising the Central Detention Pond berm to 612 will prevent overtopping of the Central Detention Pond during the 50-year storm events.

However, the 100-year storm still overtops. Alternative 3a includes conveying the overflow from the Central Detention Pond to a new detention facility in the northwest infield, adding a small detention facility in the southwest infield, and adding a fourth 8000 gpm pump at the pump station.

The overflow from the Central Detention Pond in the 100-year storm events will be conveyed to a proposed 4.8 acre-foot detention storage facility in the northwest infield. A 42" storm sewer at 1.7% slope will collect the overflow from the Central Detention Pond and convey it approximately 1000 feet along the northern right-of-way of 95th Street, across the railroad, and discharge to the proposed Northwest Infield pond. The proposed Northwest Infield pond will require a 2.5 acre footprint, and will discharge through a proposed 36-inch storm sewer at the same location and invert (582.25) as the existing inlet "D" (westbound 95th Station 616+03, 86' Lt.) The pond is designed to store the runoff from the 100-year, 24 hour storm event. The high water level of the pond in the 100-year, 24-hour storm is 586.18. The overflow spillway crest will be at elevation 588.5 to provide 2 feet of freeboard on the pond above the high water level, and the top of the berm will be at elevation 589.5.

This alternative also includes reconstruction of 270 feet of 36" and 42" pipe between the northwest infield and pump station, in order to convey the peak discharge from the northwest infield pond to the pump station during the 100-year storm event.

This alternative also includes construction of a small detention storage basin within the southwest infield to reduce the peak flow from the interchange itself into the pump station. The peak flow from the interchange occurs during the 2-hour storm event; however, the peak volume of runoff occurs during the 24-hour storm event. Therefore, the small infield detention storage basins are designed to store runoff from the 24-hour, 100-year event, which will reduce the peak flow to the pump station for all storm events.

The small pond is to be located adjacent to inlet "W" (eastbound 95th Station 705+65, 57' Rt.) in the southwest quadrant of the site. The pond will capture runoff from drainage area "W" and detain the runoff prior to discharge through the storm sewer system. The TR-20 hydrologic analysis shows that a pond 0.45 acres in size and 2.0 feet deep will provide 0.6 acre-feet of storage, which is sufficient to detain the runoff from this area during all storm events. Sufficient area exists within the infield area to modify the shape of the pond, if a smaller and deeper pond is preferred. The analysis assumes a 4-inch orifice restricting flow into the system at inlet "W" (eastbound 95th Station 705+65, 57' Rt.)

This alternative also includes addition of a fourth 8000 gpm pump, equal to the other three pumps, to convey runoff from the pump station during the 100-year storm event. The total pump station capacity in this alternative is 32,000 gpm or 71.2 cfs.

The critical duration storm for this alternative is the 100-year, 24-hour storm. All four pumps operate during the 100-year storm, and peak elevation in the wet well is 581.0. At the storm sewer in the infield adjacent to the low point on 95th Street, the rim elevation is 585.30, the low pavement elevation is 587.5 and the hydraulic grade line is 584.22. Approximately 1 foot of freeboard is provided below the rim and 3.3 feet of freeboard are provided below the low pavement elevation. The pavement does not appear to flood during the 100-year storm for this alternative.

The engineer's estimated opinion of probable construction cost for this alternative is approximately $2,407,973 as shown in Hydraulic Report Exhibit 79, which includes $1,840,529 for the pump station itself (with four pumps plus one stand-by) and $567,444 for other improvements. Note that this cost does not include any costs associated with crossing the railroad or other utilities with the new conveyance pipe. An additional annual cost is expected for operation and maintenance.

The stage-storage calculations can be found in Hydraulic Report Exhibits 44 and 45, and TR-20 hydrologic model can be found in Hydraulic Report Exhibit 60. The Hydra storm sewer model can be found in Hydraulic Report Exhibits 39 – 41 and 43. The pump flow diagrams and calculations for this alternative can be found in Hydraulic Report Exhibits 61-66.

Alternative 3b: Storage and Pumps, Storage in Oversized Pipes (See Exhibit 2-04)
As shown in the TR-20 analyses, raising the Central Detention Pond berm to 612 will prevent overtopping of the Central Detention Pond during the 50-year storm events. However, the 100-year storm still overtops. Alternative 3b includes providing additional storage immediately downstream of the Central Detention Pond's overtopping weir to further attenuate the peak discharge into the pump station.

This alternative includes construction of 1800' of 6'x6' reinforced concrete box culvert (or similar large-diameter pipe with equal storage volume) immediately downstream of the Central Detention Pond. Overflow from the Central Detention Pond will be conveyed into the oversized storm sewers, which will be laid three-across for 600' of length (1800' total length.) Connections between the three box culverts will be provided to equalize hydraulics between the box culverts. The box culverts will discharge to the storm sewer system at the location of the existing inlet A (westbound 95th Street Station 610+41, 50' Lt.) A 36" restrictor will be placed prior to discharge into inlet A. The storm sewers from inlet A to the wet well will be upsized to provide sufficient capacity for the additional flow.

This alternative also includes addition of a fifth pump, to bring the total pump station capacity to 80.1 cfs, equal to the existing pump station capacity. The fifth pump will have a capacity equal to 4000 gpm, or 8.9 cfs, which is one-half the size of the first four pumps, so as not to exceed the existing pump station discharge rate.

This alternative also includes construction of two small detention storage basins within the interchange infields to reduce the peak flow from the interchange itself into the pump station. The peak flow from the interchange occurs during the 2-hour storm event; however, the peak volume of runoff occurs during the 24-hour storm event. Therefore, the small infield detention storage basins are designed to store runoff from the 24-hour, 100-year event, which will reduce the peak flow to the pump station for all storm events.

One small pond is to be located adjacent to inlet "D" (westbound 95th Station 616+03, 86' Lt.) in the northwest quadrant of the site. The pond will capture runoff from drainage areas "D" and "F" and detain the runoff prior to discharge through the storm sewer system. The TR-20 analysis shows that a pond 0.65 acres in size and 1.7 feet deep will provide 0.45 acre-feet of storage, which is sufficient to detain the runoff from this area during all storm events. Sufficient area exists within the infield area to modify the shape of the pond, if a smaller and deeper pond is preferred. The analysis assumes a 4-inch orifice restricting flow into the storm sewer system at inlet "D."

The second small pond is to be located adjacent to inlet "W" (eastbound 95th Station 705+65, 57' Rt.) in the southwest quadrant of the site. The pond will capture runoff from drainage area "W" and detain the runoff prior to discharge through the storm sewer system. The TR-20 hydrologic analysis shows that a pond 0.45 acres in size and 2.0 feet deep will provide 0.6 acre-feet of storage, which is sufficient to detain the runoff from this area during all storm events. Sufficient area exists within the infield area to modify the shape of the pond, if a smaller and deeper pond is preferred. The analysis assumes a 4-inch orifice restricting flow into the system at inlet "W."

The critical duration storm for this alternative is the 100-year, 24-hour storm. All five pumps operate during the 100-year storm, and peak elevation in the wet well is 581.8. At the storm sewer in the infield adjacent to the low point on 95th Street, the rim elevation is 585.30, the adjacent low pavement elevation is 587.5 and the hydraulic grade line is 585.54. Water bubbles from the inlet during the 100-year storm, but approximately 2 feet of freeboard is provided below the pavement elevation. The pavement does not appear to flood during the 100-year storm for this alternative.

The engineer's estimated opinion of probable construction cost for this alternative is approximately $3,420,841 as shown in Hydraulic Report Exhibit 79, which includes $2,375,385 for the pump station itself (with five pumps plus one stand-by) and $1,045,456 for other improvements. An additional annual cost is expected for operation and maintenance.

The stage-storage calculations can be found in Hydraulic Report Exhibits 44 and 45, and TR-20 hydrologic model can be found in Hydraulic Report Exhibit 60. The Hydra storm sewer model can be found in Hydraulic Report Exhibits 39 – 41 and 43. The pump flow diagrams and calculations for this alternative can be found in Hydraulic Report Exhibits 61-66.

Recommendation

Alternative 1 is the preferred alternative. This alternative will prevent overtopping of the pond during the 50-year storm event and minimize flooding during the 100-year storm, does not require a storm sewer to be constructed across the railroad, and does not require the annual operations or maintenance costs associated with adding a fourth or fifth pump to the pump station. Coordination with the Village of Bridgeview and a survey and analysis of the storm sewer system downstream of the Central Detention Pond is required prior to proceeding with this alternative.

2-06 LOCAL AND OTHER AGENCY COORDINATION (see Appendix C)

☐ Yes	☒ No	Local ordinances considered
☐ Yes	☒ No	Joint participation
☐ Yes	☒ No	Sewer separation
☐ Yes	☒ No	Jurisdictional transfer
☐ Yes	☒ No	Letter of intent required/processed/approved
☒ Yes	☐ No	Coordination completed and comments provided.

Comments:

A copy of the LDS will be forwarded to the Villages.

2-07 PROPOSED DRAINAGE PLAN

2-07.1 Roadway Drainage

☒ Yes ☐ No Utilize Existing Drainage System

Limits:

18" from DD (westbound 95th Street station 613+40, 166' Lt.) to B (westbound 95th Street Station 613+30, 57' Lt.)

18" from YY (westbound 95th Street Station 609+58, 46' Rt.) to Y (westbound 95th Street Station 611+51, 60' Rt.)

30" from A (westbound 95th Street Station 610+41, 50' Lt.) to Y (westbound 95th Street Station 611+51, 60' Rt.)

24" from Y (westbound 95th Street Station 611+51, 60' Rt) to 1424 (westbound 95th Street Station 614+22, 6' Rt.)

24" from EE (Harlem Avenue Station 325+74, 206' Lt.) to E (Harlem Avenue Station 324+00, 215' Lt.)

30" from UNK-1 (eastbound 95th Street 703+48, 24' Rt) to the wet well

48" from BB (westbound 95th Street Station 614+69, 61' Rt) to the wet well

54" from the pump station to X (Harlem Avenue Station 314+80, 194' Lt.)

60" from V (Harlem Avenue Station 314+10, 103' Rt.) to S (Harlem Avenue Station 313+45, 151' Rt.)

24" from N (westbound 95th Street Station 628+66, 158' Lt) to AA (westbound 95th Street Station 629+72, 93' Rt.)

30" from E (Harlem Avenue Station 324+00, 215' Lt) to CC (Harlem Avenue Station 321+09, 102' Rt.)

66" from UNK-2 (Harlem Avenue Station 321+08, 124' Rt) to S (Harlem Avenue Station 313+45, 151' Rt.)

Comments:

See Exhibit 30 in Appendix D for a correlation of drainage IDs listed in this document and the Station/Offset of those structures.

Note, the list shown above applies to Alternatives 1 and 2 only. In Alternative 3a, the storm sewer from UNK-1 to the wet well is replaced, and in Alternative 3b the storm sewer from A to Y and from Y to 1424 is replaced. See Exhibit 2-00b.

☒ Yes ☐ No Utilize existing storm sewers with minor extensions and/or adjustment of existing drainage structures

Limits for minor extensions due to roadway widening:

15" from W (eastbound 95th Street Station 705+65, 57' Rt) to 1483 (eastbound 95th Street Station 704+60, 24' Rt.)

15" from D (westbound 95th Street Station 616+03, 86' Lt) to UNK-1 (eastbound 95th Street Station 703+48, 24' Rt.)

18" from F (westbound 95th Street station 618+09, 74' Lt) to 1483 (eastbound 95th Street Station 704+60, 24' Rt.)

24" from M (westbound 95th Street Station 626+30, 25' Lt) to P (eastbound 95th Street Statin 713+73, 93' Rt.)

42" from 1424 (westbound 95th Street Station 614+22, 6' Rt) to BB (westbound 95th Street Station 614+69, 61' Rt.)

Limits for minor adjustment of drainage structures:

12" from C (Harlem Avenue Station 324+20, 344' Lt) to E (Harlem Avenue Station 324+00, 215' Rt.)

Comments:

Note, the above list applies only to Alternatives 1 and 2. In Alternative 3a, the storm sewer from D (westbound 95th Street Station 616+03, 86' Lt) to UNK-1 (eastbound 95th Street Station 703+48, 24' Rt) is replaced, and in Alternative 3b, the storm sewer from 1424 (westbound 95th Street Station 614+22, 6' Rt) to BB is replaced (westbound 95th Street Station 614+69, 61' Rt.) See Exhibit 2-00b.

☐ Yes ☒ No Utilize existing combined sewers with minor extensions and/or adjustment of existing drainage structures

☒ Yes ☐ No Regrade/reestablish existing ditches

Limits:

Outside Frontage E to inlet N (westbound 95th Street Station 628+66, 158' Lt.)

Outside Ramp G to inlet S (Harlem Avenue Station 313+45, 151' Rt.)

☒ Yes ☐ No Regrade/reestablish existing swales

Limits:

Inside of Ramp H to inlet Q (Harlem Avenue Station 317+51, 302' Rt.)

South of Ramp G

South of 95th Street, east of Ramp H to inlet P (eastbound 95th Street Station 713+73, 93' Rt.)

South of 95th Street, west of Harlem to BB (westbound 95th Street Station 614+69, 61' Rt.)

South of Ramp B to inlet X (Harlem Avenue Station 314+80, 194' Lt.)

South of Ramp H, north of Ramp G to inlet P (eastbound 95th Street Station 713+73, 93' Rt.)

West of Harlem, East of new Ramp D, to inlet CC (Harlem Avenue Station 321+09, 102' Lt.)

West of Harlem, East of new Ramp D, to inlet "New" (westbound 95th Street Station 619+25, 80' Lt.)

Outside Ramp F to inlet M (westbound 95th Street Station 626+30, 25' Lt.)

Inside Ramp F to inlet L (westbound 95th Street Station 624+74, 109' Lt.)

Outside Frontage E to inlet N (westbound 95th Street Station 628+66, 158' Lt.)

☒ Yes ☐ No Replace/relocate existing storm sewers

Limits and sizes:

Relocate 24" from 1483 (eastbound 95th Street Station 704+60, 24' Rt) to UNK-1 (eastbound 95th Street 704+60, 24' Rt) to accommodate roadway widening

Replace 30" from B (westbound 95th Street Station 613+30, 57' Lt) to 1424 (westbound 95th Street Station 614+22, 6' Rt.) with a 30" at greater slope

Replace 15" from L (westbound 95th Street Station 624+74, 109' Lt.) to UNK-2 (Harlem Avenue Station 321+08, 124' Rt) with an 15" at greater slope.

Replace 48" from AA (westbound 95th Street Station 629+72, 93' Rt.) to P (eastbound 95th Street Station 713+73, 93' Rt) with a 54"

Replace 48" from P (eastbound 95th Street Station 713+73, 93' Rt) to Q (Harlem Avenue Station 317+51, 302' Rt) with a 54"

Replace 48" from Q (Harlem Avenue Station 317+51, 302' Rt) to UNK-3 (Harlem Avenue Station 317+08, 138' Rt) with a 60"

Replace 60" from X (Harlem Avenue Station 314+80, 194' Lt) to V (Harlem Avenue Station 314+10, 103' Rt) with a 60" at a flatter slope

Replace 18" – 60" from FF (Harlem Avenue Station 325+33, 181' Rt) to UNK-2 (Harlem Avenue Station 321+08, 124' Rt) with equal diameter pipes at flatter slopes

Replace 36" from CC (Harlem Avenue Station 321+09, 102' Lt.) to UNK-2 (Harlem Avenue Station 321+08, 124' Rt) with a 36" pipe at greater slope

Relocate catch basin at Harlem Avenue Station 299+20, 44' Right to curbline.

Comments:

Sewer replacement from 1483 (eastbound 95th Street Station 704+60, 24' Rt) to UNK-1 (eastbound 95th Street 704+60, 24' Rt) is necessary to accommodate roadway widening.

Catch basin relocation at Harlem Avenue Station 299+20, 44' Right is necessary to capture runoff from Harlem Avenue and reduce drainage problems.

Other replacements are required to achieve sufficient capacity to convey gravity flow or to meet velocity requirements.

Note, the above list applies only to Alternatives 1 and 2.

In Alternative 3a, the following storm sewers are also replaced:

Replace 30" from UNK-1 (eastbound 95th Street Station 703+48, 24' Rt) to the wet well with a 36".

Replace 15" from D (westbound 95th Street Station 616+03, 86' Lt) to UNK-1 (eastbound 95th Street Station 703+48, 24' Rt) with a 36".

In Alternative 3b, the following storm sewers are also replaced:

Replace 42" from 1424 (westbound 95th Street Station 614+22, 6' Rt.) to BB (westbound 95th Street Station 614+69, 61' Rt.) with a 48"

Replace 30" from A (westbound 95th Street Station 610+41, 50' Lt.) to Y (westbound 95th Street Station 611+51, 60' Rt.) with a 48"

Replace 24" from Y (westbound 95th Street Station 611+51, 60' Rt) to 1424 (westbound 95th Street Station 614+22, 6' Rt.) with a 42"

☐ Yes ☒ No Replace/relocate existing combined sewers

☐ Yes ☒ No Abandon existing storm sewers

☐ Yes ☒ No Abandon existing combined sewers

☒ Yes ☐ No Regrade/reestablish/maintain existing outlets

Limits and sizes: Maintain existing 72" outlet from storm sewer system into Stony Creek.

Maintain 15" outlet from Central Detention Pond.

Maintain 42" outlet into southwest quadrant of intersection.

☐ Yes ☒ No Maintain/replace/extend existing cross road culverts

☒ Yes ☐ No Construct new storm sewers

Limits and sizes:

12" from area New to inlet F (westbound 95th Street Station 618+09, 74' Lt) at 0.38% slope

12" from area K1 to inlet K (Harlem Avenue Station 323+19, 84' Rt) at 0.30% slope

Comments: Above list for Alternative 1 only.

Alternative 2 and 3a: new 1000' - 42" storm sewer from Central Detention Pond overflow to Northwest infield pond.

Alternative 3b: new 600' triple 6'x6' box culvert (or equivalent) from Central Detention Pond overflow to inlet A (westbound 95th Street Station 610+41, 50' Lt.)

☐ Yes ☒ No Construct new combined sewers

☒ Yes ☐ No Construct special drainage structures

Limits and types:

See Section 2-03.

Comments: See Exhibit 2-03 for non-clog restrictor detail.

☐ Yes ☒ No Construct new ditches (standard ditches desired)

☒ Yes ☐ No Construct new swales

Limits:

North of Ramp B to inlet W (eastbound 95th Street Station 705+65, 57' Rt)

Outside of new Ramp D to inlet F (westbound 95th Street Station 618+09, 74' Lt)

North of 95th Street, west of Ramp D, to inlets D (westbound 95th Street Station 616+03, 86' Lt) and B (westbound 95th Street Station 613+30, 57' Lt.)

Outside Ramp F to inlet K-1 (Harlem Avenue Station 323+25, 80' Rt.)

☐ Yes ☒ No Construct new outlets

☐ Yes ☒ No Construct new cross road culverts

☐ Yes ☒ No Stormwater detention to be provided (See Section 2-03)

☐ Yes ☒ No Compensatory storage for floodway to be provided (See Section 3-00)

2-07.2 Proposed Action for Major Drainage Features

Pump Station: It is recommended that the existing pump equipment be replaced with three 8000 gpm (17.8 cfs) pumps plus one stand-by 8000 gpm (17.8 cfs) pump, as well as a 100 gpm (0.22 cfs) de-watering pump and 1200 gpm (2.67 cfs) low-flow pump. The total firm capacity is 53.5 cfs. The hydraulic grade line for the design storm (50-year storm with 10-year tailwater) is a minimum of two feet below the rim elevations for the mainline storm sewer which is adjacent to the low point of the roadway. The low point of the roadway profile is on 95th Street at Eastbound Station 700+50. The

low point of the roadway is 587.5, and lowest inlets in the infield adjacent to the roadway are at elevation 585.30. The proposed hydraulic grade line elevation at that inlet is 582.80 in the 50-year storm with 10-year tailwater for Alternatives 1 and 3, and lower for Alternative 2.

3-00 FLOODPLAIN ENCROACHMENT EVALUATION

The proposed project has been reviewed in accordance with Executive Order 11988 "Floodplain Management"; Section 6-261, "Floodplains" as contained in the Illinois Department of Transportation, Bureau of Location and Environment (BLE) Manual of Policies and Procedures (Volume 1); Drainage Manual; and 92 Illinois Administration Code 3708 "Floodway Construction in Northeastern Illinois."

☒ No Potential Floodplain Encroachment

☐ Potential Floodplain Encroachment

4-00 ILLINOIS DEPARTMENT OF NATURAL RESOURCES OFFICE OF WATER RESOURCES (IDNR-OWR) PERMIT

☐ Required ☒ Not Required

5-00 Appendix A: Source Data Reviewed

USGS Maps:

***Palos Park Quadrangle, dated 1963, photorevised 1973 and 1980

Survey Notes:

***Survey conducted by KAM Engineering, fall 2000, to be transmitted under separate cover

Local Drainage Plans:

***Illinois State Toll Highway Authority, Contract GRE-84-317R, plan sheets 2, 11, 47, 48, 49, 50, and 55a of 155, prepared by Jack E. Leisch & Associates, latest revision date 7/30/89.

***Plan exhibits titled "Exhibit No. 1, Tri-State Tollway & 95th Interchange, Existing Drainage Condition" and "Exhibit No. 3, Tri-State Tollway & 95th Interchange, Proposed Drainage Condition." No date, no name. 1 plan sheet.

*Village of Bridgeview, General Drainage Plan – South of 95th Street & West of Harlem Avenue, record drawing, dated 1-20-97, prepared by Hoefferle-Butler Engineering, Inc. 1 plan sheet.

*Village of Bridgeview, 72" Trunk Storm Sewer Plans, dated 6-24-92, prepared by Hoefferle-Butler Engineering, Inc. 3 plan sheets.

*Village of Bridgeview, 60" Trunk Storm Sewer Plans, undated, prepared by Hoefferle-Butler Engineering, Inc. 2 plan sheets.

***Village of Bridgeview, Construction Plan & Profile – Octavia Avenue, as-built plans prepared by Hoefferle-Butler Engineering, Inc., dated 2-17-92, sheet 3 of 7.

***Village of Bridgeview, Construction Plan & Profile – Odell Avenue, as-built plans prepared by Hoefferle-Butler Engineering, Inc., dated 2-17-92, sheet 4 of 7.

***Village of Bridgeview, Construction Plan & Profile – 93rd Street, as-built plans prepared by Hoefferle-Butler Engineering, Inc., dated 2-17-92, sheets 3 and 4 of 6.

As Built and/or Microfilm Highway Plans:

*Grading, Paving and Drainage Plans, Harlem Avenue & 95th Street Interchange, Project U-4(58) prepared by H.W. Lochner, Inc., dated March 23, 1961.

*Drainage Plans, Harlem Avenue, 100th Street to Stony Creek, Project DF-4 (40), dated June 5, 1958

*Drainage Plans, Harlem Avenue, 79th Street to 100th Street, Project FU-4 (40), dated September 28, 1959

Reports and Records:

*District One maintenance record for IL 43, 79th Street to 87th Street.

*Copy of report titled "Stormwater Management Plan, Village of Bridgeview, for the Area Between 87th Street and 95th Street and Harlem Ave. and Tri State Tollway." Latest revision date April 1988, prepared by Robinson Engineering.

Proposed Geometrics

**Prepared by Earth Tech, 2001.

* On file in the Hydraulics Section
** On file in the Project and Environmental Studies Section
*** Transmitted to the Bureau of Design

5-00 Appendix B: Exhibits

General Location Drainage Map, Exhibit 1-00a

Existing Drainage Plan, Exhibit 1-00b

Existing Storm Sewer Plan, Exhibit 1-00c

Flood Insurance Rate Map, Exhibit 1-02a

Flood Profile, Exhibit 1-02b

Proposed Drainage Plan, Exhibit 2-00a

Proposed Storm Sewer Plan, Exhibit 2-00b

Typical Sections, Exhibit 2-01

Proposed Roadway Profile and Alignment, Exhibit 2-02

Non-clog Inlet Detail, Exhibit 2-03

Sketch of Drainage Alternatives, Exhibit 2-04

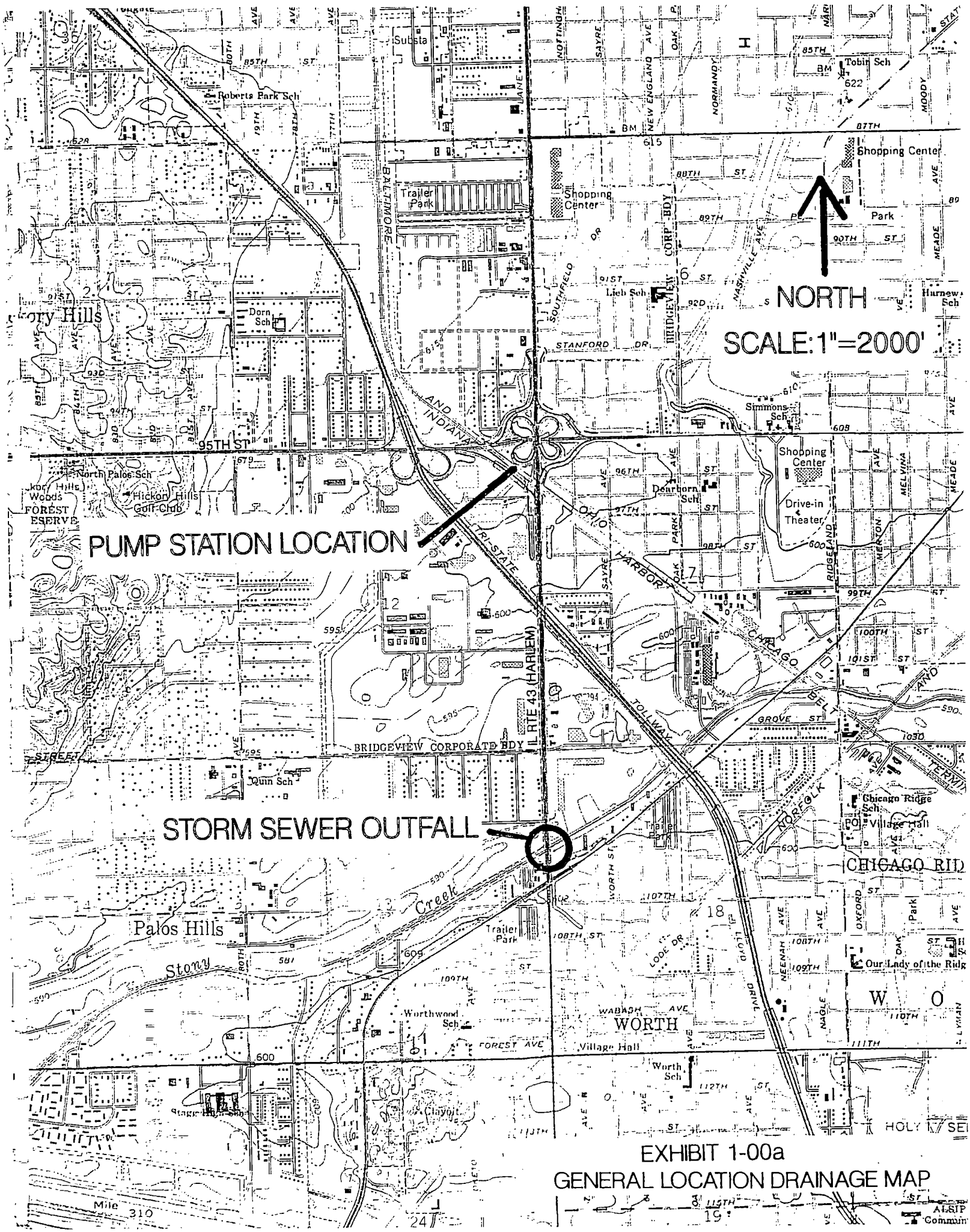
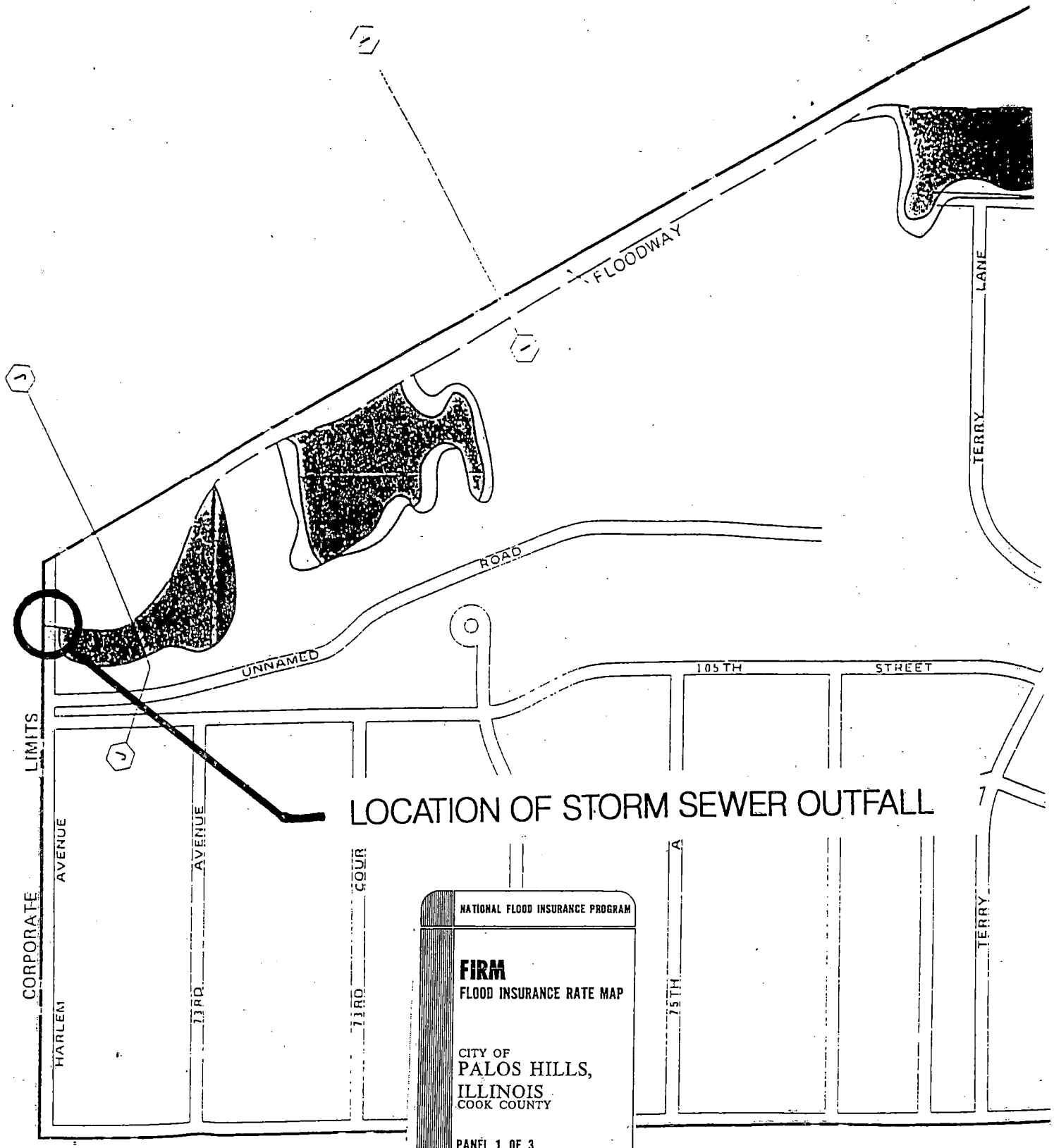


