



KeySpan Corporation
Environmental Asset Management
175 East Old County Road
Hicksville, NY 11801

April 17, 2008

Mr. Amen M. Omorogbe, P.E.
Project Manager
New York State Department of Environmental Conservation
MGP Remedial Section, Division of Environmental Remediation
Bureau of Western Remedial Action, 11th Floor
625 Broadway
Albany, New York 12233-7017

**Re: DRAFT Drainage Network Rehabilitation Interim
Remedial Measure Work Plan
Operable Unit No. 3
Bay Shore/Brightwaters Former MGP Site
Site No. 1-52-172**

Dear Mr. Omorogbe:

KeySpan Corporation (KeySpan) is submitting this Work Plan for the replacement of catch basins and the rehabilitation of storm sewer lines located on Lanier Lane and Cooper Lane in the vicinity of the Operable Unit No. 3 (OU-3) groundwater plume of the Bay Shore/Brightwaters former Manufactured Gas Plant (MGP) site. KeySpan intends to rehabilitate the deteriorating catch basin network to mitigate both nuisance odors and the potential for impacted groundwater to enter the catch basin network in the vicinity of OU-3.

Previous Investigations

KeySpan conducted an investigation that consisted of an evaluation of the existing catch basin network, a zNose[®] odor screening, two rounds of catch basin and ambient air sampling (March 2007 and August 2007), and catch basin sediment sampling. The results of the investigation were presented in a summary report titled *Storm Sewer and Catch Basin Investigation Summary Report*, dated November 15, 2007. The conclusions and recommendations from this report are summarized below.

KeySpan did not identify any locations where the catch basins appear to be influencing ambient air within the community. However, consistently elevated BTEX concentrations were observed within catch basins CB-40 and CB-41 during both sampling events. The elevated BTEX concentrations may be attributed to possible groundwater infiltration from the deterioration of the aging catch basin structures. Catch basin air quality located downgradient from CB-40 and CB-41 does not seem to be affected. Catch basins CB-35, CB-36, CB-37, CB-38, CB-39 and CB-50 were identified by local residents as possible sources of odor. These catch basins are downgradient and interconnected with catch

basins CB-40 and CB-41. Three of these catch basins were sampled (CB-37, CB-38, and CB-50) and there were no exceedances of the NYSDOH 95th percentile background concentrations.

KeySpan has initiated discussions with the Town of Islip of the need to replace or repair catch basins CB-40 and CB-41 to prevent further groundwater infiltration. Replacing catch basins CB-40 and CB-41 with new pre-cast concrete structures will mitigate the catch basin air quality issues at catch basins CB-40 and CB-41 as well as the potential for downgradient migration of vapors to the interconnected catch basins.

Scope of Work

KeySpan intends to rehabilitate the drainage network by a combination of replacing existing drainage structures with impervious pre-cast concrete structures where they intercept the plume and by using cured-in-place lining techniques to rehabilitate existing piping and cleanout structures outside of the plume boundary. The existing drainage network is shown on **Figure 1**. The restored condition is shown on **Figure 2**.

Drainage Structure Replacement

KeySpan will replace two catch basins (CB-40 and CB-41) and one manhole (MH-1) located within the OU-3 offsite groundwater plume. CB-40, CB-41 and MH-1 are aging structures that are constructed of brick and mortar and are being infiltrated by impacted groundwater causing nuisance odors at downgradient locations. Replacing these structures with impervious pre-cast concrete structures will prevent groundwater infiltration, therefore eliminating the potential for impacted groundwater to infiltrate the drainage network. Details of the drainage structures are presented in **Figure 3**.

Drainage Piping/Manhole Rehabilitation

KeySpan intends to rehabilitate the existing drainage piping located between Manhole MH-1 and CB-50 using trenchless lining technology. Lining the existing drainage piping will mitigate the potential for impacted groundwater to infiltrate the existing drainage piping. KeySpan has contracted Progressive Pipeline Management (PPM) of Red Bank, New Jersey to inspect the drainage lines, determine the correct lining material for this application and to implement the technology. The seams within the existing drainage piping will be robotically injected with grout and a cured-in-place liner will be installed throughout the length of the pipe. Manholes MH-2, MH3, and MH-4 will be also be rehabilitated using cured-in-place lining technology.

Permitting

The Contractor will apply for and obtain all necessary Federal, State, and local permits associated with the scope of work. These permits include, but are not limited to, traffic

routing, road opening and/or closure. All drainage structures/improvements will be approved by the Town of Islip, Department of Public Works prior to the start of work.

Restoration

Areas disturbed by the construction activities will be restored to pre-existing conditions. Restoration actions shall include, but may not be limited to:

- Backfilling and compacting the excavated areas
- Removal of all temporary facilities, including decontamination areas and unused materials
- Restoring any grass or landscaping
- Replacing any removed or damaged structures or appurtenances
- Replacement or repair of all asphalt and concrete surfaces removed or damaged

Traffic Management

The Contractor will be responsible for maintaining the flow of traffic on Lanier Lane at all times during construction activities. A traffic management plan is presented on **Figure 4**. Flagmen will be provided by KeySpan's Contractor.