EXHIBIT 1-00a

GENERAL LOCATION DRAINAGE MAP



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
PALOS HILLS,
ILLINOIS
COOK COUNTY

PANEL 1 OF 3
(SEE MAP INDEX FOR PANELS NOT PRINTED)

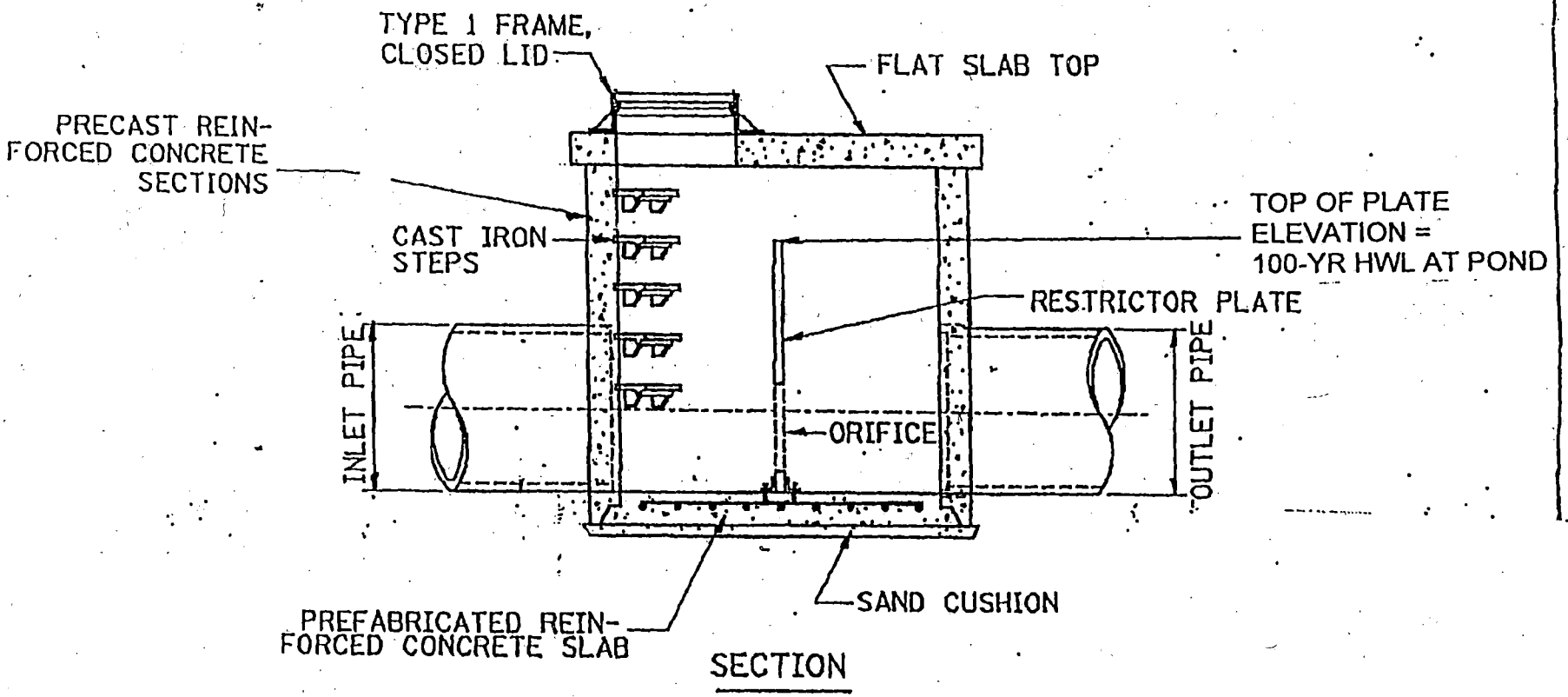
COMMUNITY-PANEL NUMBER
170143 0001 C

EFFECTIVE DATE:
JANUARY 16, 1981

federal emergency management agency
federal insurance administration

EXHIBIT 1-02a
FLOOD INSURANCE RATE MAP

APPROXIMATE SCALE
400 0 400 FEET



NON-CLOG INLET DETAIL

EXHIBIT 2-03

FIGURE

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

CALCULATION SHEET

PAGE 1 OF 4

PROJECT NO. 40855

CLIENT IDOT

SUBJECT Sketch of Drainage Alt. 1

Prepared By JNH DATE 3-6-02

PROJECT Harlem 195th LDS

Reviewed By _____ DATE _____

Approved By _____ DATE _____

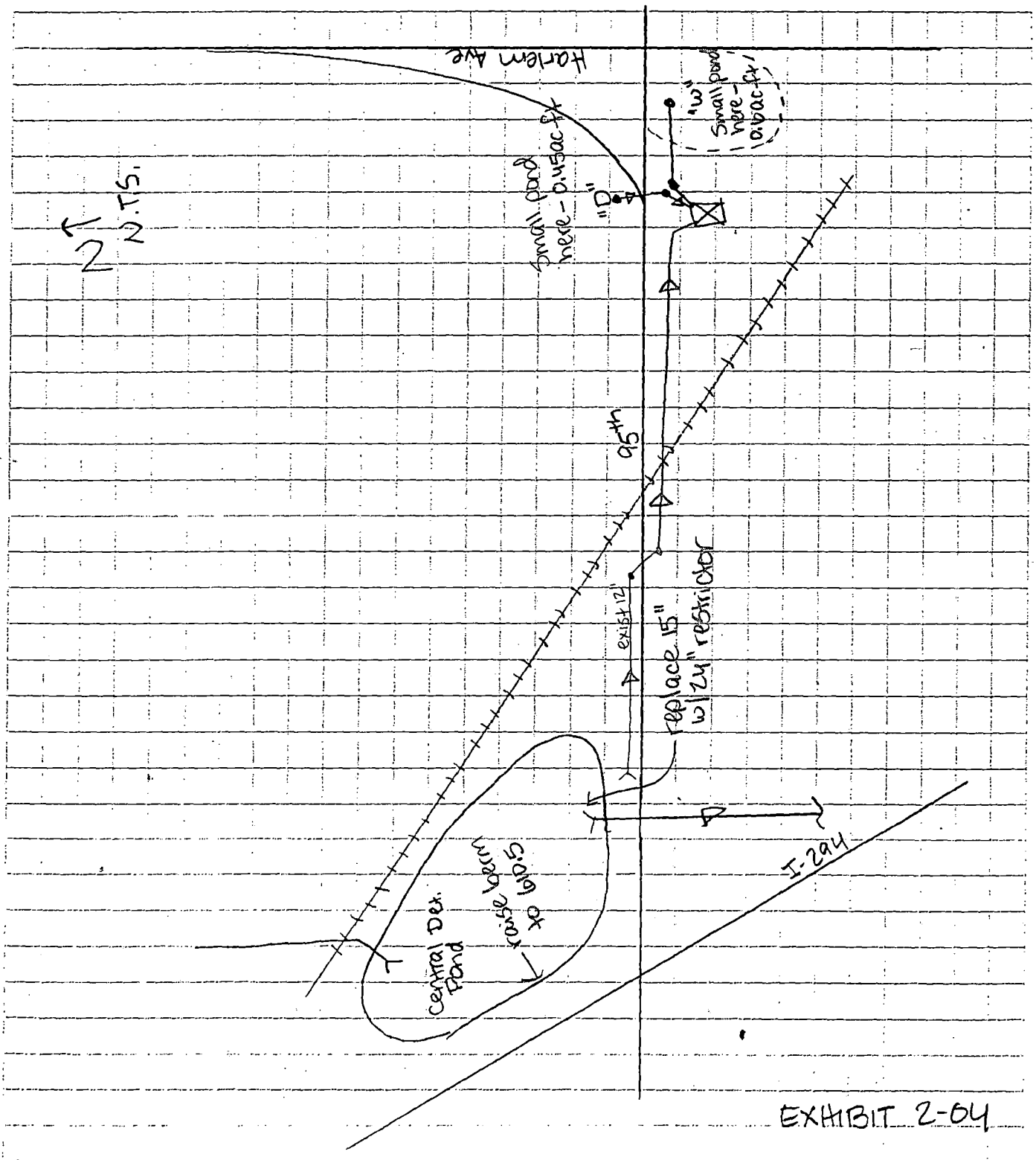


EXHIBIT 2-04

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

CALCULATION SHEET

PAGE 2 OF 4

PROJECT NO. 40855

CLIENT IDOT

SUBJECT Sketch of Drainage Alt. 2

PROJECT Harlem 195th LDS

Prepared By JNH DATE 3-6-02

Reviewed By _____ DATE _____

Approved By _____ DATE _____

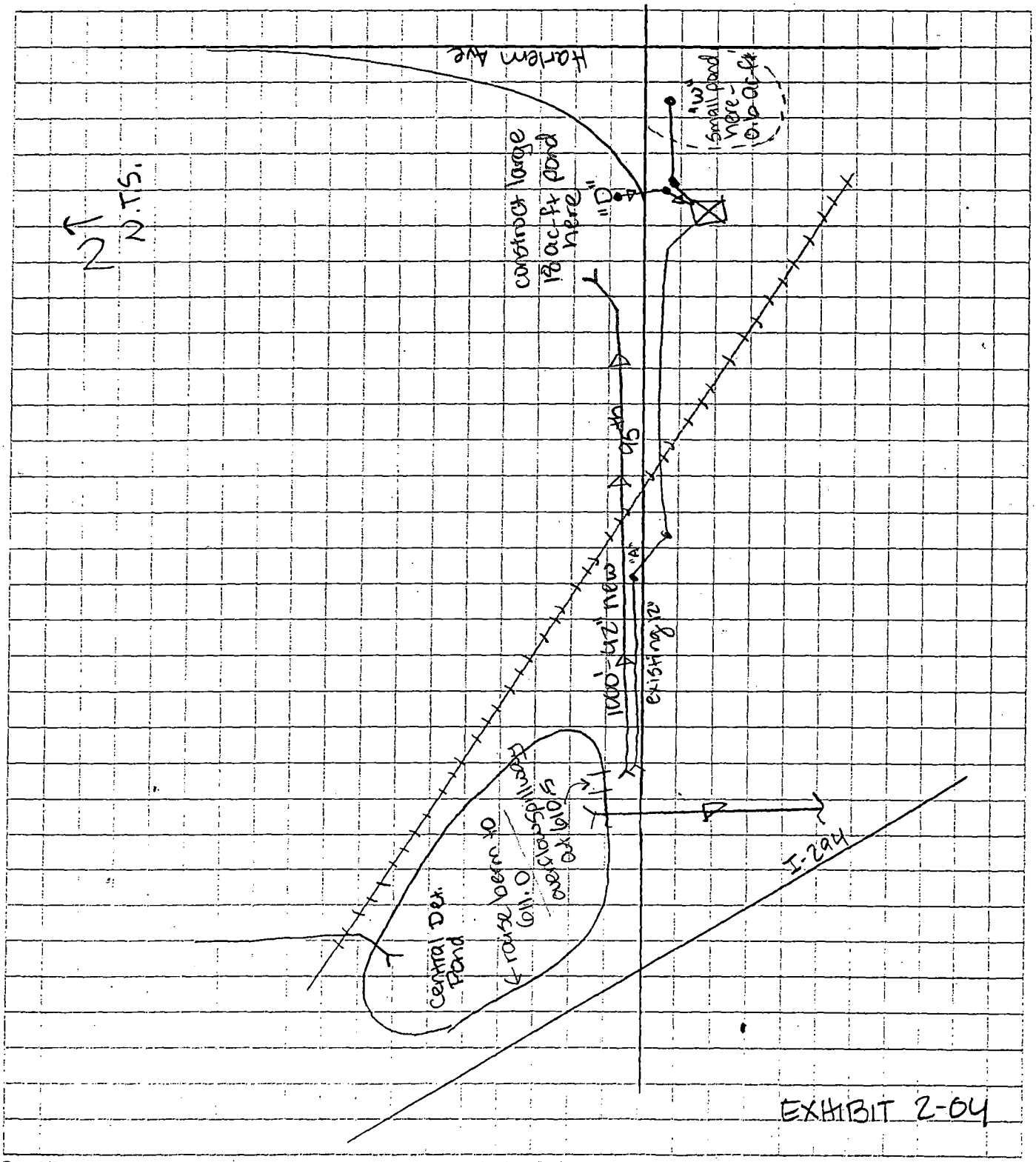


EXHIBIT 2-04

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

CALCULATION SHEET

PAGE 3 OF 4

PROJECT NO. 40855

CLIENT IDOT

SUBJECT Sketch of Drainage Alt. 3a

PROJECT Harlem 195th LDS

Prepared By JNH DATE 3-6-02

Reviewed By _____ DATE _____

Approved By _____ DATE _____

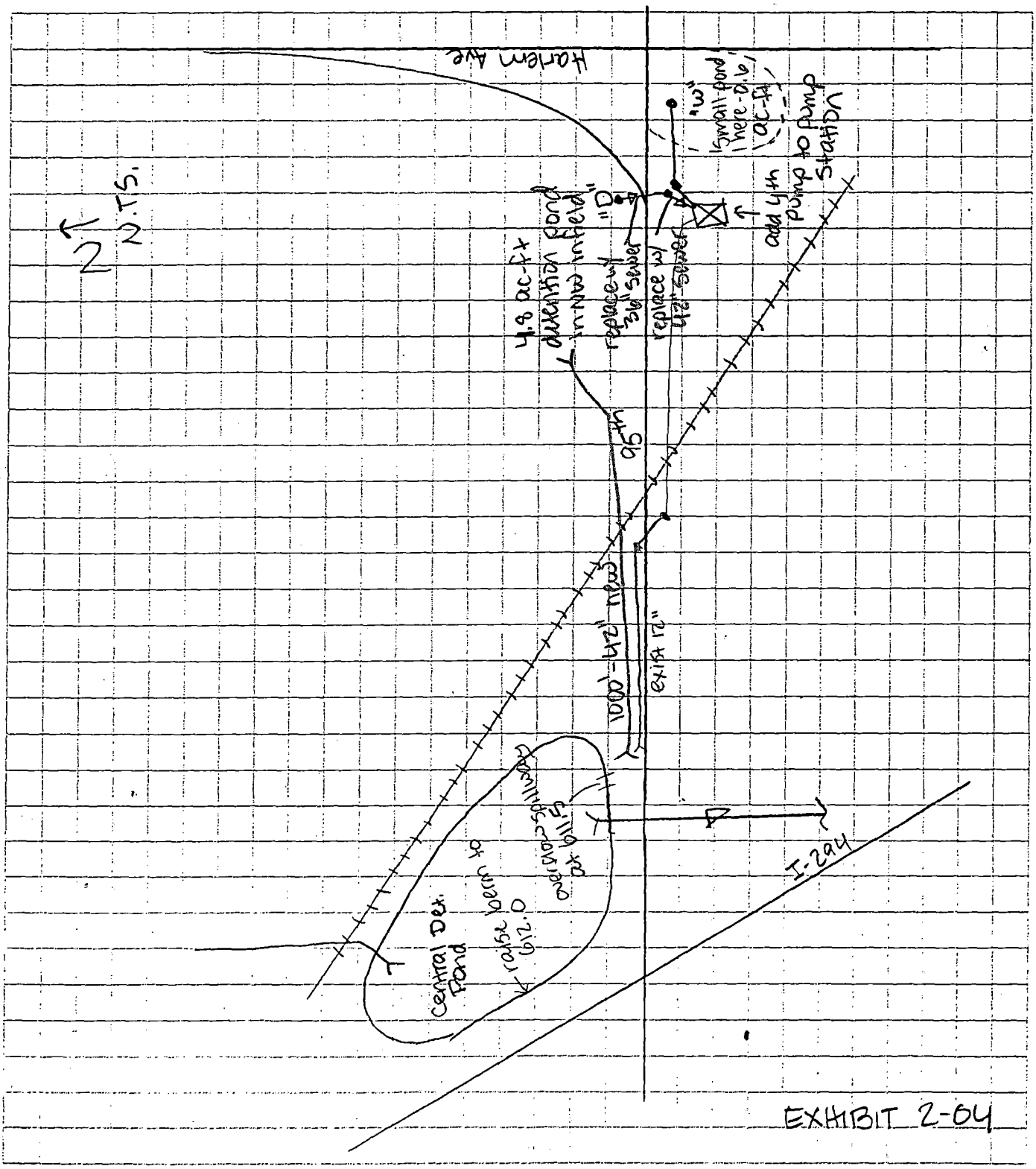


EXHIBIT 2-04

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

CALCULATION SHEET

PAGE 4 OF 4

PROJECT NO. 40855

CLIENT IDOT SUBJECT Sketch of Drainage Alt. 3b Prepared By JNH DATE 3-6-02

PROJECT Harlem 195th LDS Reviewed By _____ DATE _____

Approved By _____ DATE _____

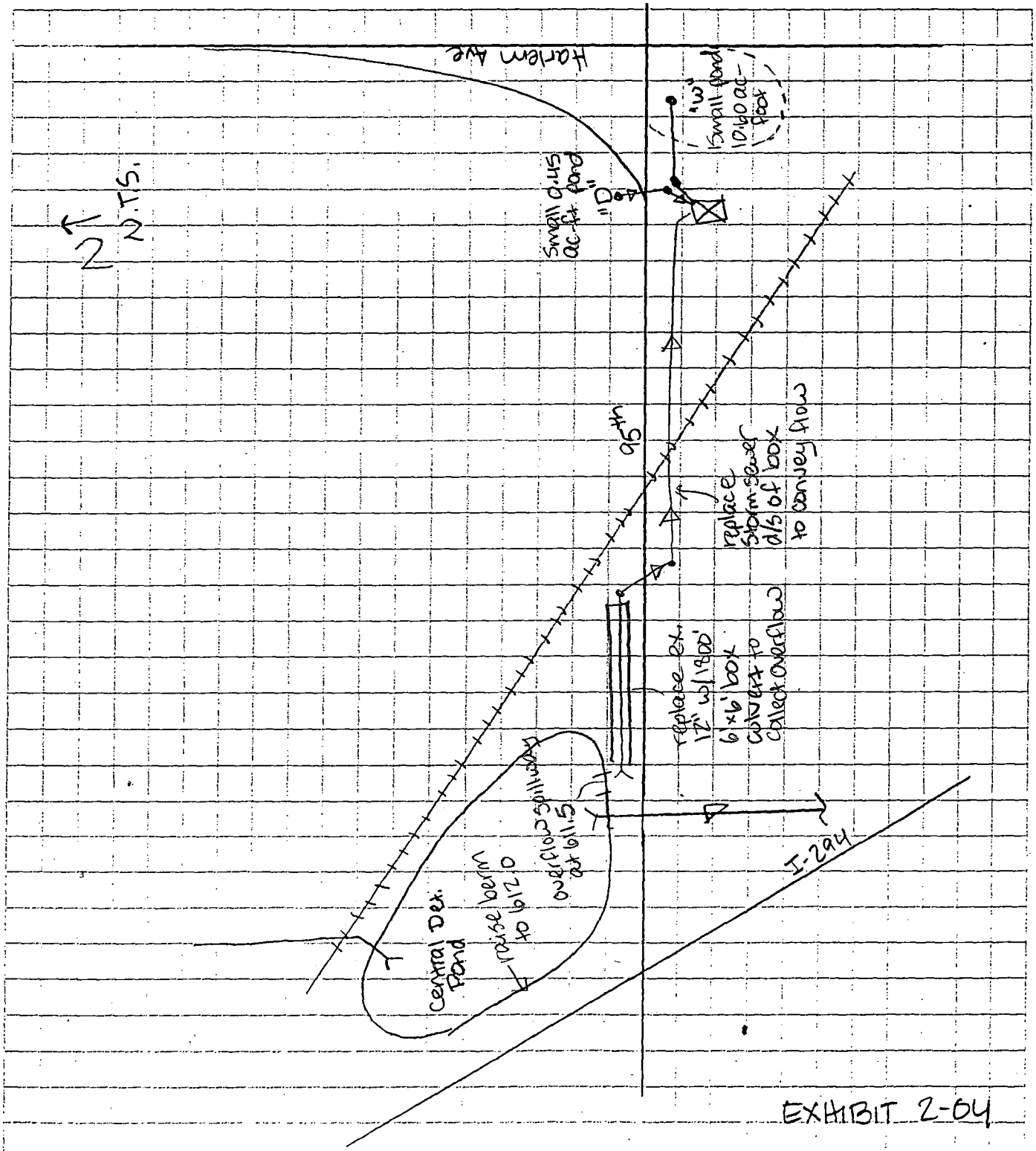


EXHIBIT 2-04

5-00 Appendix C: Correspondence

IDOT Flooding Records

1998 District One Ave... Fl ng ...

Arterial Routes

RANKING								MARKED ROUTE	NAMED ROUTE	LOCATION	MUNICIPALITY	COUNTY	PUMP STA NO.	REPORTED PAVEMENT FLOODING OCCURRENCES									CURRENT AVERAGE DAILY TRAFFIC	TRAFFIC COUNT DATE	INITIAL RANKING (ADT*OCC) /1000	LAST DATE FLOODED
1998	1997	1996	1995	1994	1993	1992	1991							<92	1992	1993	1994	1995	1996	1997	1998	TOTAL				
WL	146	103	WL	WL	154	248		U S ROUTE 12	ILL 31/MAIN STREET	AT ILLINOIS ROUTE 173 (N/O)	RICHMOND	McHENRY		1	0	0	0	0	1	0	0	2	15100	1997	30.20	06/06/96
WL	WL	WL	WL	70	WL	148		U S ROUTE 12	RAND ROAD	AT ILLINOIS ROUTE 22 (N/O & S/O)	LAKE ZURICH	LAKE		1	0	1	1	0	0	0	0	3	40300	1996	120 90	01/27/94
WL	WL	WL	WL	WL	WL	326		U S ROUTE 12		AT AMY (NB)				1	0	0	0	0	0	0	0	1				03/10/89
WL	WL	WL	WL	WL	84	49		U S ROUTE 12	RAND ROAD	AT ILLINOIS ROUTE 53 (RUNAWAY BAY)	PALATINE	COOK		4	0	0	0	0	0	0	0	4	32900	1994	131.60	09/01/89
WL	WL	WL	WL	WL	WL	252		U S ROUTE 12	RAND ROAD	AT QUENTIN ROAD TO PLUM GROVE ROAD	KILDEER	LAKE		1	0	0	0	0	0	0	0	1				08/14/87
WL	WL	WL	WL	WL	27	33		U S ROUTE 12	RAND ROAD	AT CAMP McDONALD ROAD	ARLINGTON HEIGHTS	COOK		3	0	1	0	0	0	0	0	4	30000	1994	120 00	06/19/93
WL	WL	WL	WL	WL	WL	218		U S ROUTE 12	ILL 59/RAND ROAD	AT ILLINOIS ROUTE 59 (FRNTG ROAD)	FOX LAKE	LAKE		1	0	0	0	0	0	0	0	1				08/13/87
WL	WL	WL	WL	WL	WL			U S ROUTE 12		AT RIVERSIDE, ISLAND, & OAK STREET	BURTON TWSP	McHENRY		1	0	0	0	0	0	0	0	1				07/29/90
WL	53	WL						U S ROUTE 12	RAND ROAD	AT KENSINGTON ROAD	MOUNT PROSPECT	COOK		2	0	1	1	0	2	0	0	6	34800	1994	208 80	06/17/96
WL	WL	WL	WL	WL	WL	245		U S ROUTE 12	RAND ROAD	AT FOX LAKE BRIDGE (Riverside Dr to Oak St)	FOX LAKE	LAKE		3	0	0	0	0	0	0	0	3	25200	1996	75 60	03/26/91
45	50	41	87					U S ROUTE 12	RAND ROAD	AT ILLINOIS ROUTE 68 (S/O)	PALATINE	COOK		0	0	0	0	1	2	1	0	4	37900	1994	151 60	02/21/97
WL	WL	WL						U S ROUTE 12	MAIN STREET	AT BURLINGTON ROAD (S/O)	RICHMOND	McHENRY		0	0	0	0	0	1	0	0	1				05/20/96
WL	WL	WL	WL	77				U S ROUTE 12	RAND ROAD	AT MINER STREET	DesPLAINES	COOK		0	0	0	1	0	0	0	0	1				01/27/94
WL	WL	WL	WL	WL	WL			U S ROUTE 12	RAND ROAD	AT 1200 EAST (NEAR CENTRAL RD)	MOUNT PROSPECT	COOK		1	0	0	0	0	0	0	0	1				08/18/90
70	71	WL	WL	WL	117	230		U S ROUTE 12	ILL 59/RAND ROAD	AT ILLINOIS ROUTE 134 TO EAGLE POINT	FOX LAKE	LAKE		1	0	2	0	0	0	1	0	4	25800	1996	103 20	08/04/97
180	192	WL	75					U S ROUTE 12		AT KENNICOTT (E/O)		COOK		0	0	0	0	1	0	1	0	2	NO ADT			02/21/97
37	42	WL	WL	WL	25	26		U S ROUTE 12	RAND ROAD	AT RIVER ROAD TO GOLF RD (ALL LANES)	DesPLAINES	COOK		3	0	3	0	0	0	1	0	7	24100	1994	168.70	02/21/97
21	27	17	17	15				U S ROUTE 12	RAND ROAD	AT ELA ROAD (E,J & E VIADUCT)	LAKE ZURICH	LAKE		1	0	3	1	0	2	0	1	8	36900	1996	295.20	10/17/98
WL	WL	WL	WL	WL	WL			U S ROUTE 12	ILL 59/RAND ROAD	AT KENT W/O	LAKEMOOR	LAKE		0	0	1	0	0	0	0	0	1				06/07/93
WL	WL	WL	WL	WL	WL			U S ROUTE 12		AT ROLLEY DRIVE				1	0	0	0	0	0	0	0	1				08/07/89
WL	133	80	WL	WL	WL			U S ROUTE 12		AT WILMONT ROAD	BURTON TWSP	McHENRY		0	0	1	0	0	2	0	0	3	12400	1997	37.20	06/21/96
WL	WL	WL	WL	82				U S ROUTE 12	RAND ROAD	AT ARLINGTON HEIGHTS ROAD (W/O)	ARLINGTON HEIGHTS	COOK		0	0	0	1	0	0	0	0	1				02/20/94
WL	WL	WL						U S ROUTE 12	RAND ROAD	AT KINGS ROAD (FRNTG RDS S/O)	FOX LAKE	LAKE		0	0	0	0	0	1	0	0	1				01/18/96
107	122	WL	WL	WL	WL	242		U S ROUTE 12/20	95TH STREET	AT 84TH AVENUE		COOK		1	0	0	0	0	0	1	0	2	22200	1994	44 40	02/21/97
WL	WL	WL	WL	WL	WL	342		U S ROUTE 12/20	95TH STREET	AT 81ST STREET	HICKORY HILLS	COOK		1	0	0	0	0	0	0	0	1				11/05/90
WL	57	34	WL	WL	WL			U S ROUTE 12/20	95TH STREET	AT INTERSTATE ROUTE 294	HICKORY HILLS	COOK		0	0	2	0	0	1	0	0	3	44600	1994	133 80	07/17/96
WL	WL	WL	WL	WL	WL			U S ROUTE 12/20	95TH STREET	AT 76TH AVENUE	HICKORY HILLS	COOK		0	0	1	0	0	0	0	0	1				06/07/93
WL	WL	WL	WL	WL	WL			U S ROUTE 12/20	95TH STREET	AT STONEY ISLAND AVENUE	CHICAGO	COOK		1	0	0	0	0	0	0	0	1				07/20/90
WL	53							U S ROUTE 12/20	95TH STREET	AT ILLINOIS ROUTE 43	OAK LAWN	COOK		0	0	2	0	0	1	0	0	3	46100	1994	138.30	07/17/96
WL	WL	WL	WL	WL	WL			U S ROUTE 12/20/45	MANNHEIM ROAD	AT ILLINOIS ROUTE 38 (ROOSEVELT ROAD)	HILLSIDE	COOK		1	0	0	0	0	0	0	0	1	6/7/93	9/15/93		10/26/91
WL	WL	WL	WL	WL	WL			U S ROUTE 12/20/45	LaGRANGE ROAD	AT 76TH AVENUE	COUNTRYSIDE	COOK		0	0	1	0	0	0	0	0	1				06/07/93
WL	WL	WL	WL	WL	WL	225		U S ROUTE 12/20/45	MANNHEIM ROAD	AT INTERSTATE ROUTE 290 (5B)	HILLSIDE	COOK		1	0	0	0	0	0	0	0	1				08/26/87
WL	WL	WL	WL	WL	WL			U S ROUTE 12/20/45	MANNHEIM/LaGRANGE RD	AT CERMAK ROAD (22ND ST)	WESTCHESTER	COOK		1	0	0	0	0	0	0	0	1				08/08/91
72	89	58	44	73	WL			U S ROUTE 12/20/45	LaGRANGE ROAD	AT 79TH ST TO 87TH ST (AT I-294 & ILL 171)	WILLOW SPRINGS	COOK		1	0	2	1	2	1	0	1	8	12300	1994	98 40	09/07/98
WL	WL	WL	WL	WL	WL			U S ROUTE 12/45	MANNHEIM ROAD	AT U S ROUTE 20	MELROSE PARK	COOK		1	0	0	0	0	0	0	0	1				05/07/91
WL	WL							U S ROUTE 12/45	MANNHEIM ROAD	AT GRAND AVENUE	FRANKLIN PARK	COOK		0	0	0	0	0	0	1	0	1				02/21/97
WL	WL							U S ROUTE 12/45	MANNHEIM ROAD	AT ILLINOIS ROUTE 72	ROSEMONT	COOK		0	0	0	0	0	0	1	0	1				02/21/97
WL	WL	WL						U S ROUTE 12/45	MANNHEIM ROAD	AT INTERSTATE ROUTE 294	FRANKLIN PARK	COOK		0	0	0	0	0	1	0	0	1				07/17/96
1	1	WL	WL	WL	1	1	5	U S ROUTE 12/45	MANNHEIM ROAD	AT ILLINOIS ROUTE 64 (VIADUCT)	STONE PARK	COOK	9	9	7	16	0	0	1	2	0	35	40400	1994	1414 00	08/16/97
WL	79	50	WL	WL	WL			U S ROUTE 12/45	MANNHEIM ROAD	AT LAWRENCE AVENUE ENTRANCE (EB)	SCHILLER PARK	COOK		0	1	0	0	1	0	0	0	2	47900	1994	95 80	09/07/95
WL	WL							U S ROUTE 14	NORTHWEST HIGHWAY	AT EUCLID AVE TO RIDGE ROAD	ARLINGTON HEIGHTS	COOK		0	0	0	0	0	0	1	0	1				03/01/97
WL	WL	WL	WL	WL	WL			U S ROUTE 14	DIVISION STREET	AT BLACKMAN (BY SHELL STA)	HARVARD	McHENRY		0	0	1	0	0	0	0	0	1				06/30/93

District One
Bureau of Maintenance
Flood Location Data

Comm. Center Report Number _____
(Ask Dispatcher)

Location: (Route) 95TH ST. Municipality BRIDGEVIEW

Date: 6-7-93 Time notified: 11:00 A.M. Time at scene: 11:30 AM

Source of notification: LOCAL POLICE
(If other than Comm. Center - Notify Comm. Center)

DETAILS OF FLOODED LOCATION

Pavement flooding @ I-294 AND RT. 43

Direction ALL DIRECTIONS
Lanes involved FOUR
Average depth of water SIX INCHES
Length of standing water 200 FT.
Passable to automobile traffic Yes _____ No ✓

R.O.W. flooding

Shoulder _____ Parkway ✓
Direction ALL DIRECTION
Average depth of water SIX INCHES
Length of standing water 200 FT.