Odor Control

To minimize the potential for the generation of odors during the work, the opened excavation area will be kept as small as practicable. Excavated material stockpiles and containers will be covered with plastic sheeting as appropriate during the work. The Contractor will also provide a backup odor suppressant system consisting of chemical foam (e.g., RusmarTM foam) or other approved method. The material will be stored near the excavation and will be mobile.

Material Handling

If impacted materials are encountered in the excavated areas, they will be containerized, and transported to the Bay Shore OU-1 Site at the end of each work day. Upon characterization, the materials will be transported to an off-site thermal desorption facility. The Contractor will ensure that all soil containers are covered to minimize dust generation. Any soil remaining after completion of backfill activities will be disposed of properly.

Air Monitoring and Vapor/Odor Management Plan

In accordance with NYSDEC and NYSDOH requirements, a Community Air Monitoring Plan (CAMP) will be implemented at the site during the intrusive field activities. The objective of the CAMP is to provide a measure of protection for the downwind

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community (i.e., off-site receptors, including residences and businesses and on-site workers not involved with site IRM activities) from potential airborne contaminant releases as a direct result of intrusive activities. Air monitoring stations will be placed up-wind and downwind of each intrusive work area. Volatile organic compounds (VOCs) and respirable particulates (PM-10) will be monitored at the up-wind and downwind stations on a continuous basis. In addition, to the fixed stations, VOCs and particulates will be monitored in the work zone using hand held equipment. VOCs and particulates will also be monitored around the perimeter of the work zone on a regular basis by the GEI personnel.

Health and Safety

All field activities will comply with the health and safety procedures specified in the NYSDEC-approved site-specific Health and Safety Plan prepared by GEI Consultants, Inc.

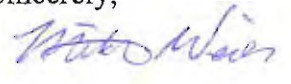
Schedule

The catch basin and manhole replacement is scheduled to begin on April 21, 2008 and be completed in approximately 5 days. The Town of Islip permits have been obtained for this work and a Town of Islip representative will be on site to observe the replacement operations.

The cure-in-place lining operations will commence after the completion of the catch basin and manhole replacement. A schedule for these operations will be provided to the NYSDEC prior to the start of rehabilitation operations.

If you have any questions, feel free to contact me at (516) 545-2586.

Sincerely,

 Mitch Weir (GEI)
for

William J. Ryan
Project Manager

Enclosures

c: J. Nealon (NYSDOH)
W. Parish (NYSDEC Region 1)
R. Paulsen (SCDHS)
T. Leissing (KSE)

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bc: D. Riccobono, Esq. (KSE)
F. Murphy, Esq. (KSE)
B. Needleman, Esq. (McLane)
C. Willard (NG)
S. Ostrow (O&P)
E. Kitt (GEI)
M. O'Neil (GEI)
J. Parillo (GEI)