Apparent cause of flooding PUMP STATION FAILURE

Corrective measures implemented: ROAD CLOSED UNTIL WATER DOWN

Duration of Closure THREE HOURS
Name of Reporter JAMES TECH
Phone: TCF 448-0050

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DISTRICT ONE – OPERATIONS & COMMUNICATIONS CENTER

(53)

FLOODING

DATE: 4-15-93 DAY: THURSDAY PAGE 1 OF

DISP. INIT.	INFORMANT/ TIME REC'D	DIRECTION & LOCATION	LANE #'S	EST. DEPTH	PASSABLE (YES/NO)	CONTACTED (WHO/TIME)	TIME CLOSED	VERIFIED (NAME)	TIME / DATE DISP. INIT.
SMS	0032 BARRINGTON HILLS #895	NB ILL. 59 S/O DUNDEE LANE - NOT A HAZARD CAN WAIT TILL AM CALL-OUT		LESS THAN 1"	YES	Dave ARL. HTS.		Dave	9:47 4/15 JMH
SMS	0119 GLENCOE PD. #695	DUNDEE RD. JUST E/O I-94 EB + WB	ALL	4-5"	YES	0121 KRASNYCKYJ NORTHBROOK		SIGNS POSTED RC#306	0219 4-15 SMS
SMS	0240 TIM @ STATION 1	US 34 @ HILL AVE			YES	0242 DIGRISTINA NAPERVILLE		WOP SIGNS POSTED RC# 484	0349 4-15 SMS
SMS	0444 BRIDGEVIEW PD. ARNSWALD	79th & HARLEM SW CORNER			YES	0445 DIJULIO HILLSIDE		Jerry O	14:55 4/15 JMH
AJ	RC. 1416 0609 A	NB 45 @ SW HWY	CURB LANE	2" L-2 ONLY	YES	KOROS @ 06:16 ALSIP		Trch	14:57 4/15 JMH
RAM	COOK CO. * A.V. 7:01	95TH E/O 104TH W/O HARLEM			YES.	TRCH ALSIP 7:05		Trch	14:55 4/15 JMH
JMH	#9 [illegible] PD 8:07	SB Sheridan Rd N of Crabtree Farm	SB		No	Barry Lurvey		Vermillion	14:55 4/15 JMH
RAM	KANE CO. *511 14:27	EB RT. 64 E/O RT. 47	EB		YES	JOHN ST. CHARLES 14:28		PAXTON	16:03 4/15 E.D.
JMH	#1266 McH Co PD 7:09	NB/SB IL 23 S of Collins	all	4"	No	Mr Eddy Woodstock		RC273	18:32 4/15 JMH
JMH	Karen Marengo PD 8:02	947 E Grant Hwy (US 20)	all		yes	Mr Eddy Woodstock		RC273	18:32 4/15 JMH

COPIES TO: MR. J. KOS, MR. MCDERMOTT, MR. MARCOTTE, MR. WANG, MR. SABOURIN.

TAKAHASHI 5/92 TED 12/92

COMCENTER PUMP STATION ALARM LOG

*UPDATE

RAIN/THUNDERSTORM WARNING DATA:
WARNING RECEIVED (DATE/TIME) 6/2/93, 0900
CURRENT FROM 1100, MON TO 2000, MON
OPERATIONAL COLOR CODE: Y7, G3
AMOUNT OF RAIN EXPECTED: .3-.6
COMM.CNTR MAINT. SQUAD SUPRV. NTFD: ALOHA 0905, 1057
ELEC. CONTRACTOR NTFD: ALOG GEORGE 0908 HRS, 1105 CLEAR
ETP FOREMAN NTFD: RC #914, 0917 HRS

TRFIC.& MAINT. ENG.(J. KLAFETA): 1104 PAGED - 0917
*MAINT. ENGR (J. KOS): 1121
*(ONLY DURING OFFICE HOURS)
SNOW SEASON DUTY ENGRS NTFD:
COMM. DISPATCHER: DLH 0900 HRS 1055
ALL CLEAR (DATE/TIME):

ALARM TYPES:
CODE 1 =BURGLARY
CODE 4 =WATER ON PAVEMENT
CODE 5 =HIGH WATER

					FOLLOW UP INFORMATION FROM CONTRACTOR FOR WATER ON PAVEMENT CONDITION ONLY							
DISP UNIT	ELECTRICAL CONTRACTOR WHO/TIME	PUMP STA. NO.	ALARM TYPE	ELECTRICAL ENGR. NTFD WHO/TIME	PUMPS RUNNING #/TIME	WET WELL WATER DEPTH	WATER ON PAVEMENT (FEET)	STREET INLETS CLEAR	ELECT. ENGR. RE-NTFD	MAINT/ PD NTFD WHO/TIME	ALARM ALL CLEAR WHO/TIME	DISP. INIT.
JMR	Neo-Alld	19	5	ROGER	all YES		NO	YES	GO			
JMR	1928 George@Alck	15	5	Roger 1249	NO	LFT	8-10 INCH	NO	ROGER 1249.		#661 MOG. 2004	DH
SAM	12:54 George Ald	9	5	1256 ED SaBourin	NO	5.5 1243	NO	YES	ED SaBourin			
SAM	12:57 George Ald	21	5	12:56 ED SaBourin	all YES			NO	ED SaBourin		1928 NASER	DH
SAM	12:54 George Ald	25	5	1256 ED SaBourin	3 OUT 5 1532	7'	NO	YES	ROB-WALKER			
SAM	1254 George Ald	27	5	ED SaBourin	YES	28 FEET	NO	YES	ED			

FROM 0700 HOURS TO 1500 HOURS NOTIFY HILLSIDE FIELD OFFICE 544-3080 NAME: ROGER TIME: 0911, 1106

FROM 1500 HOURS TO 0700 HOURS NOTIFY:

1. NASER GHOLEH PAGER 1ST (312) 712-5989 RESPONDED Y OR N TIME: 11:59
2. IF NO RESPONSE IN 1/2 HOUR CALL NASER AT (312) 737-8542 TIME:
3. RAY MURPHY PH# (312)238-3402 RC 062 TIME:
4. ED SABOURIN PH# (708)833-0151 RC 061 TIME:
5. MARTY ANDERSON PH# (708)843-8667 TIME:
6. IF N/R GO TO # 1 AND REPEAT CALL OUT TIME:

CC: ES,LRB,WANG,COMSUPERVISORS(1)

THE PROCEDURE FOR PUMP STATIONS UNDER CONSTRUCTION ARE ON THE BACK. (FTOOL-PS 1-93)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DISTRICT ONE – OPERATIONS & COMMUNICATIONS CENTER

*****FLOODING*****

DATE: 6/7/93 DAY: MONDAY PAGE 3 OF 4

DISP. INIT.	INFORMANT/ TIME REC'D	DIRECTION & LOCATION	LANE #'s	EST. DEPTH	PASSABLE (YES/NO)	CONTACTED (WHO/TIME)	TIME CLOSED	VERIFIED (NAME)	TIME / DATE DISP. INIT.
PG	D3 3-77 12:35pm	SB Rt. 62 to 53 90	1	? 0	Yes	12:37p Dominic I-290		Dom I-290	1221 6/9/93 JAC
EN	Marnie of Maint. 1250P.	6100 W 127th @ Menoe	?	?		RC 711 Alsip		Frank Alsip	12:49 6/9/93 JAC
P	RC 715 1226P	95th St: 76th Ave (Hickory Hills)	?	?	NO	RC 711 Alsip		Hickory Hills P.D Cathy	1454 6/7 JAC
P	RC 715 1226P.	SB Harlem to WB 95th (Bridgeview)	?	?	NO	RC 711 Alsip		RC#712	1730 6/7 DH
JMW		105th St: Archer	?	?	?	RC711 Alsip.		RC#712	1730 6/7 DH
MK	RC484 1315	SB 53 @ 83rd	All	?	YES (Big trucks only)	RC484		Bob Naperville	6/9/93 JAC 1237
AMR	1319 Elmhurst	WB 64 @ I-290			Yes	Northside	Already aware	Joe Northside	6/9/93 1228 JAC
MK	Addison PD 392	WB 20 @ Villa Rd	1	?	Yes	Dave @ 1328 Oakbrook		Dan Grow Oakbrook	6/9/93 1228 JAC
DEN	Hills Hills P.D. Celia 1321	NB Kean @ 105th	1	?	YES	RC711 Alsip		DD PK	DH 20-N 6/7
PG	D3 1:39pm	~~SE Ruef out. I-90~~	~~N9~~	~~? 0~~	~~Yes~~	Kennedy			

COPIES TO: MR. J. KOS, MR. MCDERMOTT, MR. MARCOTTE, MR. WANG, MR. SABOURIN.

TAKAHASHI 5/92 UPDATED 12/92

1998 District One Pavement Flooding Prioritization

Arterial Routes

RANKING								MARKED ROUTE	NAMED ROUTE	LOCATION	MUNICIPALITY	COUNTY	PUMP STA NO.	REPORTED PAVEMENT FLOODING OCCURRENCES									CURRENT AVERAGE DAILY TRAFFIC	TRAFFIC COUNT DATE	INITIAL RANKING (ADT*OCC) /1000	LAST DATE FLOODED
1998	1997	1996	1995	1994	1993	1992	1991							<92	1992	1993	1994	1995	1996	1997	1998	TOTAL				
WL	WL	WL						ILLINOIS ROUTE 43	HARLEM AVENUE	AT INTERSTATE ROUTE 294	BRIDGEVIEW	COOK		0	0	0	0	0	1	0	0	1				05/28/96
WL	WL	WL	WL	WL	79	82		ILLINOIS ROUTE 43	HARLEM AVENUE	AT ROCK ISLAND RAILROAD	TINLEY PARK	COOK	36	2	1	0	0	0	0	0	0	3	25500	1994	76.50	06/17/92
WL	WL	WL						ILLINOIS ROUTE 43	WAUKEGAN ROAD	AT DEERPATH	LAKE FOREST	LAKE		0	0	0	0	0	1	0	0	1				05/20/96
WL	WL	WL						ILLINOIS ROUTE 43	HARLEM AVENUE	AT 111TH STREET TO 119TH STREET	WORTH	COOK		0	0	0	0	0	1	0	0	1				07/17/96
57	89	WL	WL	85	WL			ILLINOIS ROUTE 43	HARLEM AVENUE	AT I C RR (46TH STREET)	FOREST VIEW	COOK		1	0	0	1	0	0	1	1	4	29800	1994	119.20	12/06/98
WL	WL	WL	WL	WL	WL	201		ILLINOIS ROUTE 43	HARLEM AVENUE	AT HOWARD STREET (N/O)	NILES	COOK		1	0	0	0	0	0	0	0	1				11/28/90
WL	WL							ILLINOIS ROUTE 43	WAUKEGAN ROAD	AT C, M & ST PAUL RR (CENTRAL ROAD)	GLENVIEW	COOK		0	0	0	0	0	0	1	0	1				02/21/97
WL	WL	WL	WL	WL	WL			ILLINOIS ROUTE 43	WAUKEGAN ROAD	AT NORTH OF TECHNY ROAD	NORTHBROOK	COOK		0	0	1	0	0	0	0	0	1				06/08/93
WL	WL	WL	WL	WL	WL	209		ILLINOIS ROUTE 43	HARLEM AVENUE	AT 181ST STREET (WEST SIDE)	LANSING	COOK		1	0	0	0	0	0	0	0	1				08/21/90
WL	WL	WL	WL	58				ILLINOIS ROUTE 43	HARLEM AVENUE	AT 86TH STREET (southbound)	BRIDGEVIEW	COOK		0	0	0	1	0	0	0	0	1				10/31/94
62	67	WL	29	28	56	127		ILLINOIS ROUTE 43	HARLEM AVENUE	AT 79TH STREET	BRIDGEVIEW	COOK		1	0	1	1	0	0	1	0	4	38900	1994	155.60	01/04/97
130								ILLINOIS ROUTE 47		AT FREEMAN (N/O CONSTRUCTION ZONE)	HUNTLEY	KANE		0	0	0	0	0	0	0	2	2	11200	1992	22.40	09/07/98
WL	WL	WL	WL	WL	WL			ILLINOIS ROUTE 47		AT HARTER STREET	SUGAR GROVE	KANE		1	0	0	0	0	0	0	0	1				05/25/91
WL	WL	WL						ILLINOIS ROUTE 47		AT CONNORS ROAD (N/O)	PLATO TWSP	KANE		0	0	0	0	0	1	0	0	1				05/28/96
WL	174	171	WL	WL	WL			ILLINOIS ROUTE 47		AT BARR ROAD	PLATO TWSP	KANE		0	0	1	0	0	1	0	0	2	5300	1992	10.60	07/18/96
WL	WL	WL						ILLINOIS ROUTE 47	MAIN STREET	AT KESLINGER ROAD	ELBURN	KANE		0	0	0	0	0	1	0	0	1				06/17/96
WL	110	73						ILLINOIS ROUTE 47		AT LAKE ST TO McCONNEL ROAD (C & NW RR)	WOODSTOCK	McHENRY		0	0	0	0	0	3	0	0	3	18000	1997	54.00	08/06/96
WL	WL							ILLINOIS ROUTE 47		AT LEES ROAD (200 FT SOUTH)	LILLY LALE	KANE		0	0	0	0	0	0	1	0	1				02/21/97
WL	WL	WL	WL	WL	WL			ILLINOIS ROUTE 47		AT MILW BRANCH (location undetermined)				0	0	3	0	0	0	0	0	3	NO ADT			06/19/93
WL	WL	WL	WL	WL	158	345		ILLINOIS ROUTE 47		AT BEITH ROAD (S/O)	CAMPTON TWSP	KANE		0	0	2	0	0	0	0	0	2	6300	1992	12.60	01/21/93
WL	WL	WL	WL	137	WL	336		ILLINOIS ROUTE 47	MAIN STREET	AT ILLINOIS ROUTE 38	ELBURN	KANE		1	0	0	1	0	0	0	0	2	7400	1992	14.80	02/19/94
74	81	51	WL	WL	35	147		ILLINOIS ROUTE 47		AT SOO LINE RAILROAD (N/O ILLINOIS 72)	STARKS	KANE	42	0	1	8	1	1	2	0	2	15	6500	1992	97.50	06/27/98
77	104	88	WL	WL	41	37		ILLINOIS ROUTE 47		AT BURLINGTON NORTHERN RR (S/O U S 30)	SUGAR GROVE	KANE		2	1	0	0	0	2	0	3	8	11900	1992	95.20	10/17/98
WL	WL	WL	WL	WL	WL	305		ILLINOIS ROUTE 47		AT U S ROUTE 30	SUGAR GROVE	KANE		1	0	0	0	0	0	0	0	1				06/20/87
WL	WL	WL	WL	136				ILLINOIS ROUTE 47		AT MAIN STREET (south of Elburn)	BLACKBERRY TWSP	KANE		0	0	0	1	0	0	0	0	1				06/24/94
WL	WL	WL						ILLINOIS ROUTE 47		AT SMITH ROAD (GRAVEL PIT)	BLACKBERRY TWSP	KANE		0	0	0	0	0	1	0	0	1				06/17/96
WL	108	110	WL	WL	WL			ILLINOIS ROUTE 47		AT PLATO ROAD	PLATO TWSP	KANE		0	0	1	0	0	2	0	0	3	4900	1992	14.70	06/17/96
WL	WL	WL	WL	WL	WL			ILLINOIS ROUTE 50	CICERO AVENUE	AT 63RD STREET	CHICAGO	COOK		0	1	0	0	0	0	0	0	1				09/09/92
136	163							ILLINOIS ROUTE 50	GOVERNOR'S HIGHWAY	AT OFFNER ROAD/RIDGELAND ROAD (ROCK CR)	MONEE TWSP	WILL		0	0	0	0	0	0	2	0	2	8900	1995	17.80	06/16/97
111	111	WL	WL	142				ILLINOIS ROUTE 50	WALNUT STREET	AT MANHATTAN-MONEE ROAD	MONEE	WILL		0	0	0	1	0	0	1	0	2	5600	1995	11.20	06/16/97
144	175	WL	WL	WL	WL	348		ILLINOIS ROUTE 50	GOVERNOR'S HIGHWAY	AT BEECHER ROAD (N/O @ PEOTONE BLACK TOP)	PEOTONE	WILL		1	0	0	0	0	0	1	0	2	5200	1995	10.40	06/16/97
12	10	23	22	21	73	25	18	ILLINOIS ROUTE 50	CICERO AVENUE	AT CCP RAILROAD (VIADUCT)	CICERO	COOK		4	2	0	2	0	1	1	0	10	47400	1994	474.00	02/21/97
WL	WL	WL	WL	WL	WL			ILLINOIS ROUTE 50	GOVERNOR'S HIGHWAY	AT HORNER AVENUE	UNIVERSITY PARK	WILL		1	0	1	0	0	0	0	0	2	8900	1995	17.80	01/04/93
WL	WL	WL	WL	WL	19	17	10	ILLINOIS ROUTE 50	CICERO AVENUE	AT INTERSTATE ROUTE 55	CHICAGO	COOK		0	1	0	0	0	0	0	0	1				11/10/92
WL	WL	WL						ILLINOIS ROUTE 50	CICERO AVENUE	AT 87TH STREET (MARQUETTE RD)	CHICAGO	COOK		0	0	0	0	0	1	0	0	1				07/17/96
WL	WL	WL						ILLINOIS ROUTE 50	CICERO AVENUE	AT 159TH STREET	COUNTRY CLUB HILLS	COOK		0	0	0	0	0	1	0	0	1				07/18/96
WL	WL	WL	3	2	2	3	2	ILLINOIS ROUTE 50	CICERO AVENUE	AT 156TH STREET (Metra Viaduct)	OAK FOREST	COOK	11	0	1	3	1	0	0	0	0	14	37900	1994	530.60	06/11/94
WL	38	29	47	WL	WL	171		ILLINOIS ROUTE 50	CICERO AVENUE	AT 161ST STREET	OAK FOREST	COOK		3	0	0	0	2	0	0	0	5	35200	1994	176.00	07/09/95
WL	WL	WL	19	19	38	84		ILLINOIS ROUTE 50	CICERO AVENUE	AT OGDEN AVENUE (B N Railroad viaduct)	CICERO	COOK	28	4	0	1	0	0	0	0	0	5	31400	1994	157.00	04/24/93
WL	WL	WL	WL	WL	WL			ILLINOIS ROUTE 50	CICERO AVENUE	AT 119TH STREET	ALSIP	COOK		1	0	0	0	0	0	0	0	1				05/16/91
19	25	27	WL	39	WL	88		ILLINOIS ROUTE 50	CICERO AVENUE	AT KELLER DRIVE (77TH ST) VIADUCT	CHICAGO	COOK		2	0	0	1	0	2	0	1	6	52900	1994	317.40	08/04/98
WL	WL	WL	WL	WL	WL			ILLINOIS ROUTE 53	BALTIMORE STREET	AT WEST RIVER RD (FIFTH ST) & COAL CITY RD	WILMINGTON	WILL		0	1	0	0	0	0	0	0	1				12/31/92

ILLINOIS DEPARTMENT OF TRANSPORTATION
DISTRICT ONE
OPERATIONS AND COMMUNICATIONS CENTER
INCIDENT REPORT

ATE:	DAY:	TIME: AM/PM	INFORMANT:
1/4/97	Saturday	9:35pm	Bridgeview PD #5

UBJECT: Flooding

LOCATION: SB IL 43 @ 79th-80th RL

LOAD AND WEIGHT

*** PUBLIC/MEDIA EMERGENCY INFORMATION DISTRIBUTION***

FOR EACH ENTER TIME OR N/A

CONGESTION LIMITS DUE TO INCIDENT

T

HAR CMS

DOT-INFO EXT#

RINGFIELD NOTIFIED (WHO/TIME)

FAX TO SPFLD. (TIME)

DETAILS AND NOTIFICATIONS IN CHRONOLOGICAL ORDER

IE (AM/PM)

Control was advised of the above by the above.

9:36pm Mr. Rendon (Hillside) notified at his residence.

HICLE INFO:	E.M.C. #
RIVER/OWNER NAME:	PLATE # - STATE:
DDRESS:	CITY: STATE:

PD/ACCIDENT RPT. #

MMERCIAL RPT. (METAL COILS)#:

VERIFIED DATE: 1-4-97 TIME: 1016 AM/PM NAME: RC624 SPECIALIST (INT): AMD

COPIES SENT TO:	OP. COM. SPECIALIST(S)
Fitzgerald, Wang, Sabourin, Fonda	AMD

INCIDENT REPORT
97 - 77

12/27/96 amd

ILLINOIS DEPARTMENT OF TRANSPORTATION
DISTRICT ONE
OPERATIONS AND COMMUNICATIONS CENTER
INCIDENT REPORT

TIME/DATE RECEIVED–	INFORMANT–
20:19 10/31/94	Lucy @ Bridgeview PD

SUBJECT–

Flooding complaint

LOCATION–	LOAD/WEIGHT/TYPE (FOR TRUCKS)
SB Harlem @ 86th St	

PUBLIC/MEDIA EMERGENCY INFORMATION DISTRIBUTION

FOR EACH ENTER TIME OR N/A	CONGESTION LIMITS DUE TO INCIDENT
CRT	
HAR CMS	DOT-INFO EXT#

SPRINGFIELD NOTIFIED (WHO/TIME) FAX TO SPFLD. (TIME)

DETAILS AND NOTIFICATIONS

20:19 Lucy @ Bridgeview PD called Control to report flooding at the above location.
20:30 Control Jerry Owen, Hillside foreman-he will respond.
21:43 Mr. Owen called Control-Water on Pavement signs have been posted.

WEDNESDAY, NOVEMBER 2, 1994
2:43 AM We asked the Hillside Dawn Patrol mobile (RC#631) to check this complaint to see if the water has receeded. RC# 631 advised that the water was already gone last night and the signs were to be removed sometime during the daytime yesterday. (SS)

VEHICLE INFO:	EMC #:	
DRIVER/OWNER NAME:	PLATE #:	STATE:
ADDRESS:	CITY:	STATE:
PD/ACCIDENT RPT. #:		
COMMERCIAL RPT. (METAL COILS) #:		
VERIFIED:		

COPIES SENT TO:	COMMUNICATIONS SPECIALIST(S)
Messrs. Akemann, Fonda, Wang SABOURIN	JMH

INCIDENT REPORT #
94-4172

ILLINOIS DEPARTMENT OF TRANSPORTATION
DISTRICT ONE
OPERATIONS AND COMMUNICATIONS CENTER
INCIDENT REPORT

TIME/DATE RECEIVED–
07:25 hrs. Sunday 2/20/94

INFORMANT–
Bridgeview PD - Vicky

SUBJECT–
Flooding

LOCATION–
Harlem @ 79th

LOAD/WEIGHT/TYPE (FOR TRUCKS)

PUBLIC/MEDIA EMERGENCY INFORMATION DISTRIBUTION

FOR EACH ENTER TIME OR N/A | **CONGESTION LIMITS DUE TO INCIDENT**

CRT

HAR | **CMS** | **DOT–INFO EXT#**

SPRINGFIELD NOTIFIED (WHO/TIME) | **FAX TO SPFLD. (TIME)**

DETAILS AND NOTIFICATIONS

Bridgeview advised Control of flooding at the intersection of 79th & Harlem, there's approximately a foot of water out there restricting traffic to one lane in all directions.

07:27 hrs. Mr. DiJulio @ Hillside advised at his residence.

VEHICLE INFO: | **EMC #:**

DRIVER/OWNER NAME: | **PLATE #:** | **STATE:**

ADDRESS: | **CITY:** | **STATE:**

PD/ACCIDENT RPT. #:

COMMERCIAL RPT. (METAL COILS) #:

VERIFIED: clr. per #622 @ 10:17am 2/20/94 PG

COPIES SENT TO–

Akemann, McDermott, Wang, J. Kos, Sabourin

COMMUNICATIONS SPECIALIST(S)

AMD

INCIDENT REPORT #

94–965

DATE: 11/4/90 DAY: SUNDAY PAGE 1 OF

ITEM	DISP	INFORMANT TIME REC'D	DIR	LOCATION	LANE #S	EST. DEPTH	PASSABLE (Y or N)	CONTACTED	TIME	DURATION OF CLOSURE	VERIFIED (NAME)	TIME/DATE DISP
A	PG	Bridgeview #3 10:55p	S B	Harlem @ 79th	Rt. ln.	10"	N	Klupshas Hillside	11:00 P	0100 2 hrs.	Vince 432	0100 05/[illegible]
B												
C												
D												
E												
F												
G												
H												
I												
J												
K												

CC KLAFETA, KOWALSKI, MURZYN, KOSTUR

90 F – # 0030

Bureau of Maintenance
Flood Location Data

Comm. Center Report Number _____
(Ask Dispatcher)

Location: (Route) IL. 43 (HARLEM AVE.) Municipality CHICAGO RIDGE

Date: 5-28-96 Time notified: 3:30 PM Time at scene: 3:45 PM

Source of notification: _____
(If other than Comm. Center - Notify Comm. Center)

DETAILS OF FLOODED LOCATION

Pavement flooding

Direction NORTHBOUND
Lanes involved LANE 1, 2
Average depth of water SIX INCHES
Length of standing water ≤ 100 FT.
Passable to automobile traffic Yes ✓ No _____

R.O.W. flooding

Shoulder _____ Parkway ✓
Direction SAME
Average depth of water _____
Length of standing water LESS THAN 4 HRS

Apparent cause of flooding I-294 OVERPASS

Corrective measures implemented: SIGNS + BARRICADES

Duration of Closure _____
Name of Reporter JIM TRICH
Phone: 708 448-0050

IOPS Snap-off® CA[illegible]ONLESS FORM 3801 — CARBON REQUIRED

NOTE: Send White and Pink copies. Sender retains Canary copy. TRIPLICATE

TO: Electrical [illegible]
FROM: [illegible]

From: Hydraulic [illegible]
To: [illegible]
By: Santos [illegible]

SUBJECT: Pump Station No. 25 [illegible] @ 73rd Street P.41 138-97

DATE: 9/18/01

MESSAGE: Have [illegible] the [illegible] Hydraulic Report [illegible] for this project, [illegible] sent [illegible] the Pump [illegible] Evaluation Phase [illegible] report [illegible] last week. Please make your review and return [illegible] your comments. We are still reviewing the Hydraulic Report.

SIGNED: [illegible] SMT

DATE: 10/22/01

REPLY: ~~AS PER OUR MEETING LAST FRIDAY 10/19/01, THE CONSULTANT WILL RESUBMIT THE HYDRAULIC REPORT WITH THE REVISED HYDRAULIC DATA.~~

~~PLEASE INFORM THE CONSULTAT TO PROVIDE 2-3 ALTERNATIVES AND THE RECOMMENDATION WILL PROVIDED ADVANTAGE AND DISADVANTAGE TO EACH ALTERNATIVE.~~

ON ONE ALTERNATE, WE SUGGEST TO USE THE EXISTING P.S. CAPACITY WITH 6-7200 GPM THAT INCLUDE THE STANDBY, ALSO INCLUDE THE LOW FLOW PUMP

SIGNED: Danilo [illegible] x-[illegible] 10/22

FORM 3801 LITHO IN U.S.A. SENDER: RETAIN CANARY COPY RECIPIENT: REPLY ON PINK COPY — RETAIN WHITE COPY

Hoefferle-Butler Engineering, Inc.

Consulting Civil Engineers

8714 S. Roberts Road, Hickory Hills, Illinois 60457 (708) 599-8980

LETTER OF TRANSMITTAL

DATE: 8/17/99	JOB NO. 99-900
ATTN.: SHERMAN TUNG	
RE: VILLAGE OF BRIDGEVIEW	
CENTRAL DETENTION POND	
VIA: U.S. POSTAL SERVICE	

TO: ILLINOIS DEPARTMENT OF TRANSPORTATION
DIVISION OF HYDRAULICS
201 W. CENTER CT.
SCHAUMBURG, IL 60196-1096

WE ARE SENDING YOU [X] ATTACHED [ ] UNDER SEPARATE COVER VIA THE

[ ] SHOP [ ] PRINTS [ ] SAMPLES [ ] COPY OF
[ ] SPECIFICATION [ ] CHANGE [ ] PLANS [ ]

COPIES	DATE	NO.	DESCRIPTION
1			MWRD SEWERAGE SYSTEM PERMIT
1			DRAINAGE PLAN TRI-STATE TOLLWAY
1	12/13/91	3	LETTER TO VILLAGE PRES. OREMUS W/ A CONDENSED DRAINAGE REPORT
1			ENGINEERING IMP. PLAN
1	1/20/97		GENERAL DRAINAGE PLAN

THESE ARE TRANSMITTED AS CHECKED BELOW:

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[ ] PRINTS RETURNED AFTER LOAN TO US [ ]

REMARKS: .

COPY TO:

SIGNED: _____
JAMES J. BUTLER, P.E.

IOPS. map-off® **CARBONLESS FORM 3801**

NO CARBON REQUIRED

RAPID LETTER
NOTE: Send White and Pink copies. Sender retains Canary copy.
TRIPLICATE

TO Pete Godowski
Attn: Walter Czarny
Project & Environmental Studies Section

From: S. M. Tung
Hydraulics Section

SUBJECT IL 43 @ 95th Street LDS

DATE 8/22/01

MESSAGE Thank you for pass this local street flooding information to us, We will ask Earth Tech to investigate on it and may be put their finding result into our location drainage study.

cc: Bob McAndrews

SIGNED

DATE

REPLY

SIGNED

IOPS FORM 3801 LITHO IN U.S.A. SENDER: RETAIN CANARY COPY RECIPIENT: REPLY ON PINK COPY — RETAIN WHITE COPY

IL43 @ 95TH - VILLAGE MEETING 8-23-01

SHERMAN,
FYI
ATTACHED IS (1) COMMENT FROM THE VILLAGE MEETING CONCERNING HYDRAULICS (FLOODING).
COULD YOU PLEASE REVIEW AND FORWARD ANY COMMENTS OR IDEAS (IF ANY) TO ME.
THANK YOU WALTER CZARNY

Public Comment

Project: IL 43 (Harlem Avenue) @ 95th Street

Date: August 22, 2001 at Chicago Ridge Village Hall

Thurs. Aug-2-2001

DATE OF HEAVY RAIN FALL

WE EXPERIENCED HEAVY STREET FLOODING WHICH WAS RESULTING IN PART FROM WATER DRAINING/RUNOFF FROM HARLEM AVENUE. THE ENTIRE RESIDENTIAL STREET WAS FLOODED UP TO HOMES.

WE HAVE THIS FLOODED STREET INCIDENT ON VIDEO TAPE.

WE WOULD APPRECIATE SOMEONE CHECKING INTO THE DRAINAGE OF WATER OFF HARLEM AVENUE. PLEASE RESPOND WITH A LETTER ADVISING OF THE ISSUE. OUR STREETS AND SEWERS ARE NOT EQUIPED TO HANDLE THE ADDITIONAL WATER.

Name: GARRY TARABA

Address: 7130 W. 96TH St

OAK LAWN ILL. 60453

ERNEST F. KOLB
Village President

Village Trustees
JERRY HURCKES
MARJORIE ANN JOY
WILLIAM C. KEANE
RONALD M. STANCIK
ROBERT J. STREIT
STEVEN F. ROSENBAUM

A. JAYNE POWER
Village Clerk

9446 S. Raymond Ave.
Oak Lawn, IL 60453
Phone (708) 636-4400

FAX (708) 636-8606

Writer's Direct Dial: 708/499-7816
Writer's Direct FAX: 708/499-7823

August 27, 2001

John P. Kos, P.E., District Engineer
Illinois Department of Transportation
Division of Highways/District 1
Attn: Peter J. Godowski, Project Manager
Bureau of Programming
201 West Center Court
Schaumburg, IL 60196-1096

Re: Illinois Route 43 (Harlem Avenue) @ US Route 12/20 (95th Street)
Interchange Reconstruction

Dear Mr. Godowski:

My sincere thanks to both IDOT staff members and representatives from the project design consultant, Earth Tech, for attending the public information meeting held at the Chicago Ridge Village Hall on Wednesday, August 22, 2001, for the purpose of explaining the above subject project to our residents. I believe that the display of the proposed interchange layout and the project details provided those in attendance with a clear indication of the proposed improvements. I am also confident that the questions and concerns voiced by the residents were answered in a responsive and honest manner. Following is a summary of the comments noted during discussions with our residents, which are being presented for your further review and consideration.

The first area of concern that needs to be addressed, as a result of the proposed project, is the issue of increased traffic noise and safety. According to the calculation sheets provided by IDOT, there will be a dramatic increase in the peak hour traffic volumes for the proposed eastbound 95th Street ramp to north/south bound Harlem Avenue and the proposed north/south bound Harlem Avenue exit ramp to eastbound 95th Street. The increase in traffic volumes is primarily due to the elimination of the northwest and southwest cloverleaf ramps and adding their volumes to the existing northbound Harlem Avenue and eastbound 95th Street ramps. The projected peak hour traffic volumes for these two (2) ramps will nearly double by the year 2020 as a result of combining the peak hour traffic. Residents living adjacent to the southeast and northeast quadrants of the intersection are concerned that the increased traffic will increase noise and place that many more vehicles per day near their homes. These residents have requested that a landscaped noise and vehicle barrier be considered to both control the increased noise levels as a result of the added traffic and to also provide a greater degree of safety from vehicles traveling the ramps adjacent to their rear yards.

Several residents felt that the ramp to eastbound 95th Street could be reconstructed in a new location that would be further away from the rear yards of the homes that abut the existing ramp in its current location. There was a general feeling by these residents that adequate land is available within the IDOT right-of-way to accomplish total reconstruction of the ramp to a location which is north of the existing ramp.

Village residents who live in the northeast quadrant of the intersection have a concern for the close proximity of their houses to the ramp from eastbound 95th Street to north/south bound Harlem Avenue. This concern is especially true when traffic is stopped to wait for the signal located at the top of the ramp as it intersects with Harlem Avenue. On their behalf, we request that a landscaped noise barrier be constructed between this ramp and the homes/residences.

At least one (1) resident expressed their opinion that the vast amount of vacant space within the grade-separated intersection needs to be extensively landscaped, especially along the ramps and viaducts, to create a more pleasant entry into each of the communities that border the intersection.

Another resident theorized that, since the State will be adding two (2) sets of traffic signals on Harlem Avenue, IDOT should also consider another alternate design which would revert the grade-separated intersection back to an at-grade, 4-way, traffic signalized intersection. This type of plan would take away all of the ramps and create more distance between the approaches to intersection and the residential properties.

On August 2, 2001, an unexpected rainstorm deposited approximately 3½" of rainfall within an hour in several communities, including the Village of Oak Lawn. During this event, residents whose yards back up to the interchange ramp embankment for northbound Harlem Avenue to eastbound 95th Street noticed a substantial amount of water cascading down the embankment into their community. They have asked that the State conduct an investigation to determine the source of this runoff and to make sure that the proposed improvements will contain and control any such storm water runoff so it can be properly routed to a State storm sewer outfall.

The final, but certainly not least important, item of concern is the type of roadway lighting that will be selected for installation as part of this improvement. In consideration of the residents whose homes are immediately adjacent to the State right-of-way, the Village asks that the design parameters for the roadway lighting take into account any and all stray lighting patterns that may trespass beyond the right-of-way and impact the tranquility of homes and yards in this neighborhood.

Please include these comments as part of the record for the public meeting. Should you have any questions or need additional information concerning any of the items described above, please do not hesitate to contact the writer at your convenience.

Very truly yours,

Lynn J. Krauss, P.E.
Village Engineer/Director
Depts. of Public Works/Quality Control

LJK/ij
cc: Jerry Hurckes; Trustee, District 1
Joseph J. Faber, Village Manager

dLK?

Illinois Department of Transportation

Memorandum

To:	Patrick J. Pechnick	Attn:	Chin Wang
From:	Jacek Tyszkiewicz		
Subject:	Drainage Study		
Date:	June 21, 2001		

Route: IL 43
Limits: 79th to 87th and CSX RR to Oak Park Ave.
County: Cook

The Hillside Team Section has never had a problem with flooding at the above locations.

If you have any questions or need additional information, please contact me at (847) 705-4187.

By:
Mark R. Jenkins, P.E.
Maintenance Operations Engineer

cc: W. Posvic

S:\WP\IL4379thto 87th.doc

5-00 Appendix D: Supporting Documents

Calculations*

Hydraulic Modeling, Existing Condition
Exhibit 30 – Hydra Schematic/Node Naming System
Exhibit 31 – Summary of Hydra HGL Results, Existing Condition
Exhibit 32 – Summary of Surcharged Storm Sewers and Undersized Storm Sewers, Existing Condition

Hydraulic Modeling, Proposed Condition
Exhibit 36 – Summary of Hydra HGL Results, Proposed Condition
Exhibit 37 – Summary of Surcharged Storm Sewers and Undersized Storm Sewers, Proposed Condition
Exhibit 38 – New Storm Sewer Sizing Calculation

Size and Location of Major Drainage Feature

*NOTE: See Hydraulic Report, revised January 15, 2002, for detailed calculations.

5-00 Appendix D: Supporting Documents

Calculations***

Hydraulic Modeling, Existing Condition
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Exhibit 37 – Summary of Surcharged Storm Sewers and Undersized Storm Sewers, Proposed Condition
Exhibit 38 – New Storm Sewer Sizing Calculation

Size and Location of Major Drainage Feature

***NOTE: See Hydraulic Report, revised February 19, 2002, for detailed calculations.

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

CALCULA

CLIENT IDOT SUBJECT SS

PROJECT HARLEM / 95TH

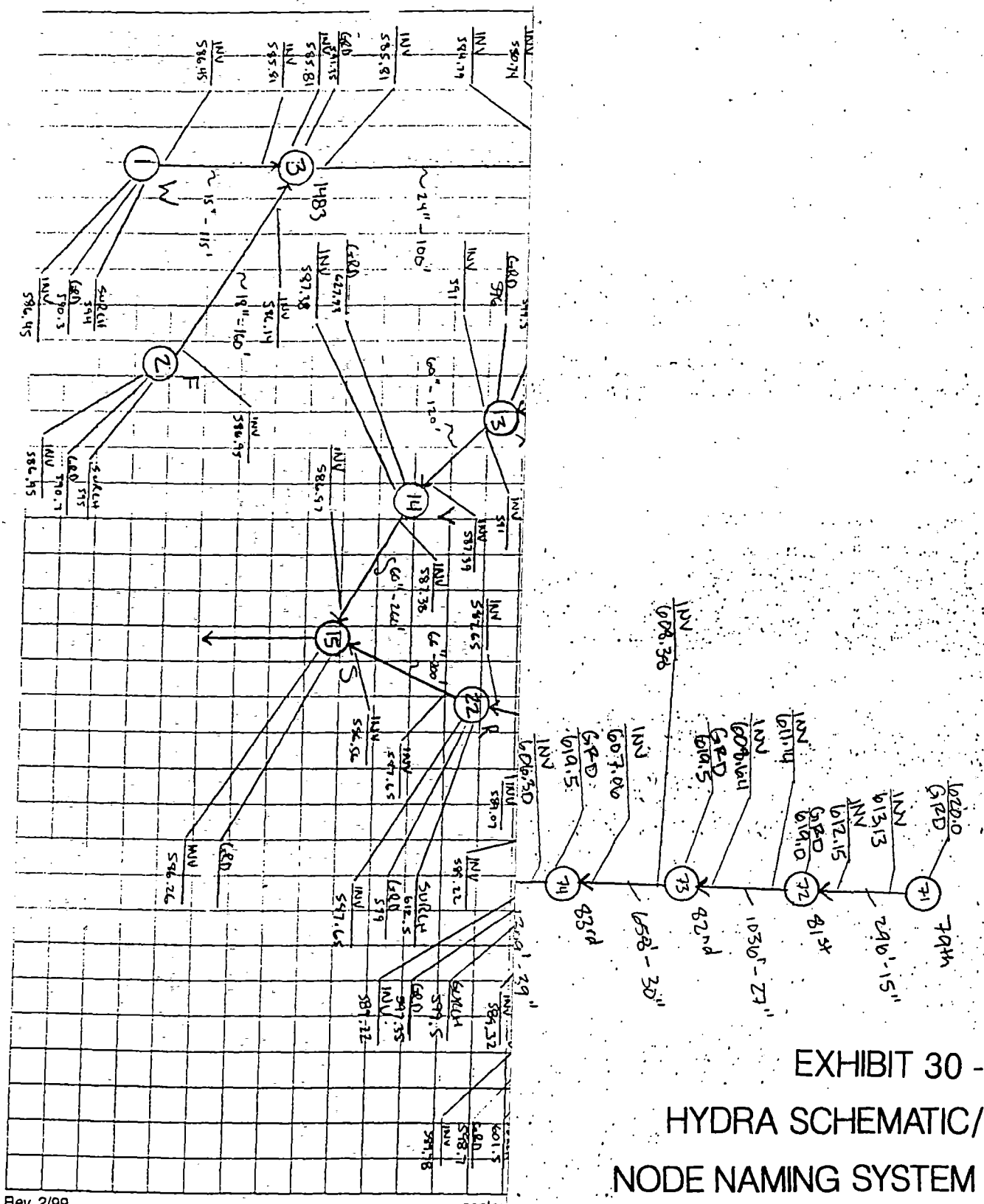


EXHIBIT 30 - HYDRA SCHEMATIC/ NODE NAMING SYSTEM

Rev. 2/99

scale:

E-30.1

Harlem & 95th Street Storm Sewer / Pump Station Analysis

Summary of Link and Node Names from Existing Hydra (Hydrain) Model

Node	Description
1	W
2	F
3	1483
4	UNK1
5	D
6	Wetwell
7	A
8	Y
9	B
10	1424
11	BB
12	Pump
99	Pump
13	X
14	V
15	S
16	C
17	E
18	CC
19	UNK2
20	Z and U
21	UNK3
22	R
24	K
25	L
26	O
27	AA
28	P
29	Q
30	M
31	N
32	DD
33	EE
34	FF
40	Outfall at Stoney Creek
71	79th
72	81st
73	82nd
74	83rd
75	85th
76	87th
77	90th St
78	90th Pl
79	Southland
81	YY

Link	Description
1	W - 1483
2	F - 1483
3	1483 - UNK1
4	D - UNK1
5	UNK-1 - Wetwell
6	YY - Y
7	A - Y
8	Y - 1424
9	DD - B
10	B - 1424
11	1424 - BB
12	BB - Wetwell
13	"dummy" pipe - sum into pump station
1	Disch - X
2	X - V**
3	V - S
4	C - E
5	EE - E
6	E - CC
7	CC - UNK2
8	FF - K
9	79th - 81st
10	81st - 82nd
11	82nd - 83rd
12	83rd - 85th
13	85th - 87th
14	87th - 90th st
15	90th st - 90th pl
16	90th pl - southland
17	southland - K
18	K - UNK2
19	L - UNK2
20	UNK2 - Z
21	Z - UNK3
22	N - AA
23	M - P
24	O-AA
25	AA - P
26	P - Q
27	Q - UNK-3
28	UNK-3 - R
29	R - S
30	S - END

Exhibit 30-Z
Hydra Node Naming

Harlem & 95th Street Storm Sewer / Pump Station Analysis

Correlation between Hydra Nodes, Color Exhibit IDs, and Station/Offsets
Existing Storm Sewer System

Node in Hydra Model	Description on Color Exhibits	Road/Ramp used for Stationing	Station	Offset
1	W	eastbound 95th	705+65	57' Rt.
2	F	westbound 95th	618+09	74' Lt.
3	1483	eastbound 95th	704+60	24' Rt.
4	UNK1	eastbound 95th	703+48	24' Rt.
5	D	westbound 95th	616+03	86' Lt.
6	Wetwell	--	--	--
7	A	westbound 95th	610+41	50' Lt.
8	Y	westbound 95th	611+51	60' Rt.
81	YY	westbound 95th	609+58	46' Rt.
9	B	westbound 95th	613+30	57' Lt.
10	1424	westbound 95th	614+22	6' Rt.
11	BB	westbound 95th	614+69	61' Rt.
12	Pump	--	--	--
99	Pump	--	--	--
13	X	Harlem	314+80	194' Lt.
14	V	Harlem	314+10	103' Rt.
15	S	Harlem	313+45	151' Rt.
16	C	Harlem	324+20	344' Lt.
17	E	Harlem	324+00	215' Lt.
18	CC	Harlem	321+09	102' Lt.
19	UNK2	Harlem	321+08	124' Rt.
20	Z	Harlem	319+39	132' Rt.
21	UNK3	Harlem	317+08	138' Rt.
22	R	Harlem	315+40	142' Rt.
24	K	Harlem	323+19	84' Rt.
25	L	westbound 95th	624+74	109' Lt.
26	O	westbound 95th	635+39	51' Rt.
27	AA	westbound 95th	629+72	93' Rt.
28	P	eastbound 95th	713+73	93' Rt.
29	Q	Harlem	317+51	302' Rt.
30	M	westbound 95th	626+30	25' Lt.
31	N	westbound 95th	628+66	158' Lt.
32	DD	westbound 95th	613+40	166' Lt.
33	EE	Harlem	325+74	206' Lt.
34	FF	Harlem	325+33	181' Rt.

Exhibit 30.3
Node Naming System

Harlem & 95th Street Storm Sewer / Pump Station Analysis

Correlation between Hydra Nodes, Color Exhibit IDs, and Station/Offsets
Proposed Storm Sewer System

Node in Hydra Model	Description on Color Exhibits	Road/Ramp used for Stationing	Station	Offset
1	W	eastbound 95th	705+65	56' Rt.
2	F	westbound 95th	618+09	74' Lt.
3	1483	eastbound 95th	704+60	45' Rt.
4	UNK1	eastbound 95th	703+48	45' Rt.
5	D	westbound 95th	616+03	86' Lt.
6	Wetwell	--	--	--
7	A	westbound 95th	610+41	50' Lt.
8	Y	westbound 95th	611+51	60' Rt.
81	YY	westbound 95th	609+58	46' Rt.
9	B	westbound 95th	613+30	57' Lt.
10	1424	westbound 95th	614+22	6' Rt.
11	BB	westbound 95th	614+69	61' Rt.
12	Pump	--	--	--
99	Pump	--	--	--
13	X	Harlem	314+80	194' Lt.
14	V	Harlem	314+10	103' Rt.
15	S	Harlem	313+45	151' Rt.
16	C	Harlem	324+20	344' Lt.
17	E	Harlem	324+00	215' Lt.
18	CC	Harlem	321+09	102' Lt.
--	NEW	westbound 95th	619+25	80' Lt.
19	UNK2	Harlem	321+08	124' Rt.
20	Z	Harlem	319+39	132' Rt.
21	UNK3	Harlem	317+08	138' Rt.
22	R	Harlem	315+40	142' Rt.
24	K	Harlem	323+19	84' Rt.
--	K1	Harlem	323+25	80' Rt.
25	L	westbound 95th	624+74	109' Lt.
26	O	westbound 95th	635+39	51' Rt.
27	AA	westbound 95th	629+72	93' Rt.
28	P	eastbound 95th	713+73	93' Rt.
29	Q	Harlem	317+51	302' Rt.
30	M	westbound 95th	626+30	25' Lt.
31	N	westbound 95th	628+66	158' Lt.
32	DD	westbound 95th	613+40	166' Lt.
33	EE	Harlem	325+74	206' Lt.
34	FF	Harlem	325+33	181' Rt.

Exhibit 30,4
Node Naming System

Harlem & 95th Street Storm Sewer / Pump Station Analysis

Summary of Hydra HGL Results, Existing Condition

		U/S*	D/S	50-yr storm, 10-yr TWE		100-yr storm, 10-yr TWE	
Link	**Description**	Rim Elev.	Rim Elev.	u/s	d/s	u/s	d/s
1	W - 1483	590	591.35	596.77	591.39	598.52	591.84
2	F - 1483	590.70	591.35	592.06	591.44	592.66	591.89
3	1483 - UNK1	591.35	590.50	591.44	590.13	591.89	590.27
4	D - UNK1	586.00	590.50	583.64	581.51	583.73	581.56
5	UNK-1 - Wetwell	590.50	599.00	581.51	588.91	581.56	589.05
6	YY-Y	593.50	586.86	595.19	593.34	595.38	593.49
7	A - Y	587.00	586.86	595.22	593.34	595.43	593.49
8	Y - 1424	586.86	586.52	593.34	590.52	593.49	590.71
9	DD - B	603.50	587.00	609.36	581.67	609.93	581.71
10	B - 1424	587.00	586.52	581.67	590.52	581.71	590.71
11	1424 - BB	586.52	585.30	590.52	589.81	590.71	589.97
12	BB - Wetwell	585.30	599.00	589.81	588.97	589.97	589.08
13	"dummy" pipe - sum into pump station	599.00	599.00	588.97	587.5	589.08	587.5
1	Disch - X	600.00	596.00	598.19	597.51	598.19	597.51
2	X - V**	596.00	627.93	597.51	589.97	597.51	589.97
3	V - S	627.93	599.16	589.97	594.57	589.97	595.46
4	C - E	600.01	596.94	597.62	594.45	597.7	594.49
5	EE - E	601.50	596.94	599.94	594.54	600.09	594.58
6	E - CC	596.94	611.78	594.54	596.94	594.58	597.03
7	CC - UNK2	611.78	604.73	596.94	596.75	597.03	596.82
8	FF - K	604.80	602.08	605.03	597.06	605.26	597.13
9	79th - 81st	620.00	619.00	614.31	612.60	614.35	612.65
10	81st - 82nd	619.00	619.50	612.6	610.01	612.65	610.12
11	82nd - 83rd	619.50	619.50	610.01	608.52	610.12	608.67
12	83rd - 85th	619.50	620.00	608.52	607.01	608.67	607.14
13	85th - 87th	620.00	618.50	607.01	606.45	607.14	606.58
14	87th - 90th st	618.50	618.00	606.45	605.19	606.58	605.3
15	90th st - 90th pl	618.00	615.00	605.19	603.83	605.3	603.96
16	90th pl - southland	615.00	615.00	603.83	602.56	603.96	602.78
17	southland - K	615.00	602.08	602.56	597.89	602.78	598.19
18	K - UNK2	602.08	604.73	597.89	593.95	598.19	594.15
19	L - UNK2	597.76	604.73	598.41	596.76	598.88	596.84
20	UNK2 - Z	604.73	601.17	596.76	596.43	596.84	596.43
21	Z - UNK3	601.17	601.17	596.43	593.65	596.43	593.92
22	N - AA	597.00	601.45	596.42	595.54	597.08	595.98
23	M - P	598.20	598.70	596.07	593.76	596.17	593.81
24	O-AA	600.90	601.45	595.89	595.57	596.34	596.01
25	AA - P	601.45	598.70	595.57	595.04	596.01	595.44
26	P - Q	598.70	597.35	595.04	594.49	595.44	594.84
27	Q - UNK-3	597.35	601.17	594.49	593.65	594.84	593.92
28	UNK-3 - R	601.17	599.00	593.65	591.10	593.92	591.29
29	R - S	599.00	599.16	591.10	590.03	591.29	590.22
30	S - END	599.16	591.40	590.03	589.30	590.22	589.3

Note: The HGL of links 6, 7, and 8 upstream of the pump station has been adjusted. Hydra calculated a HGL at node 1424 at the downstream end of link 8 which was lower than the HGL at node 1424 at the upstream end of link 11. Links 6, 7 and 8 have been adjusted to reflect the higher HGL.

Exhibit 31
Summary of
Hydra HGL Results,
Existing Condition

Harlem & 95th Street Storm Sewer / Pump Station Analysis

Summary of Surcharged Storm Sewers and Undersized Storm Sewers from Hydra (Hydrain) Model for Existing Condition

		U/S	D/S	50-y HGL, 10-yr TWE		Freeboard		Surcharged?		Pipe Undersized for
Link	**Description**	Rim Elev.	Rim Elev.	u/s	d/s	u/s	d/s	u/s	d/s	Gravity Flow?
1	W - 1483	590	591.35	596.77	591.39	-6.77	-0.04	y	y	
2	F - 1483	590.70	591.35	592.06	591.44	-1.36	-0.09	y	y	
3	1483 - UNK1	591.35	590.50	591.44	590.13	-0.09	0.37	y	y	
4	D - UNK1	586.00	590.50	583.64	581.51	2.36	8.99	y		
5	UNK-1 - Wetwell	590.50	599.00	581.51	588.91	8.99	10.09		y	
6	YY-Y	593.50	586.86	595.19	593.34	-1.69	-6.48	y	y	
7	A - Y	587.00	586.86	595.22	593.34	-8.22	-6.48	y	y	
8	Y - 1424	586.86	586.52	593.34	590.52	-6.48	-4	y	y	
9	DD - B	603.50	587.00	609.36	581.67	-5.86	5.33	y	y	
10	B - 1424	587.00	586.52	581.67	590.52	5.33	-4	y	y	yes, see note 1
11	1424 - BB	586.52	585.30	590.52	589.81	-4	-4.51	y	y	
12	BB - Wetwell	585.30	599.00	589.81	588.97	-4.51	10.03	y	y	
13	"dummy" pipe - sum into pump station	599.00	599.00	588.97	587.5	10.03	11.5	y	y	
1	Disch - X	600.00	596.00	598.19	597.51	1.81	-1.51	y	y	
2	X - V**	596.00	627.93	597.51	589.97	-1.51	37.96	y		see note 3
3	V - S	627.93	599.16	589.97	594.57	37.96	4.59		y	
4	C - E	600.01	596.94	597.62	594.45	2.39	2.49	y		
5	EE - E	601.50	596.94	599.94	594.54	1.56	2.40			
6	E - CC	596.94	611.78	594.54	596.94	2.40	14.84		y	
7	CC - UNK2	611.78	604.73	596.94	596.75	14.84	7.98	y	y	see note 3
8	FF - K	604.80	602.08	605.03	597.06	-0.23	5.02	y		see note 3
9	79th - 81st	620.00	619.00	614.31	612.60	5.69	6.40			
10	81st - 82nd	619.00	619.50	612.60	610.01	6.40	9.49			
11	82nd - 83rd	619.50	619.50	610.01	608.52	9.49	10.98			
12	83rd - 85th	619.50	620.00	608.52	607.01	10.98	12.99			
13	85th - 87th	620.00	618.50	607.01	606.45	12.99	12.05		y	
14	87th - 90th st	618.50	618.00	606.45	605.19	12.05	12.81		y	

Exhibit 32
Summary of Surcharged Storm Sewers and Undersized Storm Sewers, Existing Condition

		U/S	D/S	50-y HGL, 10-yr TWE		Freeboard		Surcharged?		Pipe Undersized for
Link	**Description**	Rim Elev.	Rim Elev.	u/s	d/s	u/s	d/s	u/s	d/s	Gravity Flow?
15	90th st - 90th pl	618.00	615.00	605.19	603.83	12.81	11.17	y	y	
16	90th pl - southland	615.00	615.00	603.83	602.56	11.17	12.44	y		
17	southland - K	615.00	602.08	602.56	597.89	12.44	4.19	y		
18	K - UNK2	602.08	604.73	597.89	593.95	4.19	10.78			see note 3
19	L - UNK2	597.76	604.73	598.41	596.76	-0.65	7.97	y	y	yes, see note 2
20	UNK2 - Z	604.73	601.17	596.76	596.43	7.97	4.74			
21	Z - UNK3	601.17	601.17	596.43	593.65	4.74	7.52			
22	N - AA	597.00	601.45	596.42	595.54	0.58	5.91	y	y	
23	M - P	598.20	598.70	596.07	593.76	2.13	4.94	y		
24	O-AA	600.90	601.45	595.89	595.57	5.01	5.88	y	y	
25	AA - P	601.45	598.70	595.57	595.04	5.88	3.66	y	y	yes, inc. to 54"
26	P - Q	598.70	597.35	595.04	594.49	3.66	2.86	y	y	yes, inc. to 54"
27	Q - UNK-3	597.35	601.17	594.49	593.65	2.86	7.52	y	y	yes, inc. to 60"
28	UNK-3 - R	601.17	599.00	593.65	591.10	7.52	7.90			see note 3
29	R - S	599.00	599.16	591.1	590.03	7.90	9.13			see note 3
30	S - END	599.16	591.40	590.03	589.30	9.13	2.10		y	

Note 1: The storm sewer between B and 1424 has a negative slope, and so it does not convey via gravity flow. The upstream end of the pipe at B can be raised to meet the invert of the pipe flowing into B. This will provide adequate positive slope, and the sewer from B - 1424 will convey via gravity flow.

Note 2: The slope of the storm sewer between UNK-2 and Z can be decreased and the slope of the storm sewer between L and UNK-2 can be increased to provide conveyance via gravity flow in the sewer between L and UNK-2.

Note 3: The slopes of these sewers are adjusted to meet the velocity criteria.

Exhibit 32
Summary of Surcharged Storm Sewers and
Undersized Storm Sewers, Existing Condition

Harlem & 95th Street Storm Sewer / Pump Station Analysis

Summary of Hydra HGL Results, Proposed Condition

Link	Description	U/S Rim Elev.	D/S Rim Elev.	50-yr storm u/s	50-yr storm d/s	50-yr storm u/s	50-yr storm d/s	50-yr storm u/s	50-yr storm d/s
				Alternative 1 & 2*		Alternative 3a		Alternative 3b	
1	W - 1483	590.00	591.35	587.96	587.37	587.96	587.37	587.96	587.37
2	F - 1483	590.70	591.35	588.20	587.37	588.20	587.37	588.20	587.37
3	1483 - UNK1	591.35	590.50	587.37	585.82	587.37	585.82	587.37	585.82
4	D - UNK1	586.00	590.50	583.20	581.27	585.70	582.51	583.20	581.27
5	UNK-1 - Wetwell	590.50	599.00	581.27	581.04	582.51	581.91	581.27	581.04
6	YY-Y	593.50	586.86	587.79	585.96	588.66	586.83	589.16	587.33
7	A - Y	587.00	586.86	587.84	585.96	588.71	586.83	589.97	587.33
8	Y - 1424	586.86	586.52	585.96	583.14	586.83	583.90	587.33	584.37
9	DD - B	603.50	587.00	609.36	581.67	609.36	581.67	609.36	581.67
10	B - 1424	587.00	586.52	581.67	583.14	581.67	583.90	581.67	584.37
11	1424 - BB	586.52	585.30	583.14	582.50	583.90	583.25	584.37	583.55
12	BB - Wetwell	585.30	599.00	582.50	581.77	583.25	582.52	583.55	582.64
13	"dummy" pipe - sum into pump station	599.00	599.00	581.77	580.42	582.52	580.86	582.64	580.97
				50-yr Alts 1, 2, 3a and 3b					
1	Disch - X	600.00	596.00	595.80	595.50				
2	X - V**	596.00	627.93	595.50	594.12				
3	V - S	627.93	599.16	594.12	593.47				
4	C - E	600.01	596.94	596.48	593.85				
5	EE - E	601.50	596.94	599.94	594.54				
6	E - CC	596.94	611.78	594.54	597.93				
7	CC - UNK2	611.78	604.73	597.93	597.69				
8	FF - K	604.80	602.08	601.85	597.06				
9	79th - 81st	620.00	619.00	614.31	612.60				
10	81st - 82nd	619.00	619.50	612.60	610.01				
11	82nd - 83rd	619.50	619.50	610.01	608.52				
12	83rd - 85th	619.50	620.00	608.52	607.01				
13	85th - 87th	620.00	618.50	607.01	606.48				
14	87th - 90th st	618.50	618.00	606.48	605.19				
15	90th st - 90th pl	618.00	615.00	605.19	603.83				
16	90th pl - southland	615.00	615.00	603.83	602.56				
17	southland - K	615.00	602.08	602.56	598.52				
18	K - UNK2	602.08	604.73	598.52	597.72				
19	L - UNK2	597.76	604.73	599.36	597.72				
20	UNK2 - Z	604.73	601.17	597.72	597.28				
21	Z - UNK3	601.17	601.17	597.28	596.58				
22	N - AA	597.00	601.45	599.72	598.32				
23	M - P	598.20	598.70	596.07	593.76				
24	O-AA	600.90	601.45	598.66	598.34				
25	AA - P	601.45	598.70	598.34	597.88				
26	P - Q	598.70	597.35	597.88	597.27				
27	Q - UNK-3	597.35	601.17	597.27	596.58				
28	UNK-3 - R	601.17	599.00	596.58	594.99				
29	R - S	599.00	599.16	594.99	593.54				
30	S - END	599.16	591.40	593.54	589.30				

Notes:

1. Values given for 50-yr storm upstream for Alt 1 reflects a discharge to a wetwell HWL of 580.3. Alt 2 discharges to a wetwell HWL of 580.1, and therefore would produce a hydraulic grade line equal to or lower than Alt 1.