INTERIM REMEDIAL MEASURE DRAWINGS

BAY SHORE/BRIGHTWATERS FORMER MGP SITE

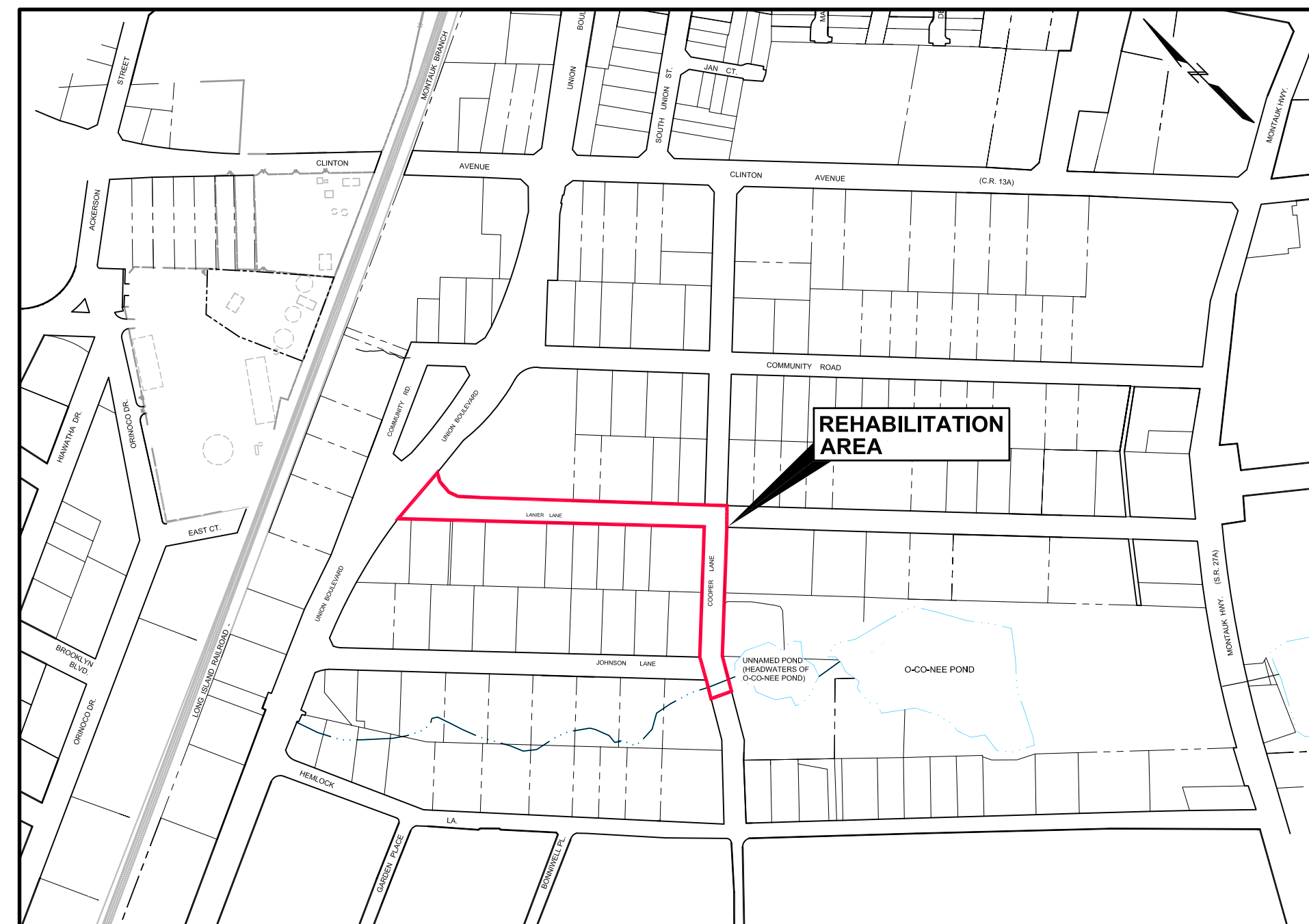
OPERABLE UNIT No. 3 DRAINAGE NETWORK REHABILITATION

BAY SHORE, NEW YORK



SOURCE:
U.S.G.S. TOPOGRAPHIC MAP, 1:24,000, BAY SHORE WEST, NY, REVISED 1979. MAP CREATED WITH TOPOI © 2001 NATIONAL GEOGRAPHIC (www.nationalgeographic.com/topo)

REGIONAL MAP
SCALE: 1" = 1 MILE



IRM LOCATION
SCALE: 1" = 1000'

PREPARED FOR:

KEYSPAN CORPORATION
ONE METRO TECH CENTER
BROOKLYN, NEW YORK



455 WINDING BROOK DRIVE
GLASTONBURY, CT 06450
860-368-5300, FAX 860-368-5307
www.geiconsultants.com

PROJECT NUMBER: 061140-11-2001
April 2008

SCHEDULE OF DRAWINGS

1. EXISTING CONDITIONS
2. SITE MANAGEMENT PLAN - PHASES 1 & 2
RESTORED CONDITION
3. RESTORATION DETAILS
4. TRAFFIC PLAN - PHASE 1 AND 2