2. Values given for 100-yr storm upstream of the wetwell reflect Alt 2, which discharges to a wetwell HWL = 581.2. Alt 1 discharges to wetwell HWL = 580.1, and therefore would produce values equal to or lower than those for Alt 2.

3. The HGL of links 6, 7, and 8 upstream of the pump station has been adjusted. Hydra calculated a HGL at node 1424 at the downstream end of link 8 which was lower than the HGL at node 1424 at the upstream end of link 11. Links 6, 7 and 8 have been adjusted to reflect the higher HGL.

Exhibit 36
Summary of Hydra HGL Results
Proposed Condition

Harlem & 95th Street Storm Sewer

Summary of Hydra HGL Results, Proposed Condition

Link	Description	U/S Rim Elev.	D/S Rim Elev.	100-yr storm u/s	100-yr storm d/s	100-yr storm u/s	100-yr storm d/s	100-yr storm u/s	100-yr storm d/s
				Alternatives 1 & 2*		Alternative 3a		Alternative 3b	
1	W - 1483	590.00	591.35	588.11	587.06	588.11	587.47	588.11	587.47
2	F - 1483	590.70	591.35	588.28	587.64	588.28	587.47	588.28	587.47
3	1483 - UNK1	591.35	590.50	587.64	586.79	587.47	585.88	587.47	585.88
4	D - UNK1	586.00	590.50	583.25	581.99	587.44	583.32	587.44	581.30
5	UNK-1 - Wetwell	590.50	599.00	581.99	582.50	583.32	583.43	581.30	581.10
6	YY-Y	593.50	586.86	585.71	584.59	589.68	587.82	591.76	589.90
7	A - Y	587.00	586.86	584.95	584.50	589.76	587.82	591.84	589.90
8	Y - 1424	586.86	586.52	584.50	581.32	587.82	584.96	589.90	587.04
9	DD - B	603.50	587.00	609.93	581.80	609.93	581.71	609.93	581.71
10	B - 1424	587.00	586.52	581.80	581.32	581.71	584.96	581.71	587.04
11	1424 - BB	586.52	585.30	581.32	582.12	584.96	584.22	587.04	585.54
12	BB - Wetwell	585.30	599.00	582.12	582.27	584.22	583.43	585.54	583.90
13	"dummy" pipe - sum into pump station	599.00	599.00	582.27	581.2	583.43	581.44	583.9	581.8
				100-yr storm, 10-yr TWE, Alts 1 & 2		100-yr storm, 10-yr TWE, Alternative 3a		100-yr storm, 10-yr TWE, Alternative 3b	
1	Disch - X	600.00	596.00	595.82	595.51	596.96	596.42	597.57	596.89
2	X - V**	596.00	627.93	595.51	594.90	596.42	595.72	596.89	596.14
3	V - S	627.93	599.16	594.90	594.24	595.72	594.96	596.14	585.34
4	C - E	600.01	596.94	596.49	593.86	596.49	593.86	596.49	593.86
5	EE - E	601.50	596.94	600.09	594.58	600.09	594.58	600.09	584.58
6	E - CC	596.94	611.78	594.58	598.94	594.58	599.69	584.58	600.09
7	CC - UNK2	611.78	604.73	598.94	598.67	599.69	599.42	600.09	599.81
8	FF - K	604.80	602.08	602.03	597.13	602.03	597.13	602.03	597.13
9	79th - 81st	620.00	619.00	614.35	612.65	614.35	612.65	614.35	612.65
10	81st - 82nd	619.00	619.50	612.65	610.12	612.65	610.12	612.65	610.12
11	82nd - 83rd	619.50	619.50	610.12	608.67	610.12	608.67	610.12	608.67
12	83rd - 85th	619.50	620.00	608.67	607.14	608.67	607.14	608.67	607.14
13	85th - 87th	620.00	618.50	607.14	606.58	607.14	606.58	607.14	606.58
14	87th - 90th st	618.50	618.00	606.58	605.30	606.58	605.30	606.58	605.29
15	90th st - 90th pl	618.00	615.00	605.30	603.96	605.30	603.96	605.29	604.15
16	90th pl - southland	615.00	615.00	603.96	602.56	603.96	602.94	604.15	603.33
17	southland - K	615.00	602.08	602.56	599.54	602.94	600.28	603.33	600.68
18	K - UNK2	602.08	604.73	599.54	598.69	600.28	599.44	600.68	599.83
19	L - UNK2	597.76	604.73	600.73	598.69	601.48	599.44	601.87	599.83
20	UNK2 - Z	604.73	601.17	598.69	598.24	599.44	598.99	599.83	599.38
21	Z - UNK3	601.17	601.17	598.24	597.49	598.99	598.23	599.38	598.62
22	N - AA	597.00	601.45	600.42	599.33	601.16	600.07	601.55	600.46
23	M - P	598.20	598.70	596.17	593.81	596.17	593.81	596.17	593.81
24	O-AA	600.90	601.45	599.67	599.34	600.41	600.08	600.79	600.47
25	AA - P	601.45	598.70	599.34	598.88	600.08	599.62	600.47	600.01
26	P - Q	598.70	597.35	598.88	598.27	599.62	599.01	600.01	599.40
27	Q - UNK-3	597.35	601.17	598.27	597.57	599.01	598.30	599.40	598.69
28	UNK-3 - R	601.17	599.00	597.57	595.83	598.30	596.57	598.69	596.95
29	R - S	599.00	599.16	595.83	594.32	596.57	595.04	596.95	595.42
30	S - END	599.16	591.40	594.32	589.30	595.04	589.30	595.42	589.30

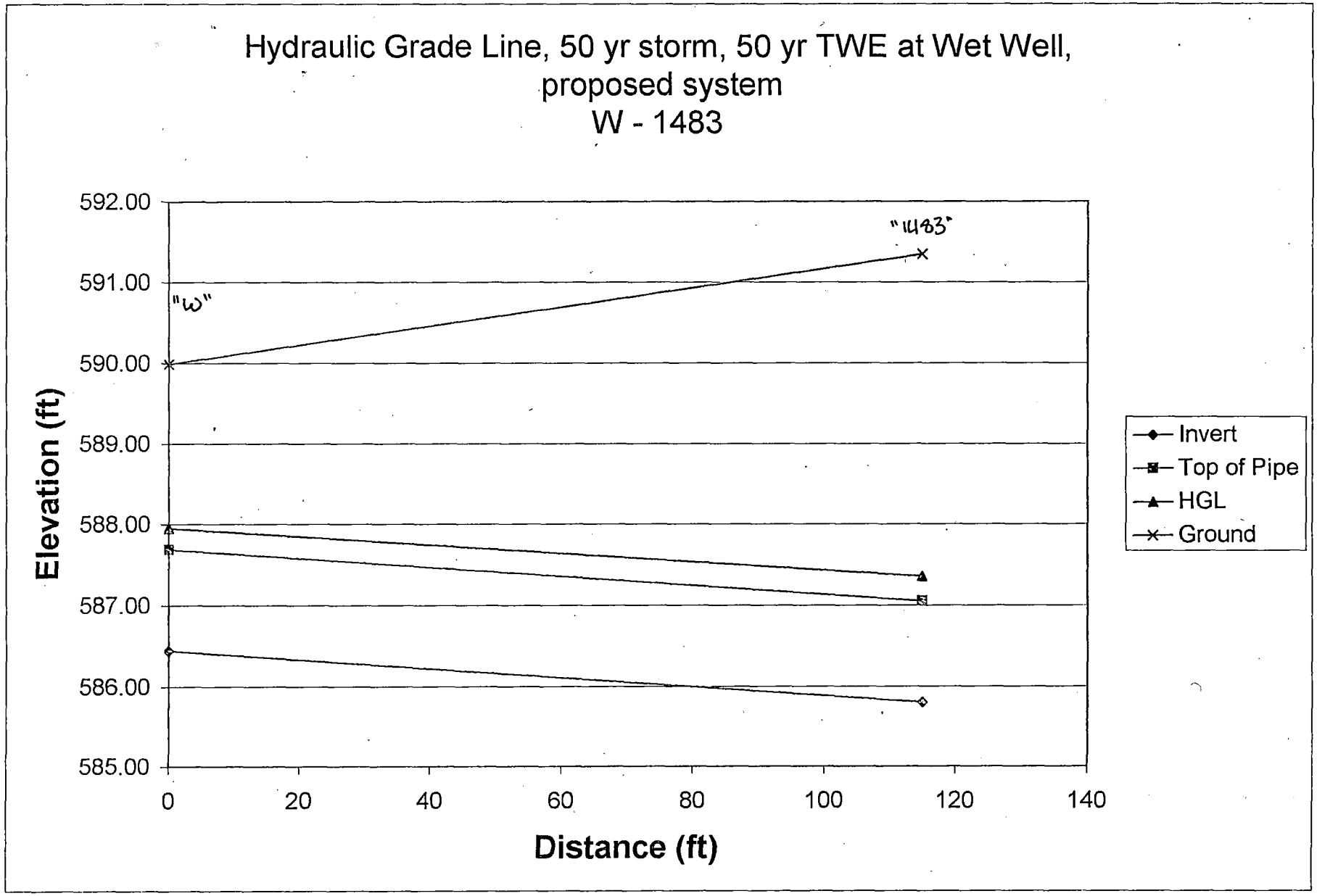
Notes:

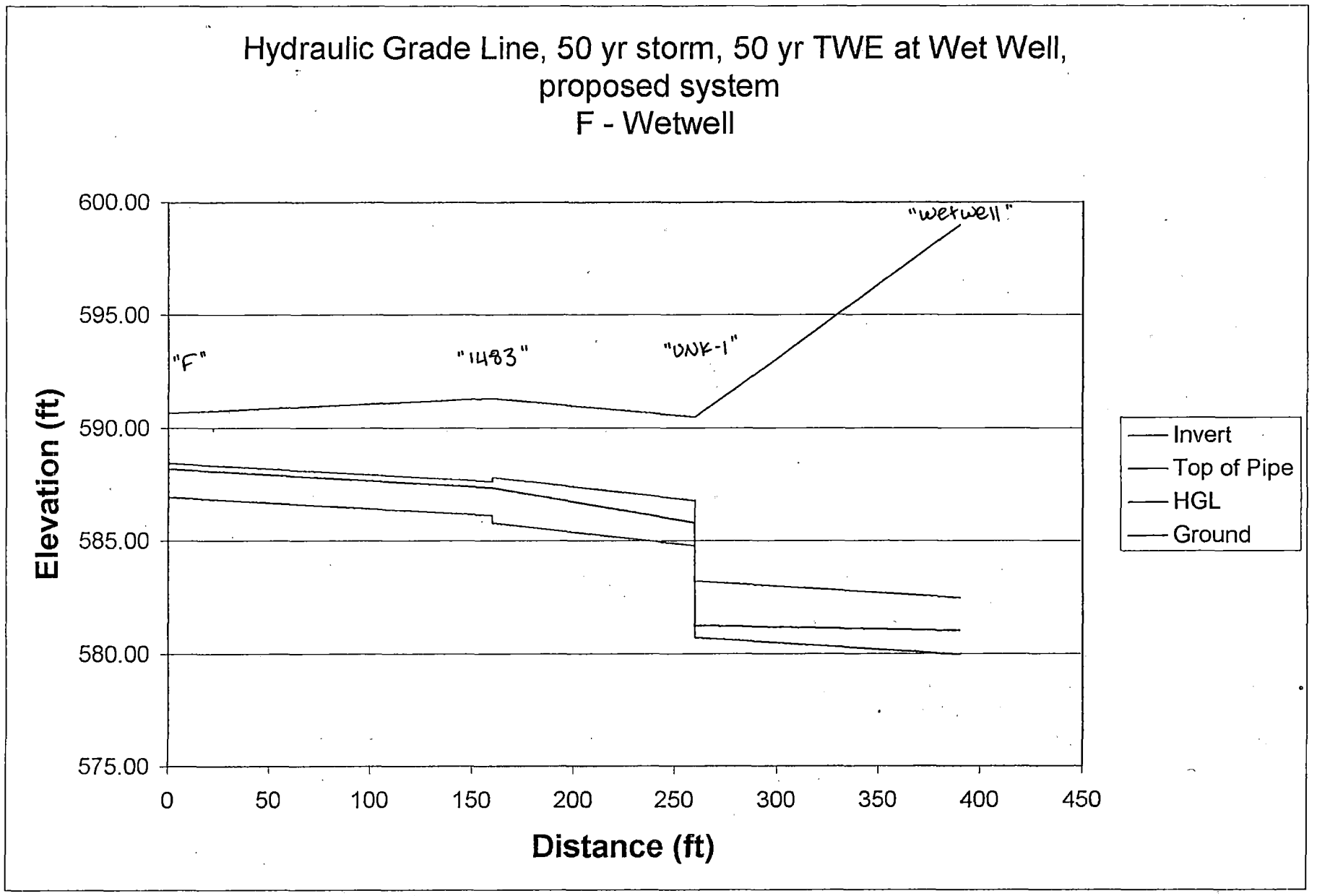
1. Values given for 50-yr storm upstream for Alt 1 refle wetwell HWL of 580.1, and therefore would produce a h

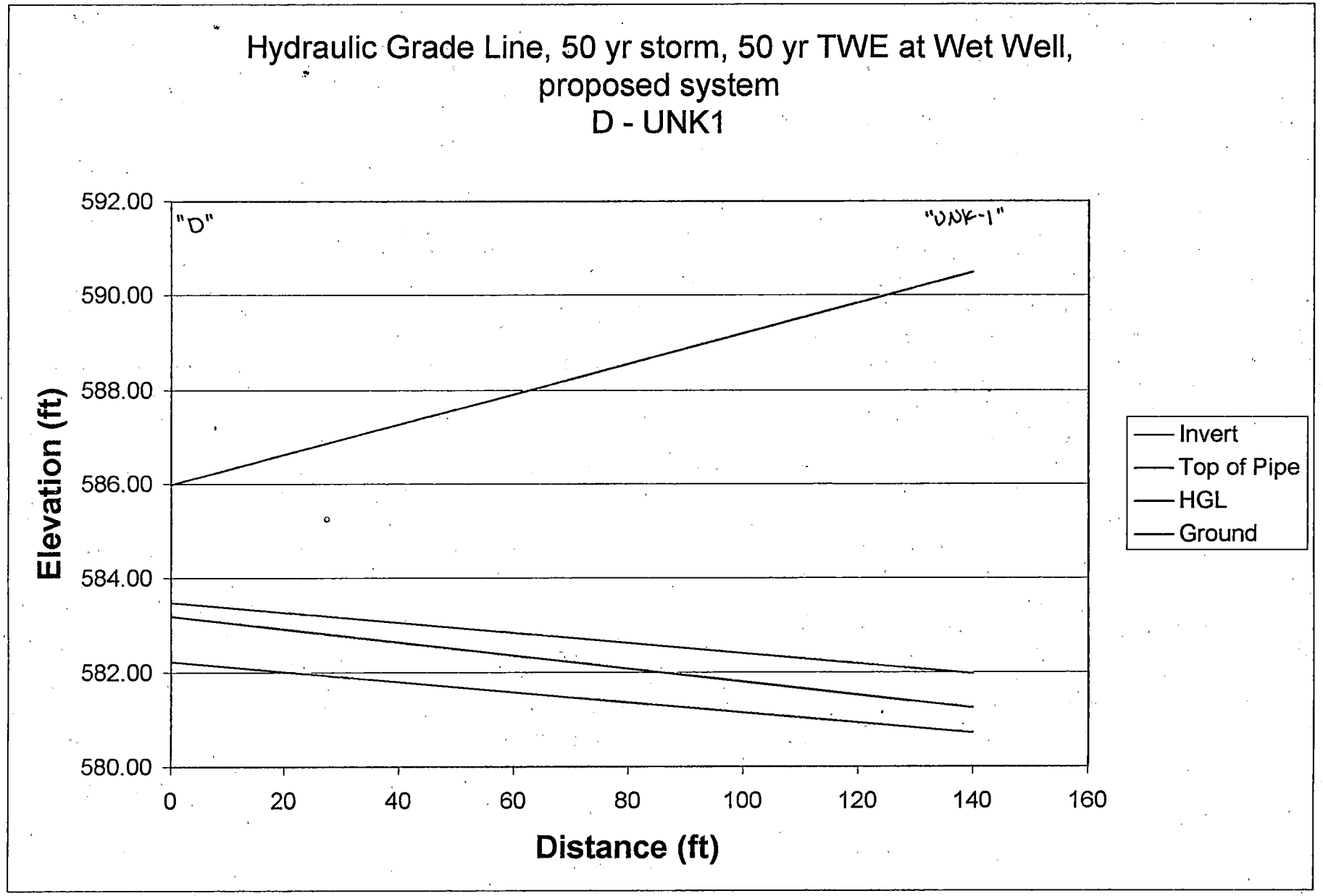
2. Values given for 100-yr storm upstream of the wetw discharges to wetwell HWL = 580.1, and therefore wou

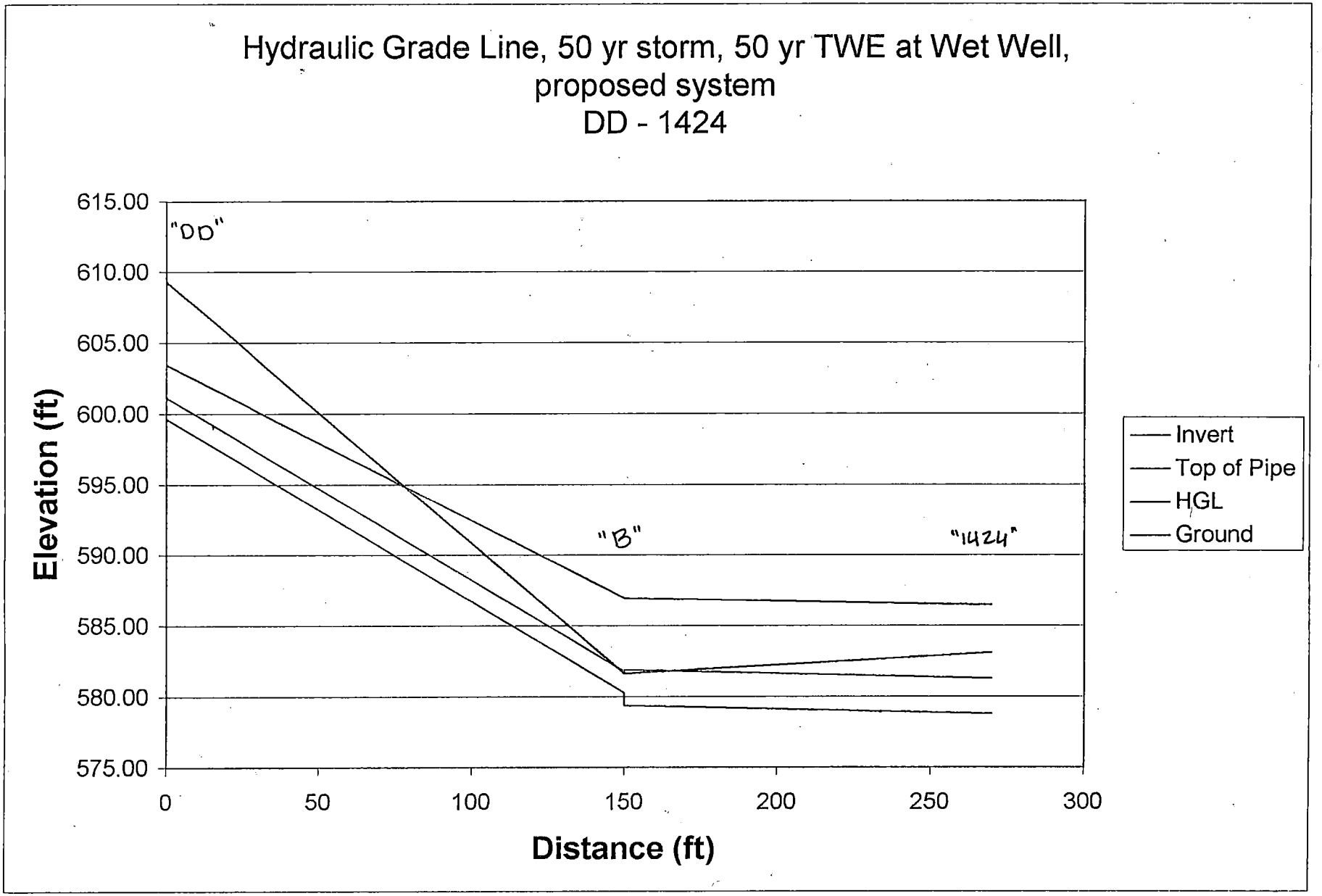
3. The HGL of links 6, 7, and 8 upstream of the pump downstream end of link 8 which was lower than the HG been adjusted to reflect the higher HGL.

Exhibit 36
Summary of Hydra HGL Results
Proposed Condition

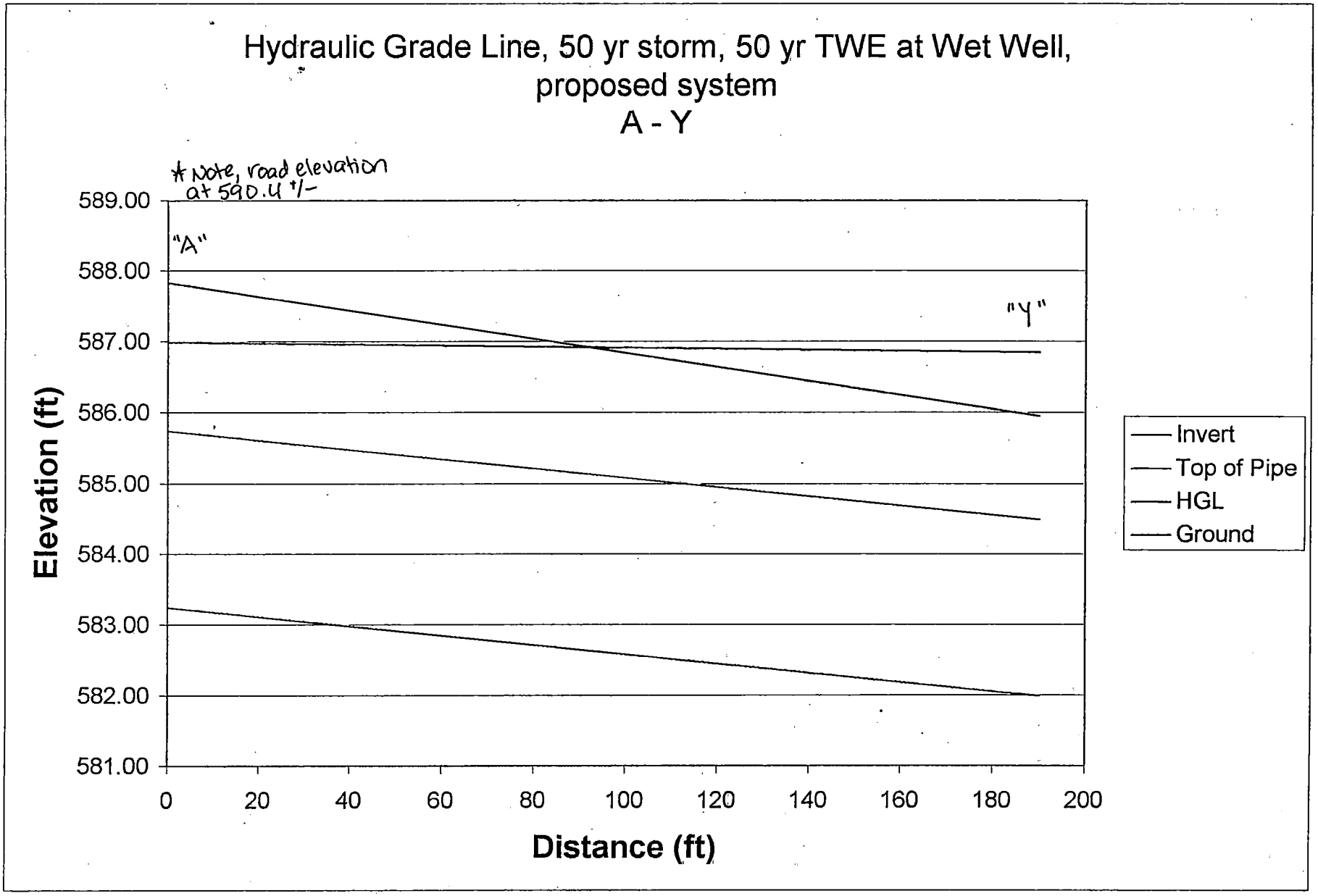

Hydraulic Grade Line, 50 yr storm, 50 yr TWE at Wet Well, proposed system
W - 1483
592.00
591.00
590.00
589.00
588.00
587.00
586.00
585.00
Elevation (ft)
0
20
40
60
80
100
120
140
Distance (ft)
"W"
"1483"
Invert
Top of Pipe
HGL
Ground

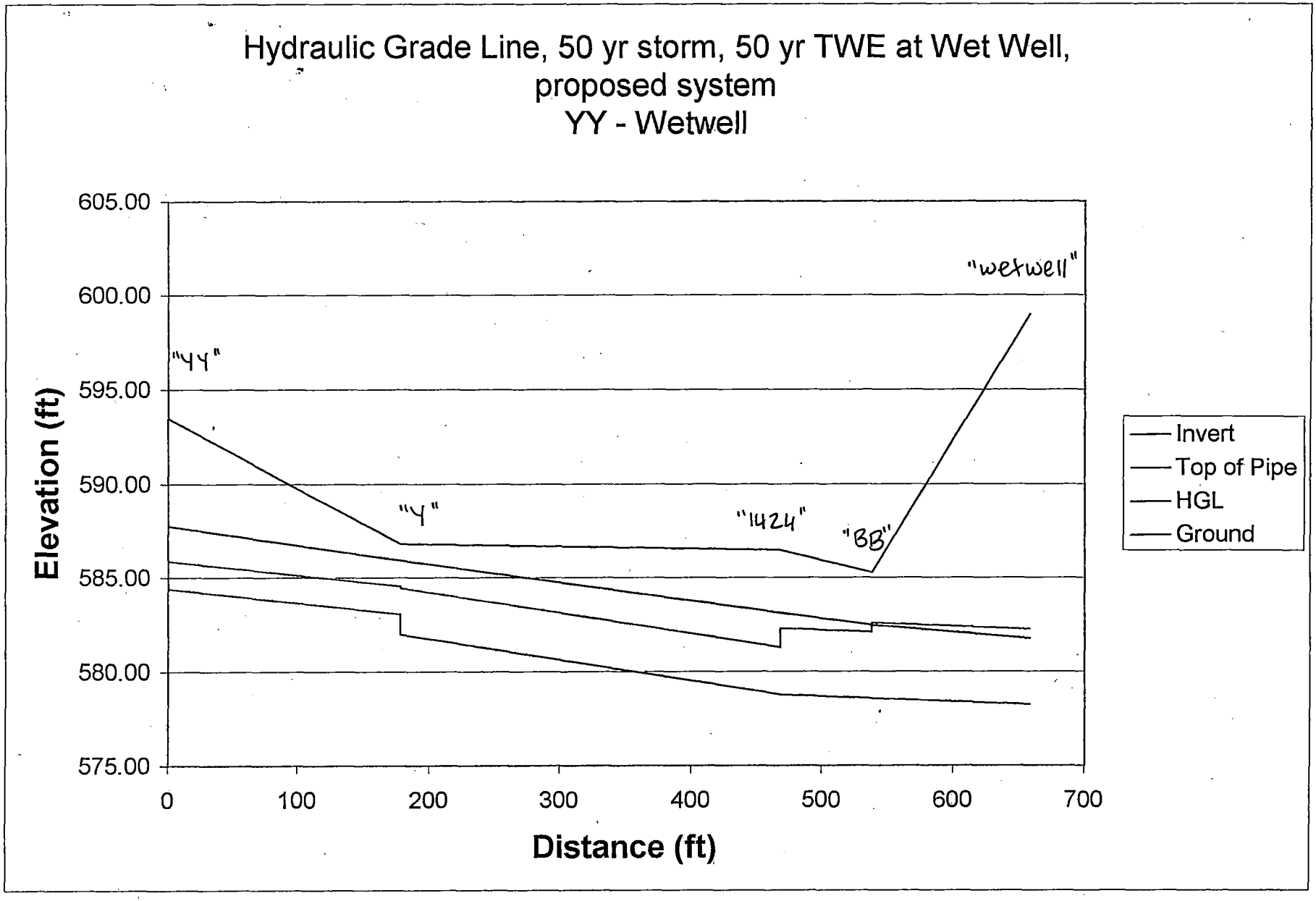

Hydraulic Grade Line, 50 yr storm, 50 yr TWE at Wet Well,
proposed system
F - Wetwell
600.00
595.00
590.00
585.00
580.00
575.00
Elevation (ft)
"F"
"1483"
"DNF-1"
"wetwell"
0
50
100
150
200
250
300
350
400
450
Distance (ft)
Invert
Top of Pipe
HGL
Ground

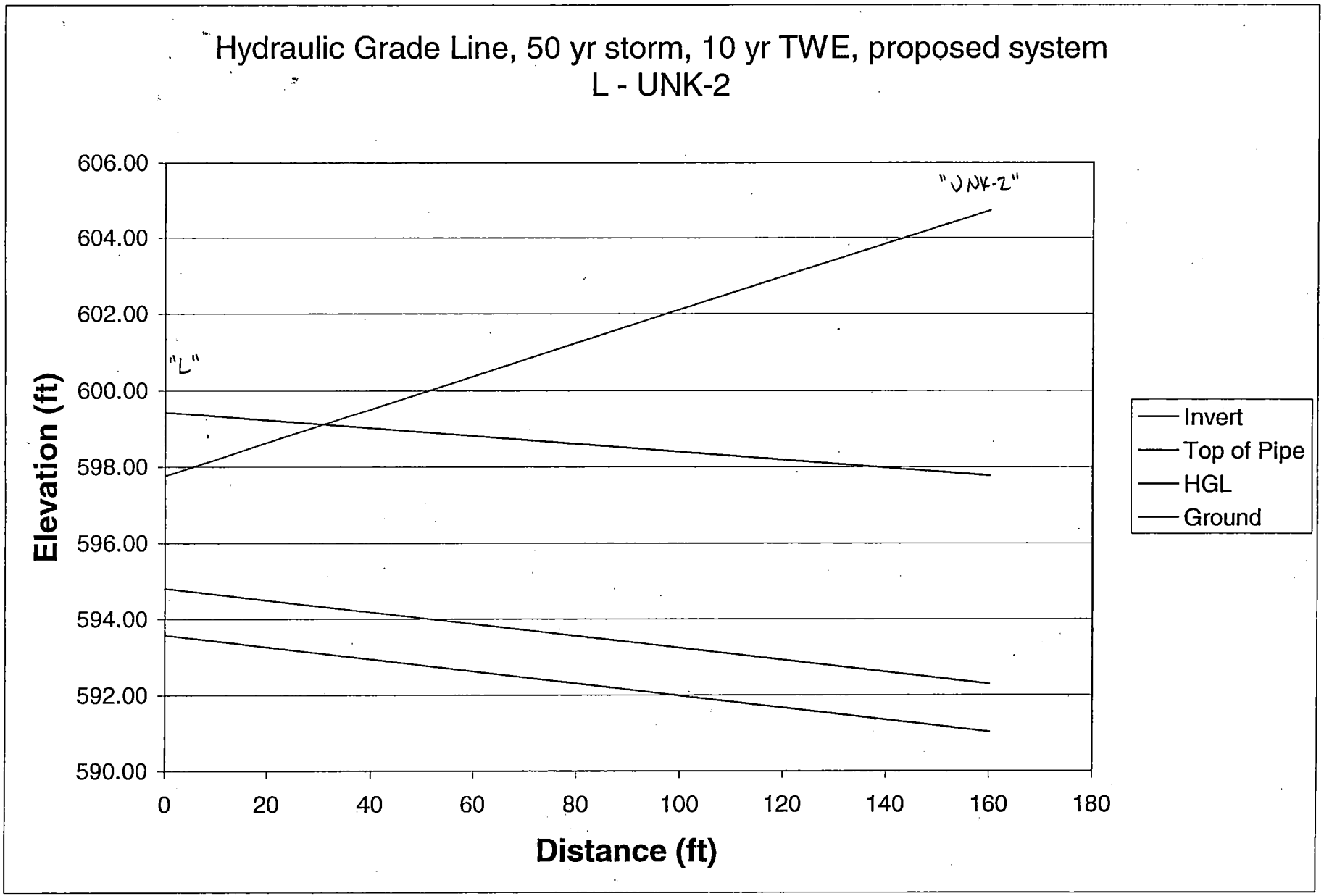

Hydraulic Grade Line, 50 yr storm, 50 yr TWE at Wet Well,
proposed system
D - UNK1
"D"
"UNK-1"
592.00
590.00
588.00
586.00
584.00
582.00
580.00
Elevation (ft)
0
20
40
60
80
100
120
140
160
Distance (ft)
Invert
Top of Pipe
HGL
Ground

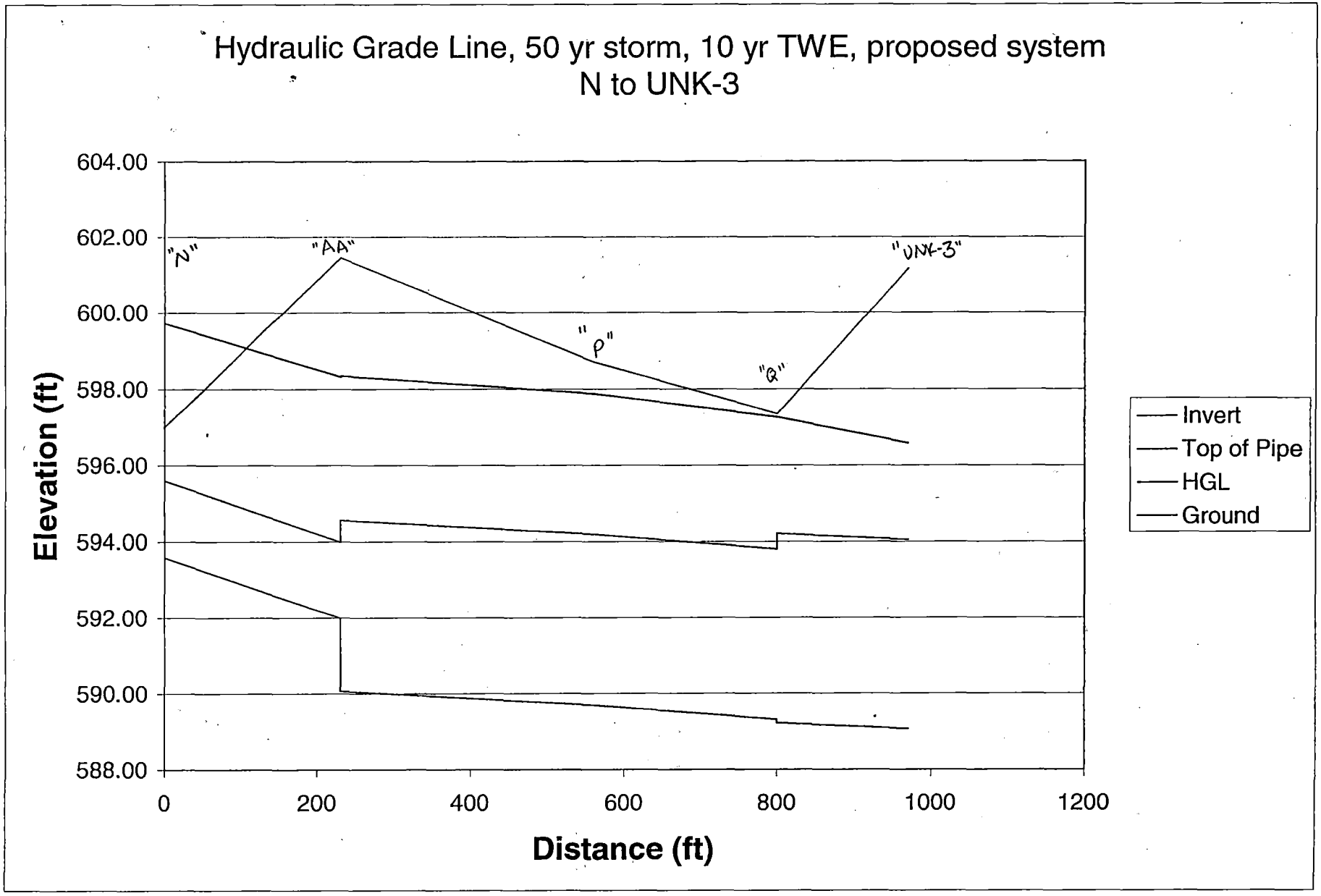

Hydraulic Grade Line, 50 yr storm, 50 yr TWE at Wet Well,
proposed system
DD - 1424
615.00
610.00
605.00
600.00
595.00
590.00
585.00
580.00
575.00
Elevation (ft)
"DD"
"B"
"1424"
0
50
100
150
200
250
300
Distance (ft)
Invert
Top of Pipe
HGL
Ground

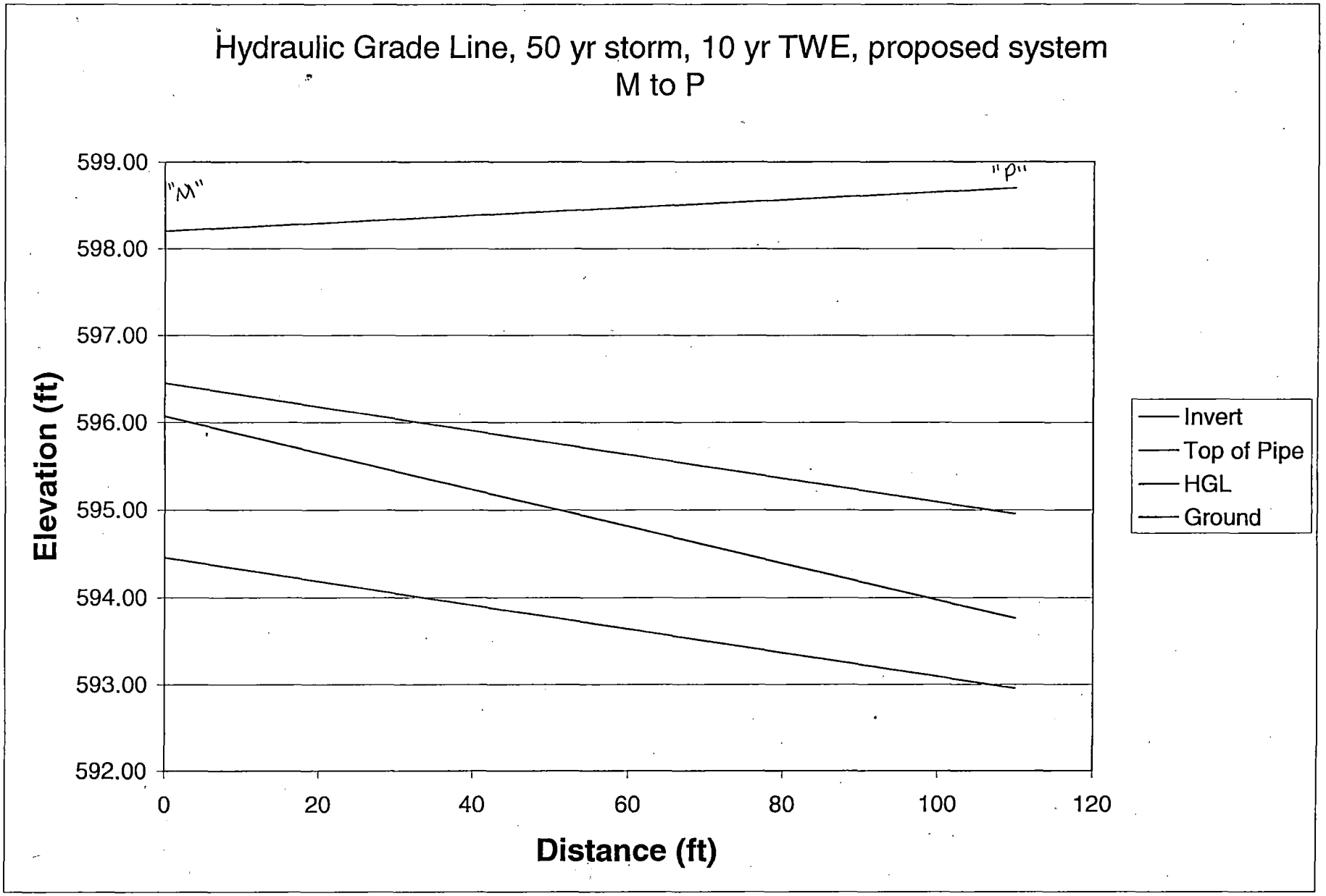
E-36-5

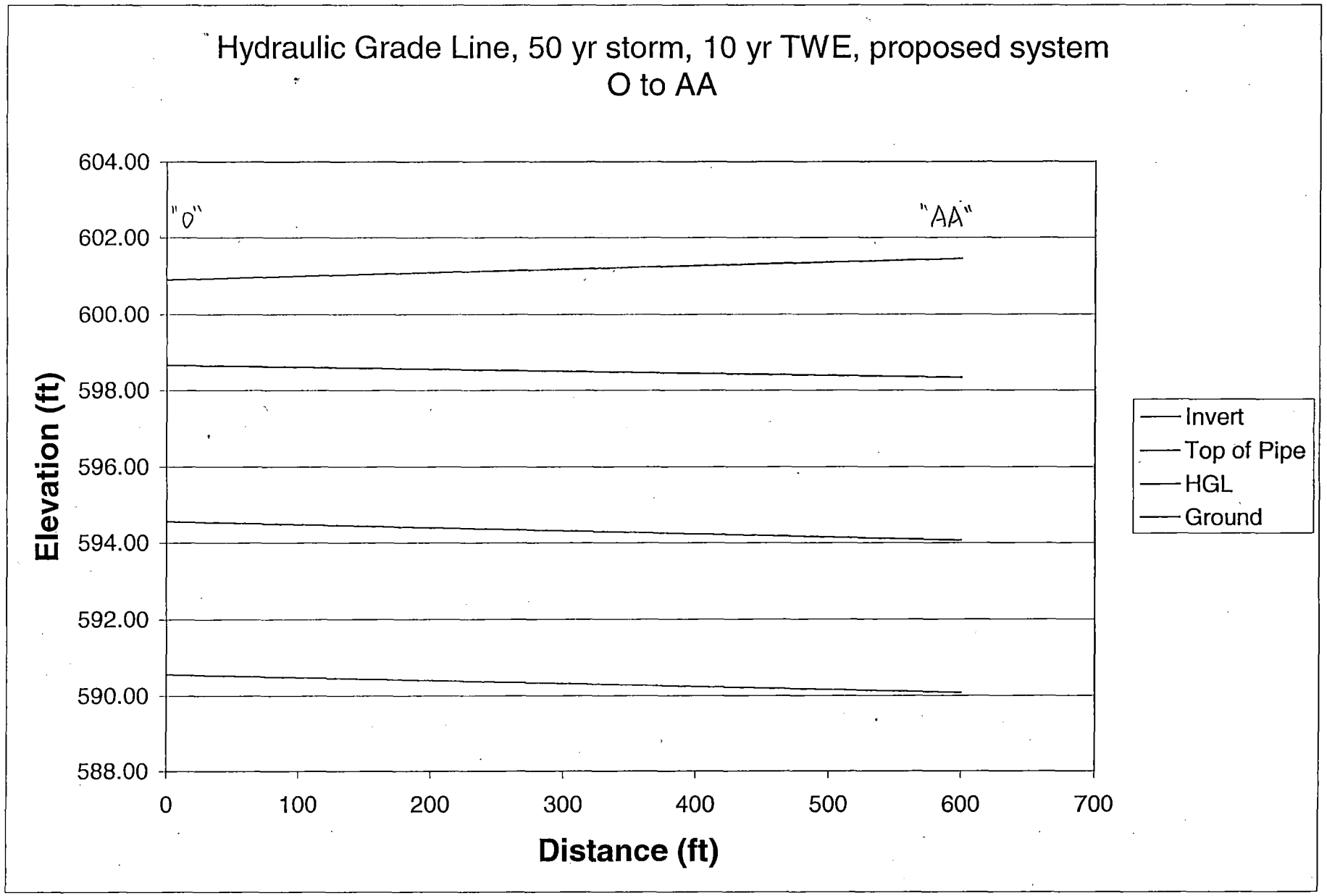

Hydraulic Grade Line, 50 yr storm, 50 yr TWE at Wet Well, proposed system
A - Y
* Note, road elevation at 590.4 +/-
"A"
"Y"
589.00
588.00
587.00
586.00
585.00
584.00
583.00
582.00
581.00
Elevation (ft)
0
20
40
60
80
100
120
140
160
180
200
Distance (ft)
Invert
Top of Pipe
HGL
Ground

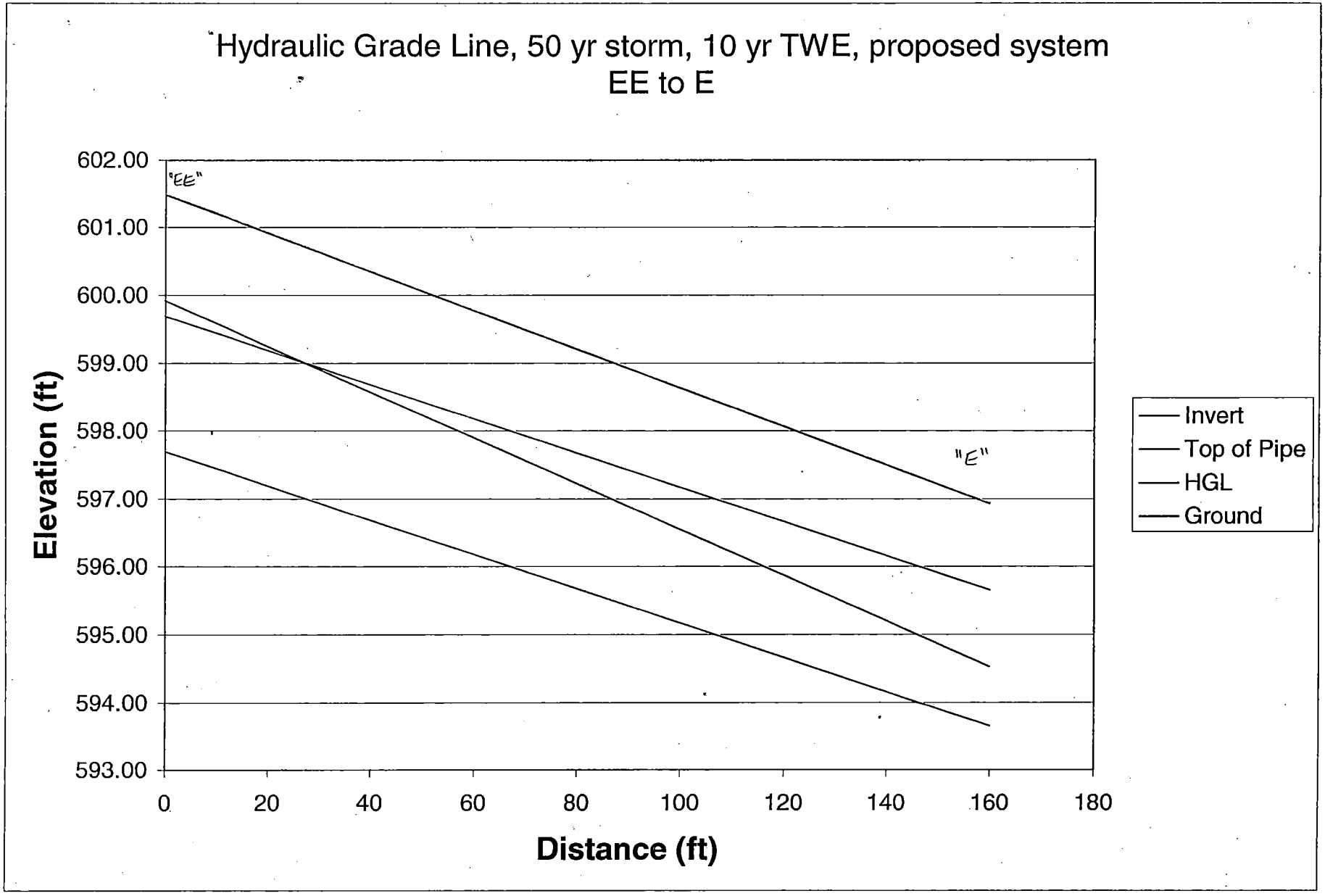

Hydraulic Grade Line, 50 yr storm, 50 yr TWE at Wet Well,
proposed system
YY - Wetwell
605.00
600.00
595.00
590.00
585.00
580.00
575.00
Elevation (ft)
0
100
200
300
400
500
600
700
Distance (ft)
"44"
"4"
"1424"
"BB"
"wetwell"
Invert
Top of Pipe
HGL
Ground

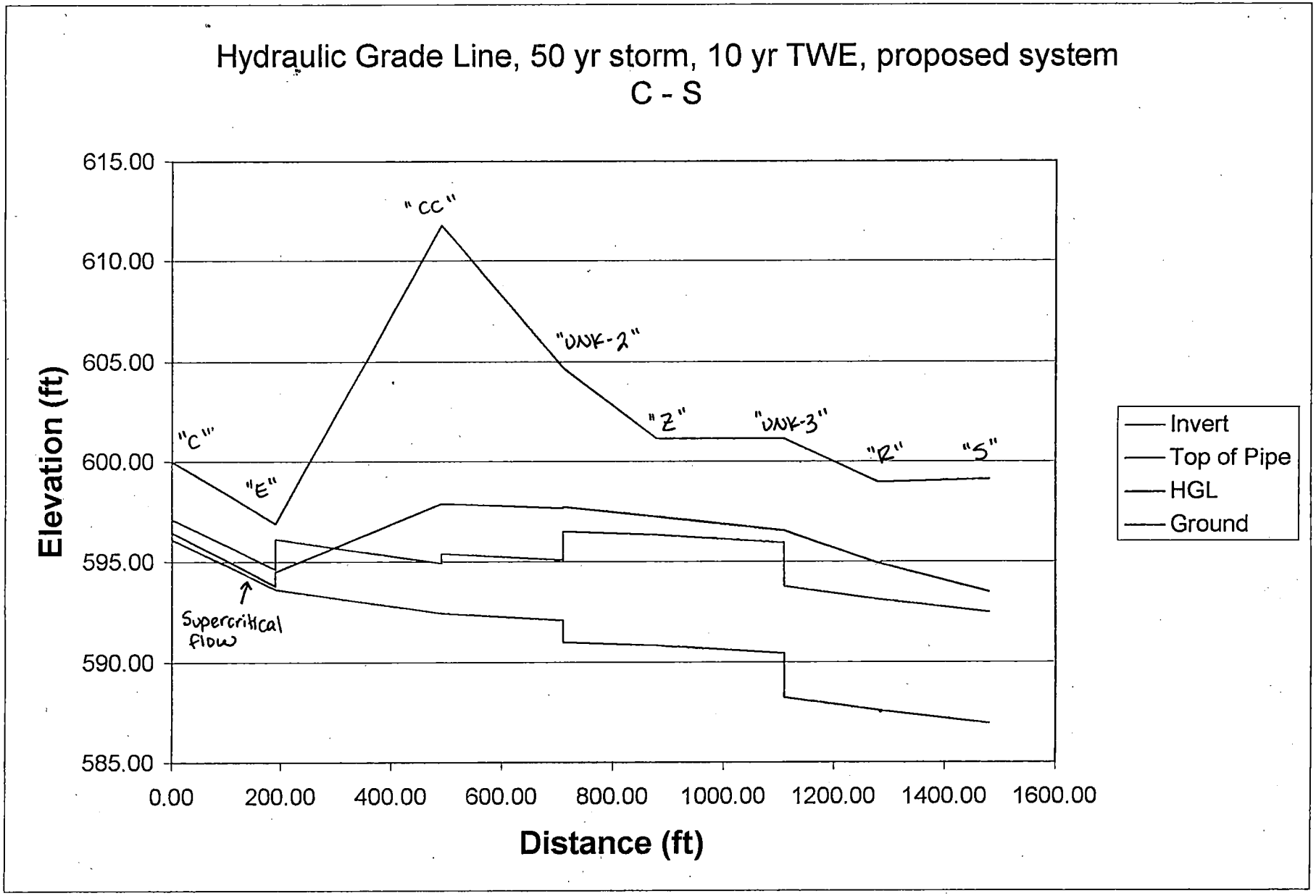

Hydraulic Grade Line, 50 yr storm, 10 yr TWE, proposed system
L - UNK-2
606.00
604.00
602.00
600.00
598.00
596.00
594.00
592.00
590.00
Elevation (ft)
0
20
40
60
80
100
120
140
160
180
Distance (ft)
"L"
"UNK-2"
Invert
Top of Pipe
HGL
Ground

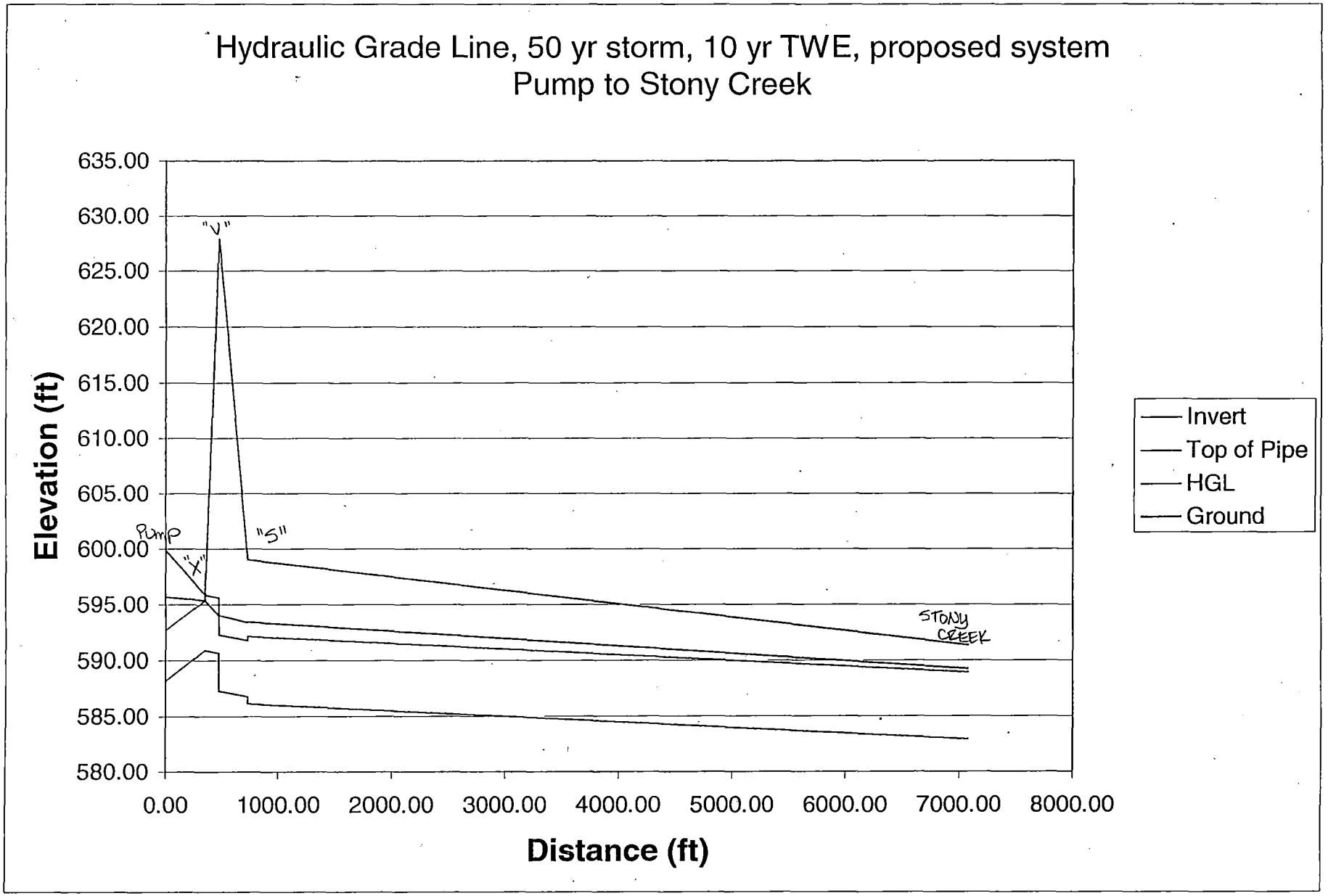

Hydraulic Grade Line, 50 yr storm, 10 yr TWE, proposed system
N to UNK-3
604.00
602.00
600.00
598.00
596.00
594.00
592.00
590.00
588.00
Elevation (ft)
0
200
400
600
800
1000
1200
Distance (ft)
"N"
"AA"
"P"
"Q"
"UNK-3"
Invert
Top of Pipe
HGL
Ground


Hydraulic Grade Line, 50 yr storm, 10 yr TWE, proposed system
M to P
599.00
598.00
597.00
596.00
595.00
594.00
593.00
592.00
Elevation (ft)
"M"
"P"
0
20
40
60
80
100
120
Distance (ft)
Invert
Top of Pipe
HGL
Ground


Hydraulic Grade Line, 50 yr storm, 10 yr TWE, proposed system
O to AA
604.00
602.00
600.00
598.00
596.00
594.00
592.00
590.00
588.00
"O"
"AA"
Elevation (ft)
0
100
200
300
400
500
600
700
Distance (ft)
Invert
Top of Pipe
HGL
Ground


Hydraulic Grade Line, 50 yr storm, 10 yr TWE, proposed system
EE to E
602.00
601.00
600.00
599.00
598.00
597.00
596.00
595.00
594.00
593.00
Elevation (ft)
"EE"
"E"
0
20
40
60
80
100
120
140
160
180
Distance (ft)
Invert
Top of Pipe
HGL
Ground


Hydraulic Grade Line, 50 yr storm, 10 yr TWE, proposed system
C - S
615.00
610.00
605.00
600.00
595.00
590.00
585.00
Elevation (ft)
0.00
200.00
400.00
600.00
800.00
1000.00
1200.00
1400.00
1600.00
Distance (ft)
"C"
"E"
"CC"
"UNK-2"
"Z"
"UNK-3"
"R"
"S"
Supercritical flow
Invert
Top of Pipe
HGL
Ground


Hydraulic Grade Line, 50 yr storm, 10 yr TWE, proposed system
Pump to Stony Creek
635.00
630.00
625.00
620.00
615.00
610.00
605.00
600.00
595.00
590.00
585.00
580.00
Elevation (ft)
0.00
1000.00
2000.00
3000.00
4000.00
5000.00
6000.00
7000.00
8000.00
Distance (ft)
Pump
"X"
"V"
"S"
STONY CREEK
Invert
Top of Pipe
HGL
Ground

Harlem & 95th Street Storm Sewer / Pump Station Analysis

Summary of Surcharged Storm Sewers and Undersized Storm Sewers from Hydra (Hydrain) Model for Proposed Condition) Alternative 1 upstream of pump station, Alternatives 1, 2 and 3 downstream of pump station.