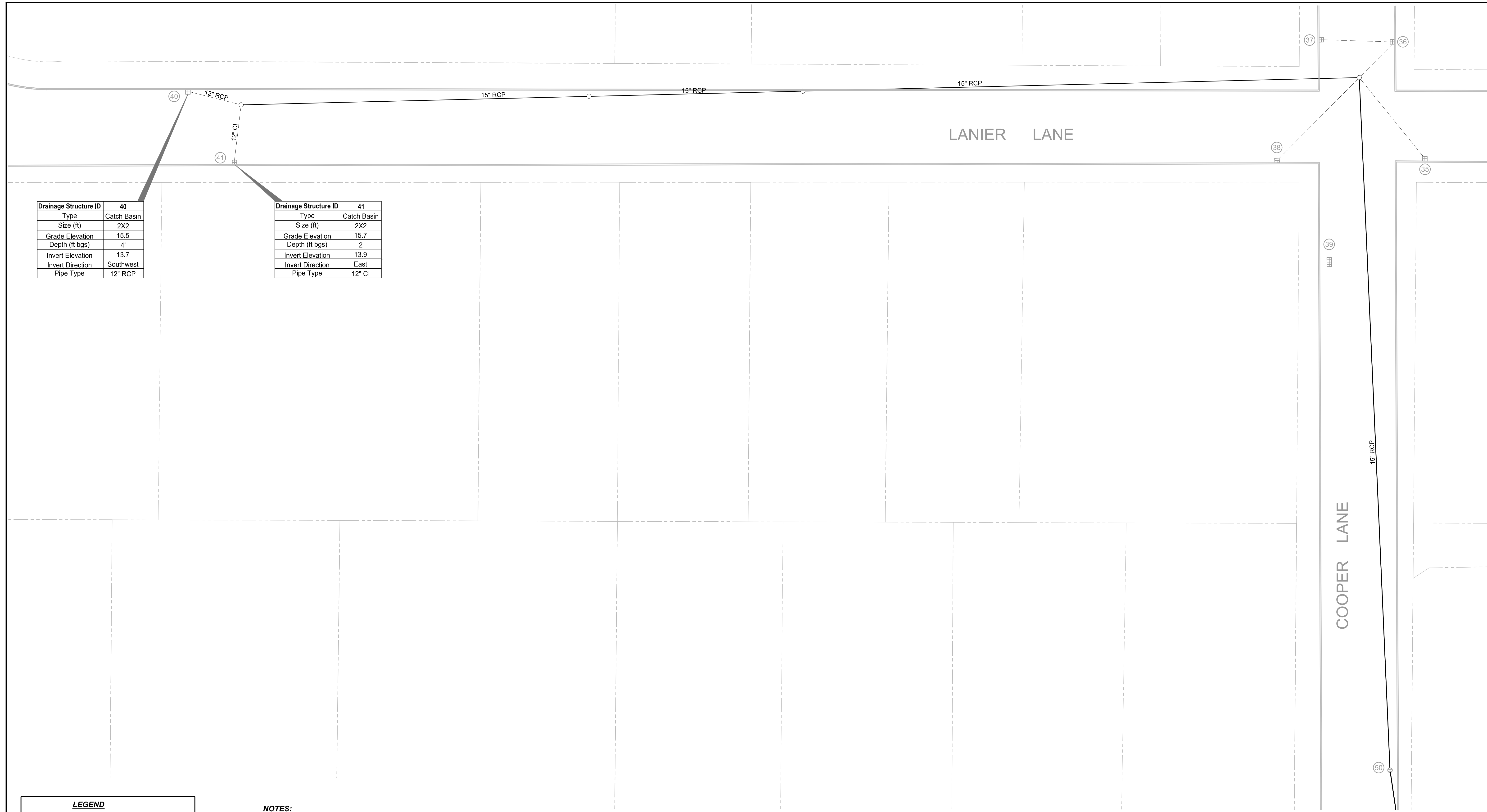


811 Know what's below.
Call before you dig.

811 Determine lo que está bajo tierra.
Llama antes de excavar.

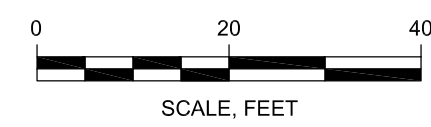
NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	DES	DR	CH	APP



Drainage Structure ID	40
Type	Catch Basin
Size (ft)	2X2
Grade Elevation	15.5
Depth (ft bgs)	4'
Invert Elevation	13.7
Invert Direction	Southwest
Pipe Type	12" RCP

Drainage Structure ID	41
Type	Catch Basin
Size (ft)	2X2
Grade Elevation	15.7
Depth (ft bgs)	2
Invert Elevation	13.9
Invert Direction	East
Pipe Type	12" CI