Link	Description	U/S im Elev.	D/S im Elev.	50-y HGL, 10-yr TWE u/s	50-y HGL, 10-yr TWE d/s	Freeboard u/s	Freeboard d/s	Surcharged? u/s	Surcharged? d/s	Pipe Undersized for Gravity Flow?	Comments
1	W - 1483	590	591.35	587.96	587.37	2.04	3.98	y	y		
2	F - 1483	590.70	591.35	588.2	587.37	2.5	3.98				
3	1483 - UNK1	591.35	590.50	587.37	585.82	3.98	4.68				
4	D - UNK1	586.00	590.50	583.2	581.27	2.8	9.23				
5	UNK-1 - Wetwell	590.50	599.00	581.27	581.04	9.23	17.96				
6	YY-Y	593.50	586.86	587.79	585.96	5.71	0.9				
7	A - Y	587.00	586.86	587.84	585.96	-0.84	0.9	y			note, road adjacent to A at 590.4
8	Y - 1424	586.86	586.52	585.96	583.14	0.9	3.38				note, road adjacent to Y at 588.4
9	DD - B	603.50	587.00	609.36	581.67	-5.86	5.33	y			
10	B - 1424	587.00	586.52	581.67	583.14	5.33	3.38		y	yes, see note 1	
11	1424 - BB	586.52	585.30	583.14	582.5	3.38	2.8	y	y		
12	BB - Wetwell	585.30	599.00	582.5	581.77	2.8	17.23				
13	"dummy" pipe - sum into pump station	599.00	599.00	581.77	580.42	17.23	18.58				
1	Disch - X	600.00	596.00	595.8	595.50	4.2	0.50	y			
2	X - V**	596.00	627.93	595.50	594.12	0.5	33.81	y		see note 3	
3	V - S	627.93	599.16	594.12	593.47	33.81	5.69	y	y		
4	C - E	600.01	596.94	596.48	593.85	3.53	3.09				
5	EE - E	601.50	596.94	599.94	594.54	1.56	2.40				
6	E - CC	596.94	611.78	594.54	597.93	2.4	13.85		y		
7	CC - UNK2	611.78	604.73	597.93	597.69	13.85	7.04	y	y	see note 3	
8	FF - K	604.80	602.08	601.85	597.06	2.95	5.02	y		see note 3	
9	79th - 81st	620.00	619.00	614.31	612.60	5.69	6.40				
10	81st - 82nd	619.00	619.50	612.60	610.01	6.4	9.49				
11	82nd - 83rd	619.50	619.50	610.01	608.52	9.49	10.98				
12	83rd - 85th	619.50	620.00	608.52	607.01	10.98	12.99				
13	85th - 87th	620.00	618.50	607.01	606.48	12.99	12.02		y		
14	87th - 90th st	618.50	618.00	606.48	605.19	12.02	12.81		y		

Exhibit 37
Summary of Surcharged Storm Sewers
and Undersized Storm Sewers, Proposed Condition

Harlem & 95th Street Storm Sewer / Pump Station Analysis

Summary of Surcharged Storm Sewers and Undersized Storm Sewers from Hydra (Hydrain) Model for Proposed Condition) Alternative 1 upstream of pump station, Alternatives 1, 2 and 3 downstream of pump station.

		U/S	D/S	50-y HGL, 10-yr TWE		Freeboard		Surcharged?		Pipe Undersized for	
Link	**Description**	im Elev.	im Elev.	u/s	d/s	u/s	d/s	u/s	d/s	Gravity Flow?	Comments
15	90th st - 90th pl	618.00	615.00	605.19	603.83	12.81	11.17		y		
16	90th pl - southland	615.00	615.00	603.83	602.56	11.17	12.44				
17	southland - K	615.00	602.08	602.56	598.52	12.44	3.56	y			
18	K - UNK2	602.08	604.73	598.52	597.72	3.56	7.01	y	y	see note 3	
19	L - UNK2	597.76	604.73	599.36	597.72	-1.6	7.01	y	y	yes, see note 2	
20	UNK2 - Z	604.73	601.17	597.72	597.28	7.01	3.89	y	y		
21	Z - UNK3	601.17	601.17	597.28	596.58	3.89	4.59		y		
22	N - AA	597.00	601.45	599.72	598.32	-2.72	3.13	y	y		
23	M - P	598.20	598.70	596.07	593.76	2.13	4.94				
24	O-AA	600.90	601.45	598.66	598.34	2.24	3.11	y	y		
25	AA - P	601.45	598.70	598.34	597.88	3.11	0.82	y	y	yes, inc. to 54"	
26	P - Q	598.70	597.35	597.88	597.27	0.82	0.08	y	y	yes, inc. to 54"	
27	Q - UNK-3	597.35	601.17	597.27	596.58	0.08	4.59	y	y	yes, inc. to 60"	
28	UNK-3 - R	601.17	599.00	596.58	594.99	4.59	4.01	y	y	see note 3	
29	R - S	599.00	599.16	594.99	593.54	4.01	5.62	y	y	see note 3	
30	S - END	599.16	591.40	593.54	589.30	5.62	2.10	y	y		

Note 1: The storm sewer between B and 1424 has a negative slope, and so it does not convey via gravity flow. The upstream end of the pipe at B can be raised to meet the invert of the pipe flowing into B. This will provide adequate positive slope, and the sewer from B - 1424 will convey via gravity flow.

Note 2: The slope of the storm sewer between UNK-2 and Z can be decreased and the slope of the storm sewer between L and UNK-2 can be increased to provide conveyance via gravity flow in the sewer between L and UNK-2.

Note 3: The slopes of these sewers are adjusted to meet the velocity criteria.

Exhibit 37
Summary of Surcharged Storm Sewers
and Undersized Storm Sewers, Proposed Condition

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

CALCULATION SHEET PAGE 1 OF 1

PROJECT NO. 40855

CLIENT IDOT SUBJECT Sizing New Storm Sewers Prepared By JNH DATE 9-5-01

PROJECT LOS-Harlem/95th Reviewed By ____ DATE ____

Approved By ____ DATE ____

2 Brand new sewers reqd for new low spots

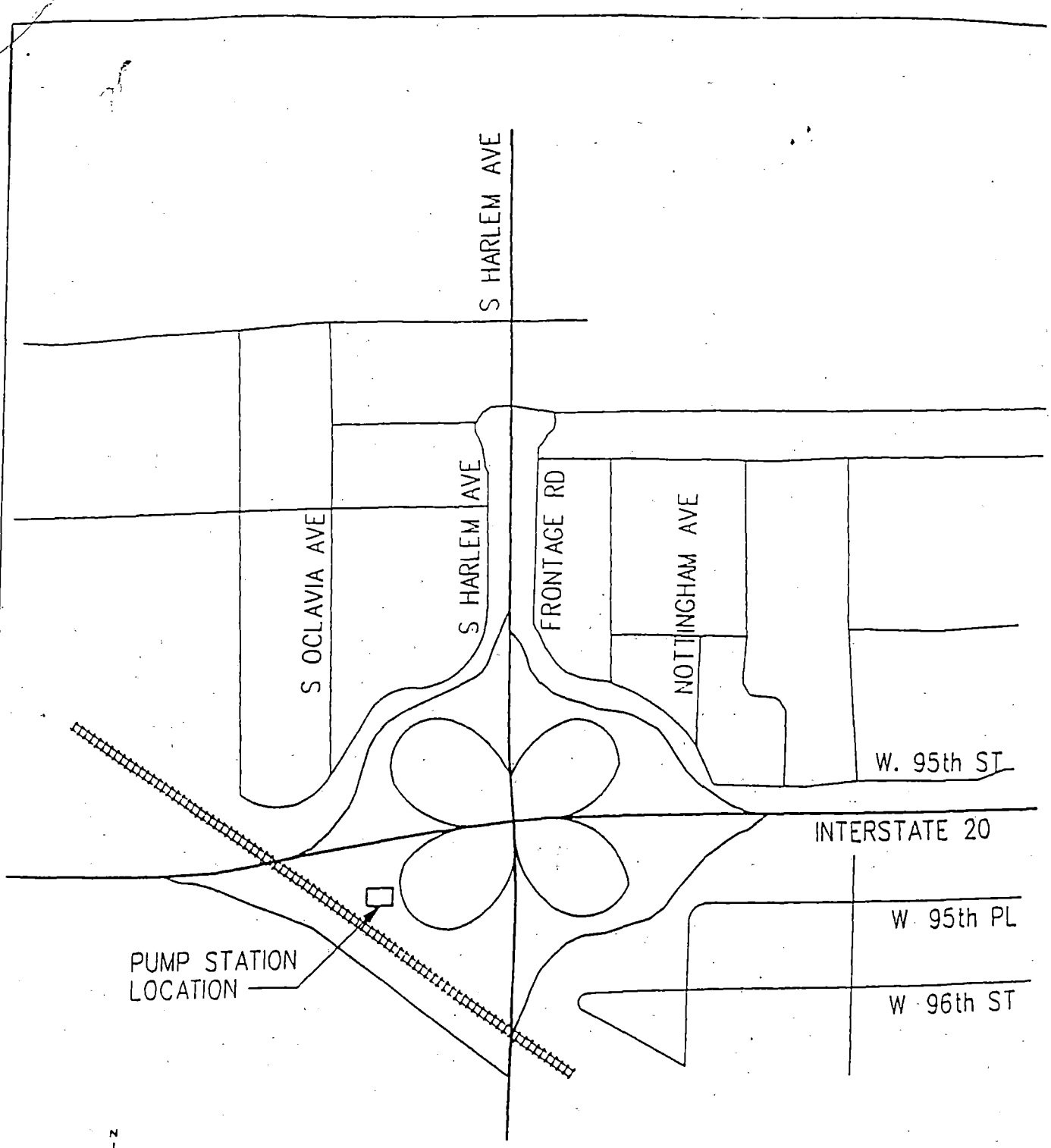
Area K1: Area = 0.28 ac
"C" = 0.43
12 min Tc → i = 7.9 iph
} see Tc, "C" calcs

Q = CiA = 0.28 × 0.43 × 7.9
= 0.95 cfs
→ use 12" pipe, .0043 ft/ft
↳ capacity = 2.4 cfs
velocity (full) = 3.0 fps

Area "New": area = 0.81 ac
"C" = 0.47
Tc = 32 min → i = 4.6 iph

Q = CiA = 0.81 × 0.47 × 4.6
= 1.75 cfs
→ use 12" pipe @ 0.0038 ft/ft slope.
↳ capacity = 2.2 cfs
velocity (full) = 2.8 fps
velocity (design) = 3.1 fps

EXHIBIT 39



NOT TO SCALE

LOCATION OF MAJOR DRAINAGE FEATURE

EARTH TECH

IL. DEPT. OF TRANSPORTATION
PUMP STATION #25
(95th STREET & HARLEM AVENUE)

06 NOV 2000
I:\work\40855\cadd\exhbit001.dgn

STORM SEWER BEGINS 6580 FEET NORTH
AT 80th STREET AND DRAINS HARLEM AVENUE R.O.W.
SEWER DIAMETER RANGES FROM 15" TO 54"

PUMP STATION 25
(95th and Harlem Avenue)
Pump Station Evaluation
Existing Drainage Exhibit

0' 100' 200' 400'
SCALE: 1"= 200'

N

LEGEND

EXISTING SYSTEMS:
- HARLEM AVENUE
- HARLEM & 95th INTERCHANGE
- BRIDGEVIEW
- 95th

DRAINAGE DIVIDE
DITCH
SWALE
OUTLET
SHEET FLOW
OVERFLOW
CULVERT END SECTION
HEADWALL
PUMP STATION
"DD" SUBBASIN IDENTIFICATION

NOTES:
1. SOME SMALL LATERALS HAVE BEEN ELIMINATED FOR SIMPLICITY.
2. INDIVIDUAL INLETS ARE NOT SHOWN.

OUTLET 1: 72" AT STONY CREEK
OUTLET 2: 42" AT SOUTHWEST QUAD
OUTLET 3: 15" AT CENTRAL DETENTION POND

SUB WATERSHED 1
(FROM VILLAGE REPORT)
(APPROX. DIVIDE)

SUB WATERSHED 2
(FROM VILLAGE REPORT)

CENTRAL DETENTION POND

CENTRAL DETENTION POND OVERTOPS AND FLOWS TO THE PUMP STATION

15" RESTRICTOR

TRI-STATE N.W. INFIELD

SEVERELY DAMAGED 30" PIPE

NORTHWEST POND OVERTOPS AT 604.5± AND FLOWS WEST ON 95TH STREET

90th ST.
90th PL.
91st ST.
92nd ST.
92nd PL.
93rd. ST.
BRIDGEVIEW
ODELL
OCTAVIA
THOMAS
OKETO
OAK LAWN
CHICAGO RIDGE

72" STORM SEWER CONTINUES 6350' TO THE SOUTH AND DRAINS THE HARLEM AVENUE R.O.W.

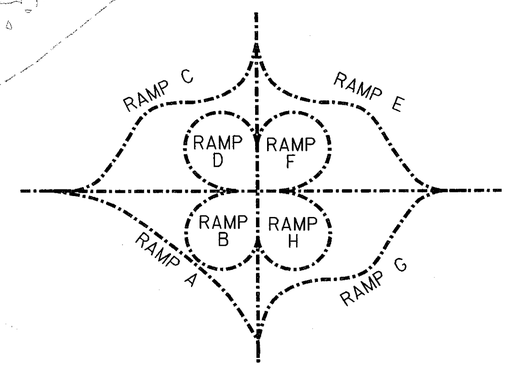


EXHIBIT I-00B

EXISTING DRAINAGE PLAN, 1"=200'

STORM SEWER BEGINS 6580 FEET NORTH
AT 80th STREET AND DRAINS HARLEM AVENUE R.O.W.
SEWER DIAMETER RANGES FROM 15" TO 54"

PUMP STATION 25
(95th and Harlem Avenue)
Pump Station Evaluation
Proposed Drainage Exhibit

0' 100' 200' 400'
SCALE: 1"= 200'

N

LEGEND

EXISTING SYSTEMS:
- HARLEM AVENUE
- HARLEM & 95th INTERCHANGE
- BRIDGEVIEW
- 95th

- DRAINAGE DIVIDE
- PROPOSED GEOMETRY
- DITCH
- SWALE
- OUTLET
- SHEET FLOW
- OVERFLOW
- CULVERT END SECTION
- HEADWALL
- PUMP STATION
- "DD" SUBBASIN IDENTIFICATION

NOTES:
1. SOME SMALL LATERALS HAVE BEEN ELIMINATED FOR SIMPLICITY.
2. INDIVIDUAL INLETS ARE NOT SHOWN.
3. STORM SEWER SYSTEMS SHOWN IN THIS EXHIBIT ARE EXISTING SYSTEMS.
4. CONTOURS REFLECT THE EXISTING CONDITION AND DO NOT REPRESENT PROPOSED GRADES.

SUB WATERSHED 1
(FROM VILLAGE REPORT)
(APPROX. DIVIDE)

SUB WATERSHED 2
(FROM VILLAGE REPORT)

90th ST.
90th PL.
91st ST.
92nd ST.
92nd PL.
93rd. ST.
BRIDGEVIEW
ODELL
OCTAVIA
THOMAS
OKETO
SOUTHLAND
OAK LAWN
CHICAGO RIDGE

36" PIPE
60" RCP
72" RCP
54" RCP
42" RCP
24" RCP
30" RCP
36" RCP
48" RCP
15" RESTRICTOR
SEVERELY DAMAGED 30" PIPE

TRI-STATE
N.W. INFIELD

NORTHWEST POND OVERTOPS AT 604.5± AND FLOWS WEST ON 95TH STREET

RAMP A
RAMP B
RAMP C
RAMP D
RAMP E
RAMP F
RAMP G
RAMP H

72" STORM SEWER CONTINUES 6350' TO THE SOUTH AND DRAINS THE HARLEM AVENUE R.O.W.

Node in Hydra Model	Description on Color Exhibits	Road/Ramp used for Stationing	Station	Offset
1	W	eastbound 95th	705+65	57' Rt.
2	F	westbound 95th	618+09	74' Lt.
3	1483	eastbound 95th	704+60	24' Rt.
4	UNK1	eastbound 95th	703+48	24' Rt.
5	D	westbound 95th	616+03	86' Lt.
6	Wetwell	--	--	--
7	A	westbound 95th	610+41	50' Lt.
8	Y	westbound 95th	611+51	60' Rt.
81	YY	westbound 95th	609+58	46' Rt.
9	B	westbound 95th	613+30	57' Lt.
10	1424	westbound 95th	614+22	6' Rt.
11	BB	westbound 95th	614+69	61' Rt.
12	Pump	--	--	--
99	Pump	--	--	--
13	X	Harlem	314+80	194' Lt.
14	V	Harlem	314+10	103' Rt.
15	S	Harlem	313+45	151' Rt.
16	C	Harlem	324+20	344' Lt.
17	E	Harlem	324+00	215' Lt.
18	CC	Harlem	321+09	102' Lt.
19	UNK2	Harlem	321+08	124' Rt.
20	Z	Harlem	319+39	132' Rt.
21	UNK3	Harlem	317+08	138' Rt.
22	R	Harlem	315+40	142' Rt.
24	K	Harlem	323+19	84' Rt.
25	L	westbound 95th	624+74	109' Lt.
26	O	westbound 95th	635+39	51' Rt.
27	AA	westbound 95th	629+72	93' Rt.
28	P	eastbound 95th	713+73	93' Rt.
29	Q	Harlem	317+51	302' Rt.
30	M	westbound 95th	626+30	25' Lt.
31	N	westbound 95th	628+66	158' Lt.
32	DD	westbound 95th	613+40	166' Lt.
33	EE	Harlem	325+74	206' Lt.
34	FF	Harlem	325+33	181' Rt.

EXHIBIT I-00C

EXISTING STORM SEWER PLAN, 1"=200'

FLOOD PROFILES

STONY CREEK (WEST)

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF PALOS HILLS, IL
(COOK CO.)

03P

EXHIBIT 1-02b
FLOOD PROFILE

STORM SEWER BEGINS 6580 FEET NORTH
AT 80th STREET AND DRAINS HARLEM AVENUE R.O.W.
SEWER DIAMETER RANGES FROM 15" TO 54"

PUMP STATION 25
(95th and Harlem Avenue)
Pump Station Evaluation
Proposed Drainage Exhibit

0' 100' 200' 400'
SCALE: 1"= 200'

N

LEGEND

EXISTING SYSTEMS:
- HARLEM AVENUE
- HARLEM & 95th INTERCHANGE
- BRIDGEVIEW
- 95th

- DRAINAGE DIVIDE
- PROPOSED GEOMETRY
- DITCH
- SWALE
- OUTLET
- SHEET FLOW
- OVERFLOW
- CULVERT END SECTION
- HEADWALL
- PUMP STATION
- "DD" SUBBASIN IDENTIFICATION

NOTES:
1. SOME SMALL LATERALS HAVE BEEN ELIMINATED FOR SIMPLICITY.
2. INDIVIDUAL INLETS ARE NOT SHOWN.
3. STORM SEWER SYSTEMS SHOWN IN THIS EXHIBIT REFLECT ALTERNATIVES 1 AND 2.
4. CONTOURS REFLECT THE EXISTING CONDITION AND DO NOT REPRESENT PROPOSED GRADES.

PROPOSED ALTERNATIVES 3a AND 3b

ALTERNATIVE 3a: REPLACE D-UNKNOWN-1 WITH 36" RCP
REPLACE UNK-1-WETWELL WITH 42" RCP

ALTERNATIVE 3b: REPLACE A-Y WITH 48" RCP
REPLACE Y-1424 WITH 42" RCP
REPLACE 1424-BB WITH 48" RCP

Node in Hydra Model	Description on Color Exhibits	Road/Ramp used for Stationing	Station	Offset
1	W	eastbound 95th	705+65	56' Rt.
2	F	westbound 95th	618+09	74' Lt.
3	1483	eastbound 95th	704+60	45' Rt.
4	UNK1	eastbound 95th	703+48	45' Rt.
5	D	westbound 95th	616+03	86' Lt.
6	Wetwell	--	--	--
7	A	westbound 95th	610+41	50' Lt.
8	Y	westbound 95th	611+51	60' Rt.
81	YY	westbound 95th	609+58	46' Rt.
9	B	westbound 95th	613+30	57' Lt.
10	1424	westbound 95th	614+22	6' Rt.
11	BB	westbound 95th	614+69	61' Rt.
12	Pump	--	--	--
99	Pump	--	--	--
13	X	Harlem	314+80	194' Lt.
14	V	Harlem	314+10	103' Rt.
15	S	Harlem	313+45	151' Rt.
16	C	Harlem	324+20	344' Lt.
17	E	Harlem	324+00	215' Lt.
18	CC	Harlem	321+09	102' Lt.
--	NEW	westbound 95th	619+25	80' Lt.
19	UNK2	Harlem	321+08	124' Rt.
20	Z	Harlem	319+39	132' Rt.
21	UNK3	Harlem	317+08	138' Rt.
22	R	Harlem	315+40	142' Rt.
24	K	Harlem	323+19	84' Rt.
--	K1	Harlem	323+25	80' Rt.
25	L	westbound 95th	624+74	109' Lt.
26	O	westbound 95th	635+39	51' Rt.
27	AA	westbound 95th	629+72	93' Rt.
28	P	eastbound 95th	713+73	93' Rt.
29	Q	Harlem	317+51	302' Rt.
30	M	westbound 95th	626+30	25' Lt.
31	N	westbound 95th	628+66	158' Lt.
32	DD	westbound 95th	613+40	166' Lt.
33	EE	Harlem	325+74	206' Lt.
34	FF	Harlem	325+33	181' Rt.

Swales to be re-graded / re-established:	Road/Ramp used for Stationing	Station/Offset at upstream end of Ditch: Station	Offset
Outside Frontage E to inlet N	RAMP E	14+89	8' Rt..
Inside of Ramp H to inlet Q	RAMP H	6+11	36' Rt.
South of Ramp G	RAMP G	25+50	59' Rt.
South of 95th Street, east of Ramp H to inlet P	95TH E. B.	711+20	38' Rt.
South of 95th Street, west of Harlem to BB	95TH E. B.	700+96	47' Rt.
South of Ramp B to inlet X	95TH E. B.	703+65	330' Rt.
South of Ramp H, north of Ramp G to inlet P	RAMP G	21+72	25' Lt.
West of Harlem, East of new Ramp D, to inlet CC	HARLEM	324+00	65' Lt.
West of Harlem, East of new Ramp D, to inet "NEW"	HARLEM	321+82	66' Lt.
Outside Ramp F to inlet M	RAMP F	23+00	28' Lt.
Inside Ramp F to inlet L	RAMP F	20+33	24' Rt.

New swales:	Road/Ramp used for Stationing	Station/Offset at upstream end of Ditch: Station	Offset
North of Ramp B to inlet W	95TH E. B.	704+21	185' Rt.
Outside of new Ramp D to inlet F	HARLEM	323+65	150' Lt.
North of 95th St. west of Ramp D, to inlets D & B	95TH W. B.	610+15	200' Lt.
Outside Ramp F to inlet K-1	HARLEM	322+50	54' Rt.

42" STORM SEWER TO CONVEY OVERFLOW FROM CENTRAL DETENTION POND TO NORTHWEST INFIELD, ATERNATIVES 2 AND 3a

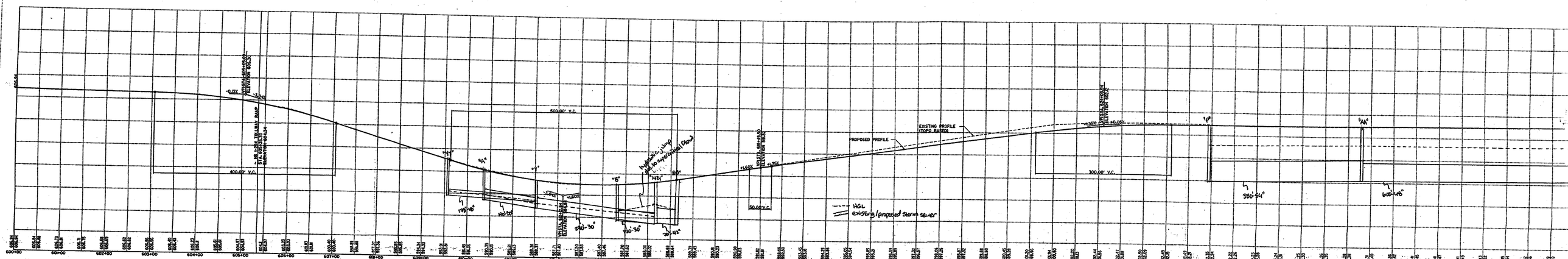
RELOCATE INLET AT STA. 299+20, OFFSET 44' RT. TO CURBLINE. ADJUST STORM SEWERS AS REQUIRED

72" STORM SEWER CONTINUES 6350' TO THE SOUTH AND DRAINS THE HARLEM AVENUE R.O.W.

RAMP I
RAMP E
RAMP F
RAMP H
ACCESS ROAD
RAMP G

EXHIBIT 2-00B

PROPOSED STORM SEWER PLAN, 1"=200'

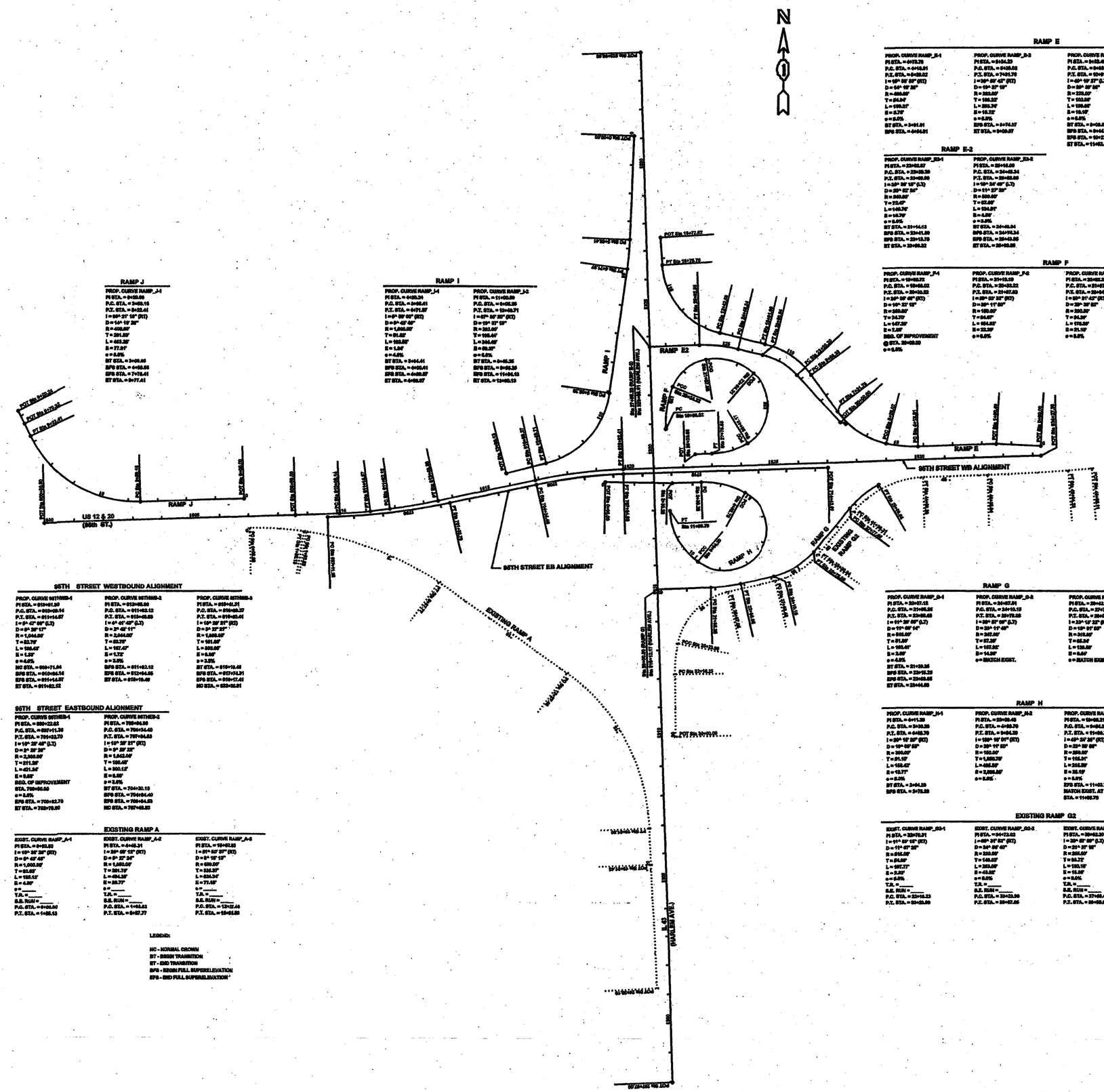


95th STREET
WEST BOUND
570-620
600+00 - 634+28.53

* STORM SEWERS NOT SHOWN
IN PROFILE HERE CAN BE
FOUND IN EXHIBIT 36 OF
THE HYDRAULIC REPORT

95th STREET
EAST BOUND
570-620
697+11.36 - 714+43.51

HARLEM AVENUE
580-635
306+00 - 333+00



RAMP J

PROP. CURVE RAMP_J-1
PI STA. = 9+20.00
P.C. STA. = 7+93.10
P.T. STA. = 9+32.41
I = 89° 21' 19" (RT)
D = 14° 19' 28"
R = 400.00'
T = 291.32'
L = 432.39'
E = 77.21'
e = 6.0%
BT STA. = 7+93.65
BFS STA. = 4+55.65
EFS STA. = 7+78.41
ET STA. = 9+77.41

RAMP I

PROP. CURVE RAMP_I-1	PROP. CURVE RAMP_I-2
PI STA. = 4+30.36	PI STA. = 11+00.00
P.C. STA. = 3+06.41	P.C. STA. = 9+60.00
P.T. STA. = 4+71.57	P.T. STA. = 12+43.71
I = 9° 59' 00" (RT)	I = 87° 30' 29" (RT)
D = 9° 45' 49"	D = 19° 27' 59"
R = 1,000.00'	R = 292.00'
T = 91.52'	T = 155.44'
L = 165.15'	L = 244.49'
E = 1.24'	E = 59.20'
e = 4.0%	e = 6.0%
BT STA. = 3+44.44	BT STA. = 9+45.56
BFS STA. = 4+00.41	BFS STA. = 9+60.56
EFS STA. = 4+69.57	EFS STA. = 11+00.13
ET STA. = 4+86.57	ET STA. = 12+60.13

RAMP E

PROP. CURVE RAMP_E-1	PROP. CURVE RAMP_E-2	PROP. CURVE RAMP_E-3	PROP. CURVE RAMP_E-4
PI STA. = 9+72.70	PI STA. = 9+34.23	PI STA. = 9+63.40	PI STA. = 14+36.66
P.C. STA. = 9+48.91	P.C. STA. = 8+28.02	P.C. STA. = 9+48.33	P.C. STA. = 13+42.66
P.T. STA. = 9+89.02	P.T. STA. = 7+91.76	P.T. STA. = 10+91.56	P.T. STA. = 14+76.76
I = 95° 59' 33" (RT)	I = 229° 55' 42" (RT)	I = 69° 19' 37" (LT)	I = 72° 59' 28" (RT)
D = 54° 59' 36"	D = 164° 20' 19"	D = 25° 29' 26"	D = 21° 52' 07"
R = 105.00'	R = 35.00'	R = 225.00'	R = 262.00'
T = 84.94'	T = 186.22'	T = 153.05'	T = 193.35'
L = 109.33'	L = 280.74'	L = 156.05'	L = 333.09'
E = 3.79'	E = 18.72'	E = 15.05'	E = 15.09'
e = 6.0%	e = 6.0%	e = 6.0%	e = 6.0%
BT STA. = 9+01.91	EFS STA. = 8+74.07	BT STA. = 9+48.07	BT STA. = 11+62.24
EFS STA. = 9+04.91	BT STA. = 9+09.07	EFS STA. = 10+27.54	EFS STA. = 12+07.24
		ET STA. = 11+63.54	EFS STA. = 12+62.77
			ET STA. = 14+25.77

RAMP E-2

PROP. CURVE RAMP_E2-1	PROP. CURVE RAMP_E2-2
PI STA. = 23+63.57	PI STA. = 25+16.09
P.C. STA. = 23+39.39	P.C. STA. = 24+62.34
P.T. STA. = 23+63.39	P.T. STA. = 25+62.66
I = 33° 36' 18" (LT)	I = 59° 24' 49" (LT)
D = 25° 52' 36"	D = 11° 27' 35"
R = 225.00'	R = 500.00'
T = 23.40'	T = 57.05'
L = 46.79'	L = 104.97'
E = 1.21'	E = 3.27'
e = 6.0%	e = 3.0%
BT STA. = 23+14.13	BT STA. = 24+49.04
BFS STA. = 23+41.39	BFS STA. = 24+76.34
EFS STA. = 23+15.79	EFS STA. = 25+42.66
ET STA. = 23+69.32	ET STA. = 25+67.66

RAMP F

PROP. CURVE RAMP_F-1	PROP. CURVE RAMP_F-2	PROP. CURVE RAMP_F-3	PROP. CURVE RAMP_F-4	PROP. CURVE RAMP_F-5
PI STA. = 19+63.72	PI STA. = 21+15.19	PI STA. = 22+63.39	PI STA. = 23+63.83	PI STA. = 27+13.41
P.C. STA. = 19+43.02	P.C. STA. = 20+33.22	P.C. STA. = 21+57.93	P.C. STA. = 23+04.21	P.C. STA. = 26+46.17
P.T. STA. = 20+03.22	P.T. STA. = 21+47.93	P.T. STA. = 22+87.93	P.T. STA. = 23+44.21	P.T. STA. = 27+76.49
I = 24° 06' 49" (RT)	I = 85° 23' 23" (RT)	I = 85° 23' 23" (RT)	I = 107° 01' 59" (RT)	I = 29° 49' 52" (RT)
D = 19° 22' 08"	D = 35° 11' 09"	D = 35° 11' 09"	D = 39° 11' 00"	D = 23° 11' 00"
R = 295.00'	R = 162.80'	R = 162.80'	R = 146.20'	R = 247.00'
T = 34.70'	T = 54.65'	T = 54.65'	T = 68.06'	T = 65.97'
L = 67.30'	L = 104.65'	L = 104.65'	L = 175.59'	L = 128.55'
E = 2.58'	E = 13.39'	E = 13.39'	E = 15.55'	E = 8.67'
e = 6.0%	e = 6.0%	e = 6.0%	e = 6.0%	e = 6.0%
BEG. OF IMPROVEMENT @ STA. 20+00.00 e = 6.0%				

RAMP G

PROP. CURVE RAMP_G-1	PROP. CURVE RAMP_G-2	PROP. CURVE RAMP_G-3
PI STA. = 23+57.12	PI STA. = 24+07.91	PI STA. = 23+42.89
P.C. STA. = 23+46.32	P.C. STA. = 24+19.12	P.C. STA. = 23+77.66
P.T. STA. = 23+68.62	P.T. STA. = 25+79.28	P.T. STA. = 25+66.64
I = 91° 29' 59" (LT)	I = 89° 59' 59" (LT)	I = 23° 12' 22" (RT)
D = 19° 05' 14"	D = 25° 52' 36"	D = 19° 37' 02"
R = 300.00'	R = 267.00'	R = 292.00'
T = 21.30'	T = 67.20'	T = 60.34'
L = 195.43'	L = 187.32'	L = 128.52'
E = 3.66'	E = 14.29'	E = 6.50'
e = 6.0%	e = MATCH EXIST.	e = MATCH EXIST.
BT STA. = 23+36.32		
BFS STA. = 23+16.32		
EFS STA. = 23+63.68		
ET STA. = 23+44.68		

RAMP H

PROP. CURVE RAMP_H-1	PROP. CURVE RAMP_H-2	PROP. CURVE RAMP_H-3
PI STA. = 6+11.39	PI STA. = 23+59.49	PI STA. = 25+63.21
P.C. STA. = 3+39.39	P.C. STA. = 4+60.79	P.C. STA. = 24+63.58
P.T. STA. = 6+62.79	P.T. STA. = 5+84.39	P.T. STA. = 25+84.79
I = 20° 15' 30" (RT)	I = 159° 15' 01" (RT)	I = 68° 24' 35" (RT)
D = 19° 05' 55"	D = 39° 11' 00"	D = 22° 39' 00"
R = 300.00'	R = 150.00'	R = 253.00'
T = 21.10'	T = 1,883.79'	T = 155.31'
L = 155.43'	L = 466.59'	L = 299.59'
E = 13.77'	E = 2,000.58'	E = 35.19'
e = 6.0%	e = 6.0%	e = 6.0%
BT STA. = 3+40.29		EFS STA. = 11+63.79
BFS STA. = 3+79.39		MATCH EXIST. AT STA. = 11+93.79

95TH STREET WESTBOUND ALIGNMENT

PROP. CURVE 95THWB-1	PROP. CURVE 95THWB-2	PROP. CURVE 95THWB-3
PI STA. = 810+61.50	PI STA. = 812+65.00	PI STA. = 815+41.91
P.C. STA. = 810+29.14	P.C. STA. = 811+62.12	P.C. STA. = 815+93.37
P.T. STA. = 811+14.87	P.T. STA. = 813+68.89	P.T. STA. = 816+20.44
I = 5° 47' 09" (LT)	I = 4° 41' 49" (LT)	I = 19° 39' 31" (RT)
D = 5° 30' 17"	D = 3° 49' 11"	D = 3° 27' 27"
R = 1,044.00'	R = 2,044.00'	R = 1,666.00'
T = 52.79'	T = 83.79'	T = 161.56'
L = 105.47'	L = 167.47'	L = 326.53'
E = 1.33'	E = 1.72'	E = 6.56'
e = 4.0%	e = 3.0%	e = 3.0%
BC STA. = 809+71.64	BFS STA. = 811+62.12	BT STA. = 815+19.48
BFS STA. = 810+06.14	EFS STA. = 812+64.85	BFS STA. = 817+74.31
EFS STA. = 811+14.87	ET STA. = 813+18.49	EFS STA. = 818+17.41
ET STA. = 811+62.52		NC STA. = 823+00.91

95TH STREET EASTBOUND ALIGNMENT

PROP. CURVE 95THEB-1	PROP. CURVE 95THEB-2
PI STA. = 699+22.62	PI STA. = 700+84.50
P.C. STA. = 697+11.30	P.C. STA. = 700+34.40
P.T. STA. = 701+33.70	P.T. STA. = 707+84.63
I = 15° 25' 45" (LT)	I = 59° 59' 57" (RT)
D = 2° 30' 28"	D = 5° 29' 22"
R = 2,300.00'	R = 1,042.00'
T = 311.39'	T = 599.46'
L = 621.39'	L = 900.13'
E = 8.66'	E = 8.59'
BEG. OF IMPROVEMENT STA. 700+00.00	e = 3.0%
e = 3.0%	BT STA. = 704+20.19
EFS STA. = 700+62.70	BFS STA. = 704+84.40
BT STA. = 702+72.09	EFS STA. = 709+84.63
	NC STA. = 707+85.85

EXISTING RAMP A

EXIST. CURVE RAMP_A-1	EXIST. CURVE RAMP_A-2	EXIST. CURVE RAMP_A-3
PI STA. = 0+63.83	PI STA. = 6+46.31	PI STA. = 16+40.83
I = 15° 25' 25" (RT)	I = 29° 59' 12" (RT)	I = 21° 52' 37" (RT)
D = 5° 45' 49"	D = 5° 37' 24"	D = 5° 15' 13"
R = 1,000.00'	R = 1,020.00'	R = 1,091.00'
T = 83.85'	T = 391.73'	T = 338.39'
L = 165.15'	L = 534.33'	L = 834.34'
E = 4.90'	E = 39.77'	E = 77.62'
e = ____	e = ____	e = ____
T.S. = ____	T.S. = ____	T.S. = ____
S.E. SUM = ____	S.E. SUM = ____	S.E. SUM = ____
P.C. STA. = 0+00.00	P.C. STA. = 1+46.83	P.C. STA. = 13+27.46
P.T. STA. = 1+65.15	P.T. STA. = 5+87.77	P.T. STA. = 15+65.80

RAMP G2

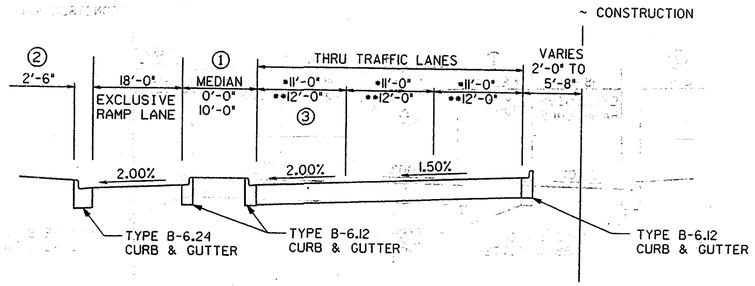
EXIST. CURVE RAMP_G2-1	EXIST. CURVE RAMP_G2-2	EXIST. CURVE RAMP_G2-3	EXIST. CURVE RAMP_G2-4	EXIST. CURVE RAMP_G2-5
PI STA. = 22+70.31	PI STA. = 24+72.02	PI STA. = 29+62.20	PI STA. = 42+42.42	PI STA. = 47+67.59
I = 91° 59' 16" (RT)	I = 65° 26' 52" (RT)	I = 39° 59' 59" (LT)	I = 89° 28' 16" (RT)	I = 2° 37' 56" (LT)
D = 11° 45' 28"	D = 34° 39' 45"	D = 21° 37' 56"	D = 19° 35' 27"	D = 3° 52' 15"
R = 515.00'	R = 330.00'	R = 265.00'	R = 310.00'	R = 1,500.00'
T = 54.09'	T = 103.07'	T = 50.72'	T = 106.91'	T = 137.12'
L = 107.77'	L = 203.20'	L = 100.10'	L = 273.58'	L = 274.19'
E = 2.24'	E = 15.35'	E = 10.35'	E = 23.73'	E = 1.67'
e = 6.0%	e = 6.0%	e = 6.0%	e = 7.3%	e = 1.5%
T.S. = ____	T.S. = ____	T.S. = ____	T.S. = ____	T.S. = ____
S.E. SUM = ____	S.E. SUM = ____	S.E. SUM = ____	S.E. SUM = ____	S.E. SUM = ____
P.C. STA. = 22+16.33	P.C. STA. = 23+23.99	P.C. STA. = 27+03.49	P.C. STA. = 41+39.31	P.C. STA. = 43+30.64
P.T. STA. = 23+24.09	P.T. STA. = 25+27.85	P.T. STA. = 30+08.64	P.T. STA. = 44+13.58	P.T. STA. = 46+04.83

LEGEND:

NC - NORMAL CROWN
BT - BEGIN TRANSITION
ET - END TRANSITION
BFS - BEGIN FULL SUPERELEVATION
EFS - END FULL SUPERELEVATION

Proposed Roadway Profile and Alignment, Exhibit 2-02

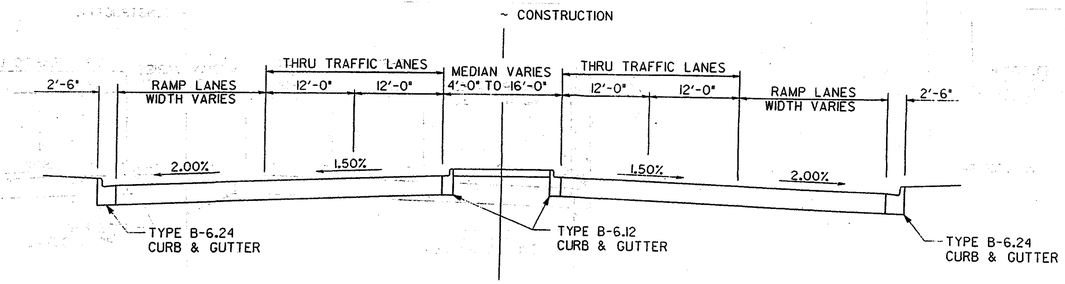
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
STA. _____ TO STA. _____				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



95TH STREET TYPICAL SECTION

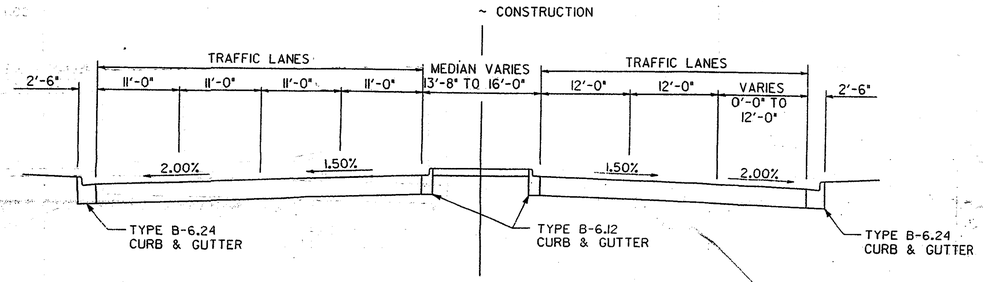
* STA. 111+01.2 TO STA. 119+59.0 (12' LANES)
STA. 119+59.0 TO STA. 121+09.2 (TRANSITION)
** STA. 121+09.2 TO STA. 123+56.3 (11' LANES)

1. 10' CONCRETE MEDIAN WITH C. & G. - STA. 114+31.3 TO STA. 117+86.5
   PAINTED MEDIAN WIDTH VARIES 0' - 10' - STA. 117+86.5 TO STA. 123+56.3
2. CURB AND GUTTER, TYPE B-6.12 UNDER C.X.S. RAILROAD BRIDGE
   STA. 121+55.2 TO STA. 123+25.8
3. WIDTH VARIES 0' TO 12' - STA. 111+01.2 TO STA. 114+01.2



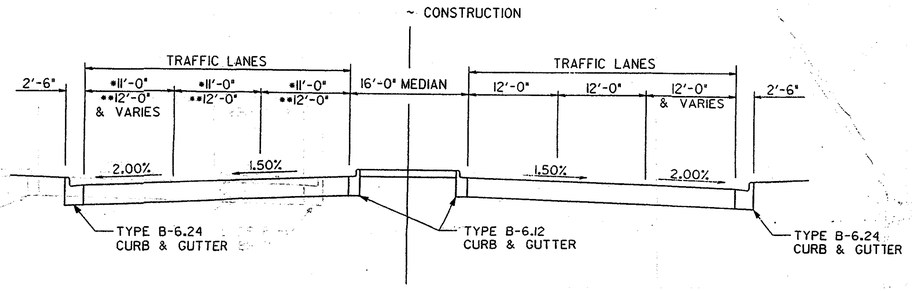
HARLEM AVENUE TYPICAL SECTION

STA. 312+64.5 TO STA. 330+97.9



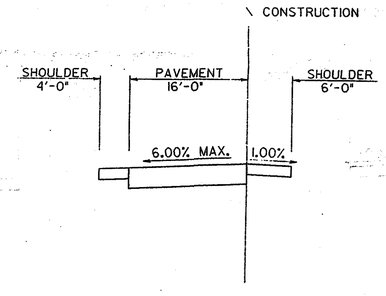
95TH STREET TYPICAL SECTION

STA. 123+56.3 TO STA. 132+87.4

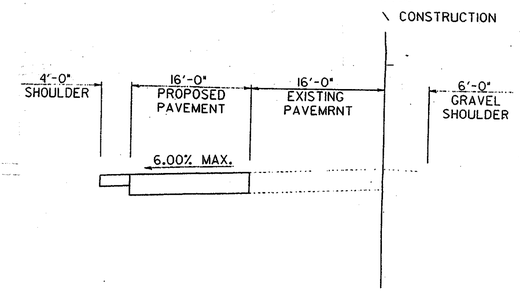


95TH STREET TYPICAL SECTION

* STA. 128+78.6 TO STA. 131+27.4 (11' LANES)
STA. 131+27.4 TO STA. 132+87.4 (TRANSITION)
** STA. 132+87.4 TO STA. 134+00.0 (12' LANES)



RAMP TYPICAL SECTION



RAMP "G" TYPICAL SECTION

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

SCALE: 1"=10'
DATE

DRAWN BY: MXF
CHECKED BY: RJM

PUMP STATION 25
(95th and Harlem Avenue)
Pump Station Evaluation
Proposed Drainage Exhibit

STORM SEWER BEGINS 6580 FEET NORTH
AT 80th STREET AND DRAINS HARLEM AVENUE R.O.W.
SEWER DIAMETER RANGES FROM 15" TO 54"

0' 100' 200' 400'
SCALE: 1"= 200'

N

LEGEND

EXISTING SYSTEMS:
- HARLEM AVENUE
- HARLEM & 95th INTERCHANGE
- BRIDGEVIEW
- 95th

- DRAINAGE DIVIDE
- PROPOSED GEOMETRY
- DITCH
- SWALE
- OUTLET
- SHEET FLOW
- OVERFLOW
- CULVERT END SECTION
- HEADWALL
- PUMP STATION
- "DD" SUBBASIN IDENTIFICATION

NOTES:
1. SOME SMALL LATERALS HAVE BEEN ELIMINATED FOR SIMPLICITY.
2. INDIVIDUAL INLETS ARE NOT SHOWN.
3. STORM SEWER SYSTEMS SHOWN IN THIS PLAN REPRESENT DRAINAGE ALTERNATIVES 1 AND 2.
4. CONTOURS REFLECT THE EXISTING CONDITION AND DO NOT REPRESENT PROPOSED GRADES.
5. DITCH ALONG THE TOE OF RAMP G TO BE REGRADED TO PROVIDE A POSITIVE SLOPE TO STORM SEWER SYSTEM.
6. 0.45 ACRE-FOOT DETENTION POND (0.65 ACRES, 1.7 FEET DEEP) WITH 4-INCH RESTRICTOR IN INLET D TO BE CONSTRUCTED FOR ALTERNATIVES 1 AND 3b. AN 18.0 ACRE-FOOT DETENTION POND(3.2 ACRES, 9 FEET DEEP) WITH EXISTING 15" OUTLET AT D TO BE CONSTRUCTED FOR ALTERNATIVE 2. A 4.8 ACRE-FOOT DETENTION POND (2.5 ACRES, 4 FEET DEEP) WITH PROPOSED 36" OUTLET AT D TO BE CONSTRUCTED FOR ALTERNATIVE 3a.
7. 0.60 ACRE-FOOT DETENTION POND (0.45 ACRES, 2.0 FEET DEEP) TO BE CONSTRUCTED FOR ALTERNATIVES 1, 2, 3a AND 3b. 4" RESTRICTOR TO BE PLACED IN INLET W.
8. BERM ALONG SOUTHERN AND SOUTHWESTERN EDGE OF CENTRAL DETENTION POND TO BE RAISED TO ELEVATION 611 FOR ALTERNATIVES 1 AND 2 WITH OVERTOPPING WEIR AT ELEVATION 610.5, AND 612 WITH OVERTOPPING WEIR AT 611.5 FOR ALTERNATIVES 3a AND 3b. IN ADDITION, 15" RESTRICTOR TO BE REPLACED WITH 24" RESTRICTOR FOR ALTERNATIVE 2.
9. 12" STORM SEWER TO BE REPLACED WITH 1800'-6'X6' BOX CULVERT (OR VOLUMETRICALLY EQUIVALENT PIPE) FOR ALTERNATIVE 3b.

SUB WATERSHED 1
(FROM VILLAGE REPORT)
(APPROX. DIVIDE)

SUB WATERSHED 2
(FROM VILLAGE REPORT)

CENTRAL DETENTION POND

15" RESTRICTOR
NOTE 8

TRI-STATE
N.W. INFIELD

SEVERELY DAMAGED 30" PIPE

NORTHWEST POND OVERTOPS AT 604.5± AND FLOWS WEST ON 95TH STREET

42" STORM SEWER
TO CONVEY OVERFLOW
FROM CENTRAL DETENTION POND
TO NORTHWEST INFIELD.
ATERNATIVES 2 AND 3a

72" STORM SEWER CONTINUES 6350'
TO THE SOUTH AND DRAINS THE
HARLEM AVENUE R.O.W.

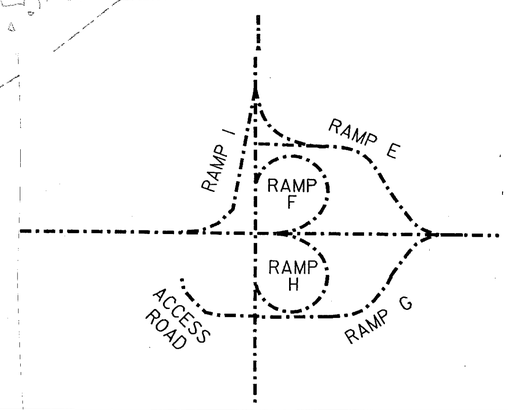
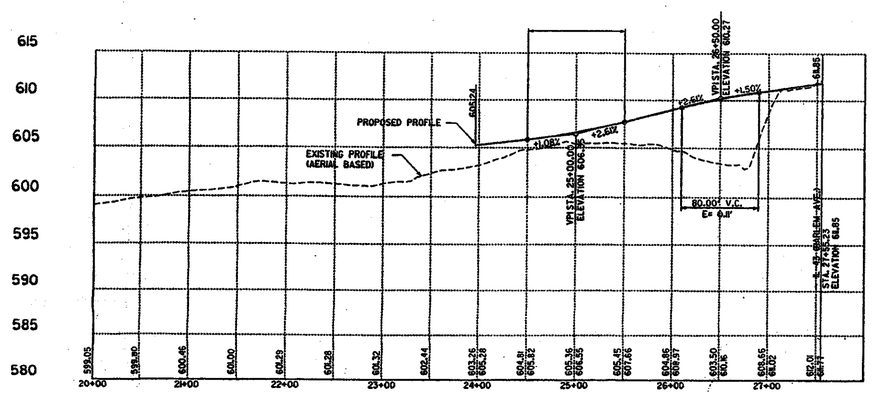


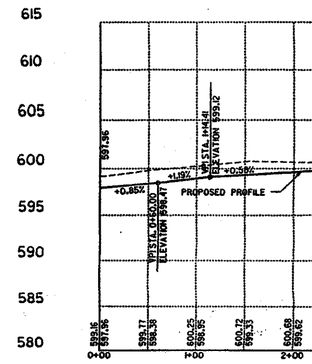
EXHIBIT 2-00A

PROPOSED DRAINAGE PLAN, 1"=200'

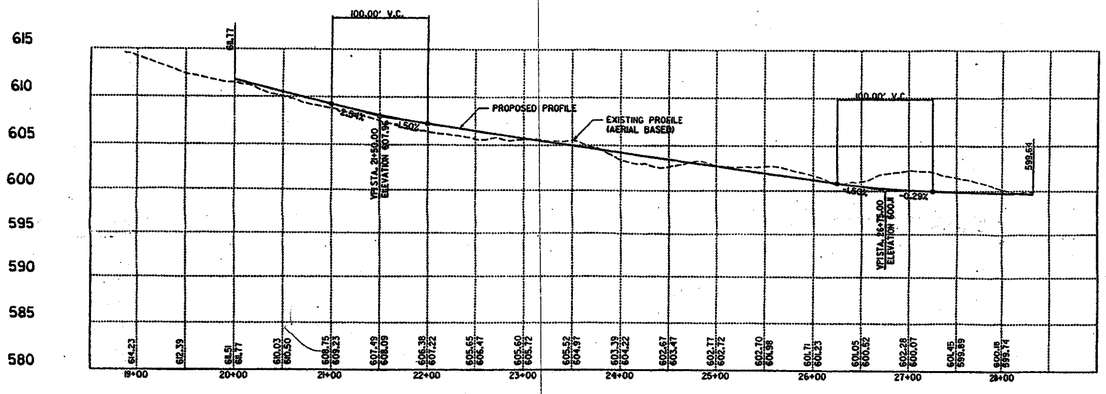
RAMP E2
580-615
20+00 - 27+55.23
EXIST. PROFILE
FROM AERIAL



RAMP H
580-635
0+00 - 4+13.26



RAMP F
580-615
18+50 - 28+33.68
EXIST. PROFILE
FROM AERIAL



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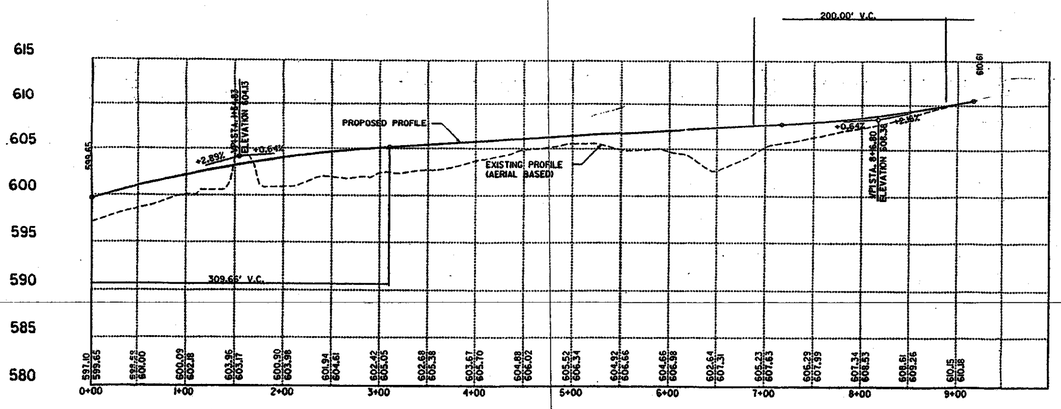

RAMP E
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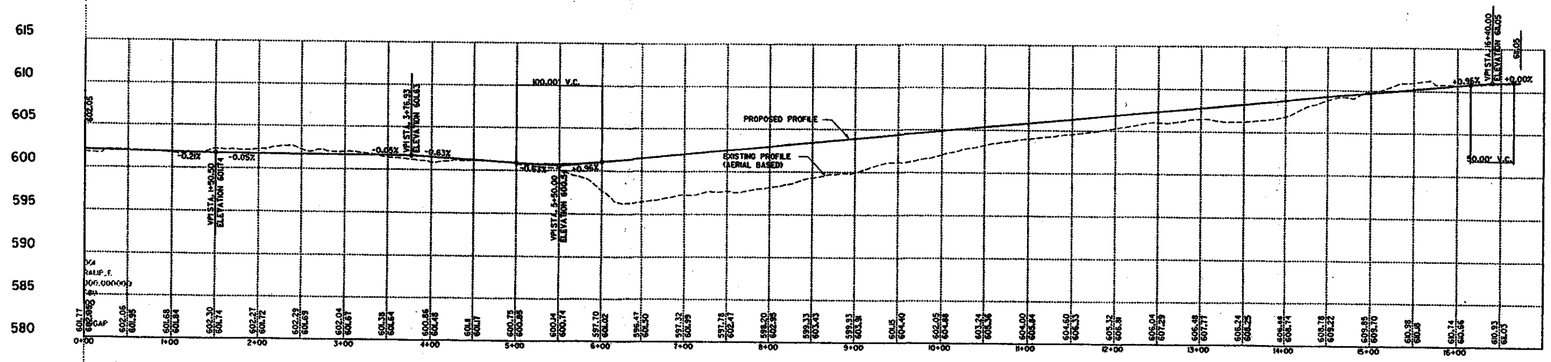
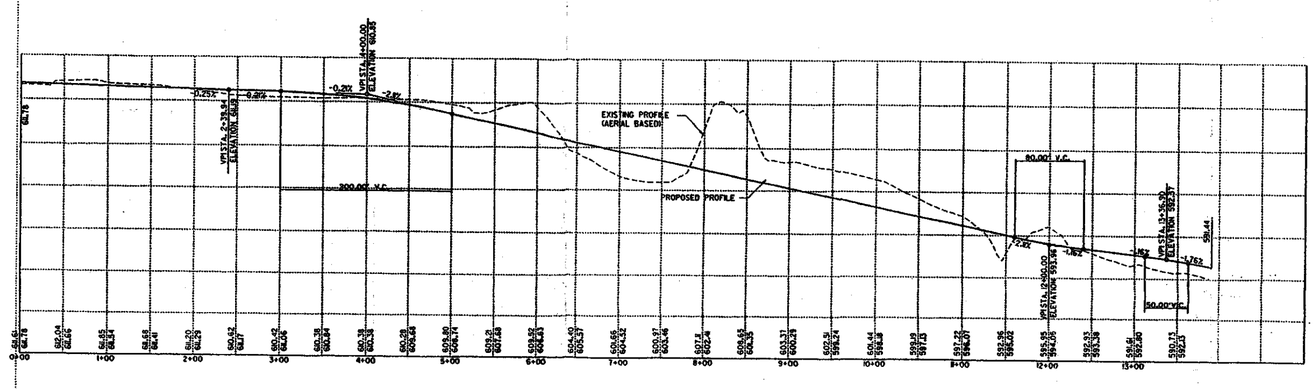
EXIST. PROFILE
FROM AERIAL



RAMP I
580-615
0+00 - 13+90.13



RAMP G
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20+00 - 29+06.54