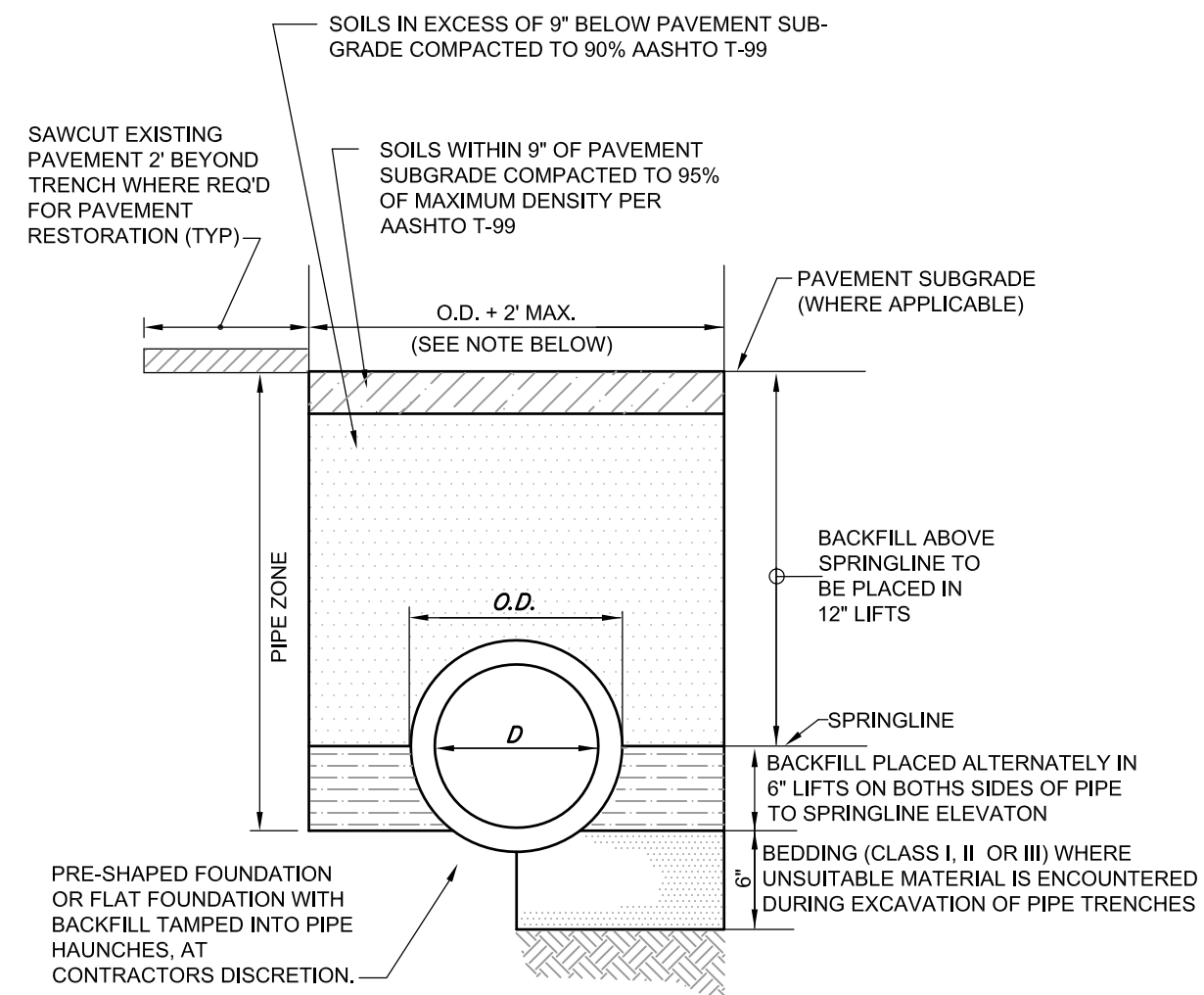


LEGEND	
	MAIN DRAINAGE PIPING (APPROXIMATE LOCATION)
	SECONDARY DRAINAGE PIPING (APPROXIMATE LOCATION)
	EXISTING DRAINAGE MANHOLE LOCATION
	EXISTING CATCH BASIN LOCATION
	CURB LOCATION (APPROXIMATE)

- NOTES:**
- PROPERTY BOUNDARY LOCATIONS WERE DETERMINED BY OTHERS USING AERIAL PHOTOGRAPHS AND TAX MAPS. PROPERTY BOUNDARIES ARE APPROXIMATE.
 - EDGE OF ROAD SURFACE WAS DETERMINED BASED ON THE NELSON AND POPE SURVEY OF THE CATCH BASINS. EDGE OF THE ROAD IS APPROXIMATE AND FOR REFERENCE ONLY.
 - DRAINAGE FEATURES DEPICTED BASED ON SURVEYS CONDUCTED BY NELSON & POPE ON JANUARY 23, 2007, JANUARY 31, 2007 AND SEPTEMBER 19, 2007.

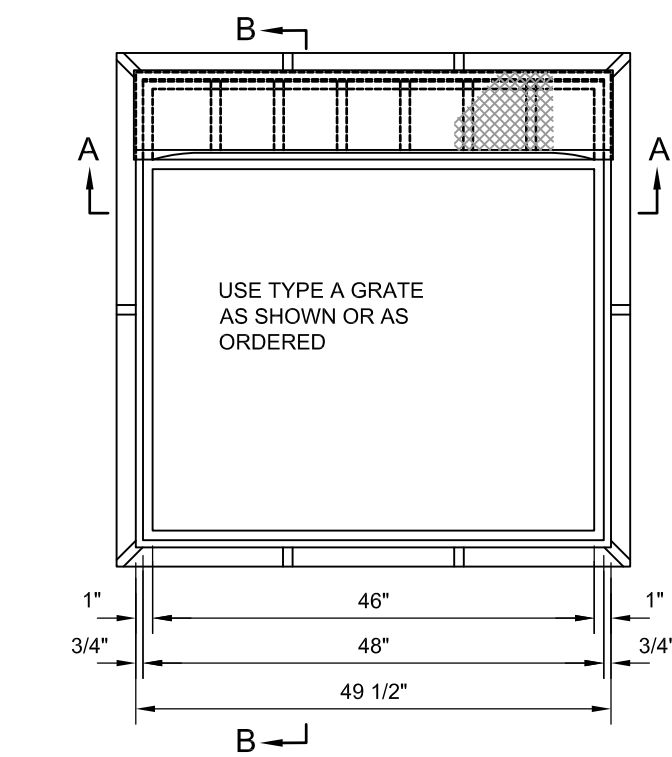
NOT FOR CONSTRUCTION

					DESIGNED BY <i>JP</i>	KEYSPAN CORPORATION	INTERIM REMEDIAL MEASURE DRAWINGS BAY SHORE/BRIGHTWATERS FORMER MGP SITE OPERABLE UNIT No. 3 DRAINAGE NETWORK REHABILITATION BAY SHORE, NEW YORK		FIG. NO.
					DRAWN BY <i>SCG</i>		455 WINDING BROOK DRIVE GLASTONBURY, CT 06450 860-388-5300, FAX 860-388-5307 WWW.GEICONULTANTS.COM	EXISTING CONDITIONS	
					CHECKED BY ---	455 WINDING BROOK DRIVE GLASTONBURY, CT 06450 860-388-5300, FAX 860-388-5307 WWW.GEICONULTANTS.COM		GEI PROJECT	
					APPROVED BY ---		061140-11-2001		1 of 4
					DATE <i>04/16/08</i>				A
NO.	DATE	DESCRIPTION	DES	DR	CH	APP			

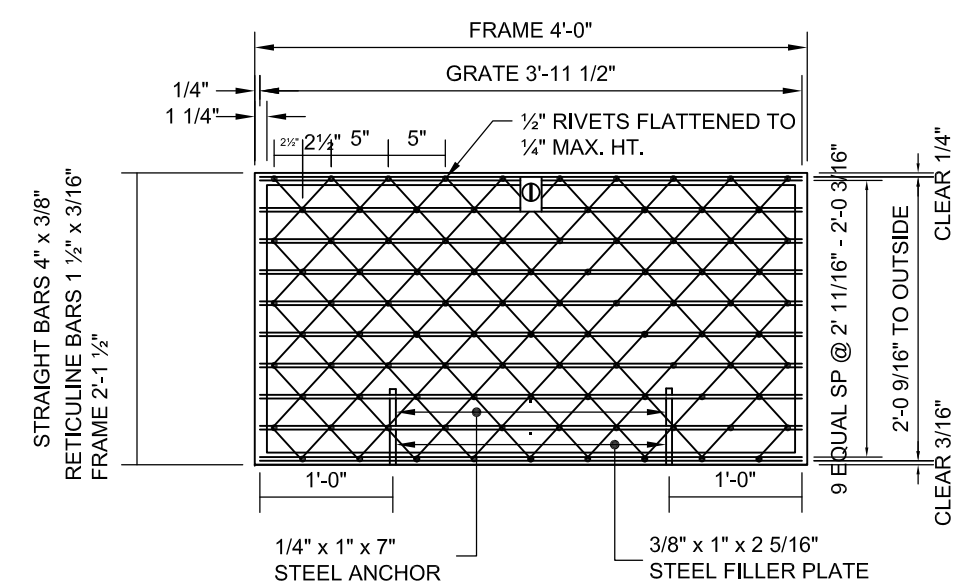


- NOTES:**
1. CLASS I, II, III OR IV COMPACTED BACKFILL MATERIAL REQUIRED IN ALL PIPE ZONES, PER USCS (UNIFIED SOIL CLASSIFICATION SYSTEM).
 2. IF DEPTH OF TRENCH EXCEEDS 5', THE CONTRACTOR MUST PROVIDE SHEETING AND BRACING OR A SHEETING BOX IN ACCORDANCE WITH OSHA REGULATIONS. AS AN ALTERNATE, IF PERMITTED BY THE ENGINEER, THE TRENCH WALLS MAY BE CUT BACK TO A 1:1 SLOPE OR THE NATURAL ANGLE OF REPOSE FOR THE SOIL, WHICHEVER IS GREATER.
 3. WHERE PIPE IS INSTALLED WITH LESS THAN 2' OF COVER, ALL BACKFILL MATERIAL THROUGHOUT THE PIPE ZONE IS TO BE CLASS I MATERIAL.
 4. DRAINAGE PIPING WILL BE SLOPED AT .01%.

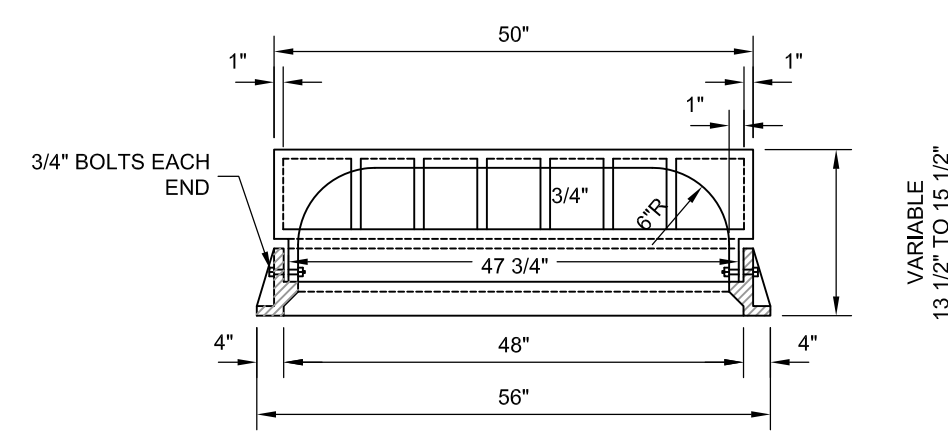
PIPE TRENCH DETAIL
NOT TO SCALE



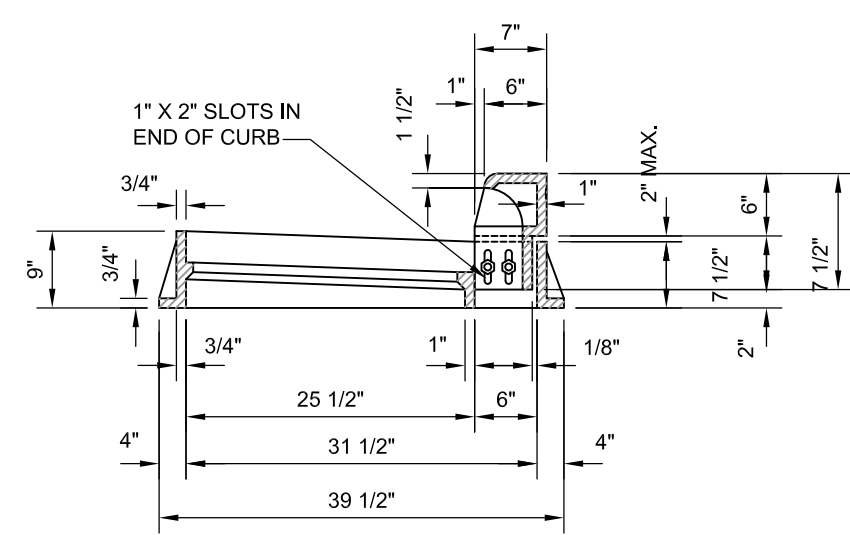
CATCH BASIN DETAIL - TYPE C ITEM 102 CB
PLAN VIEW



FABRICATED STEEL GRATE
TYPE A



SECTION A-A

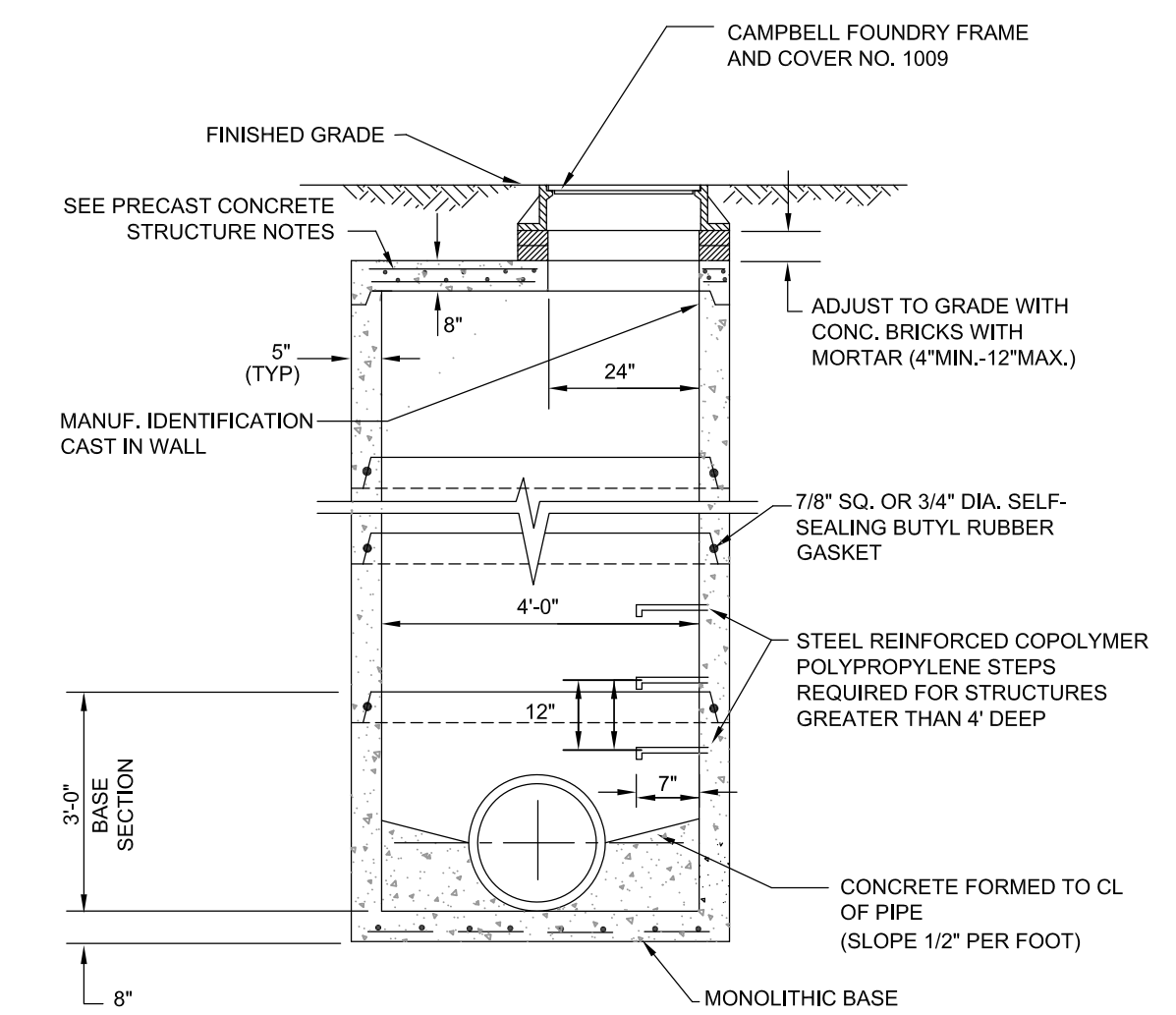


SECTION B-B
C.I. CURB BOX & FRAME TYPE A

NOTE: DIMENSIONS MAY VARY SLIGHTLY ACCORDING TO MANUFACTURER

CATCH BASIN - TYPE C
CURB FRAME AND GRATE DETAIL

NOT TO SCALE



MANHOLE TYPE "A"

NOTE: MANHOLE RISER SECTION TO BE FURNISHED IN 1, 2, 3 OR 4' HEIGHTS AS REQUIRED.

MANHOLE SIZE	PIPE SIZE	MAXIMUM ALLOWABLE PIPE DEFLECTION
4' DIA.	36" MAX. 20"	
	30" MAX. 30"	
	24" MAX. 75"	
5' DIA.	48" MAX. 10"	
	42" MAX. 40"	
	36" MAX. 65"	
6' DIA.	54" MAX. 30"	
	48" MAX. 50"	
	42" MAX. 70"	

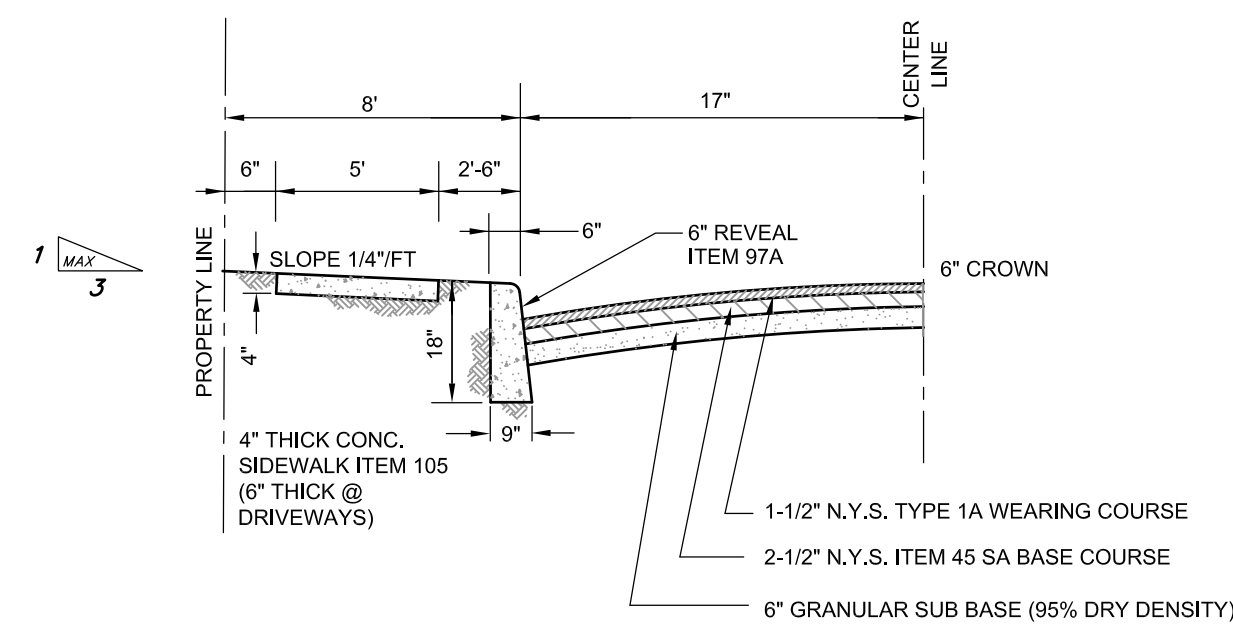
ITEM 102 MH A OR B

STORM DRAINAGE MANHOLE ITEM 102-MH

NOT TO SCALE

NOTES:

1. DETAILS PROVIDED BY THE TOWN OF ISLIP, SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, 2004.

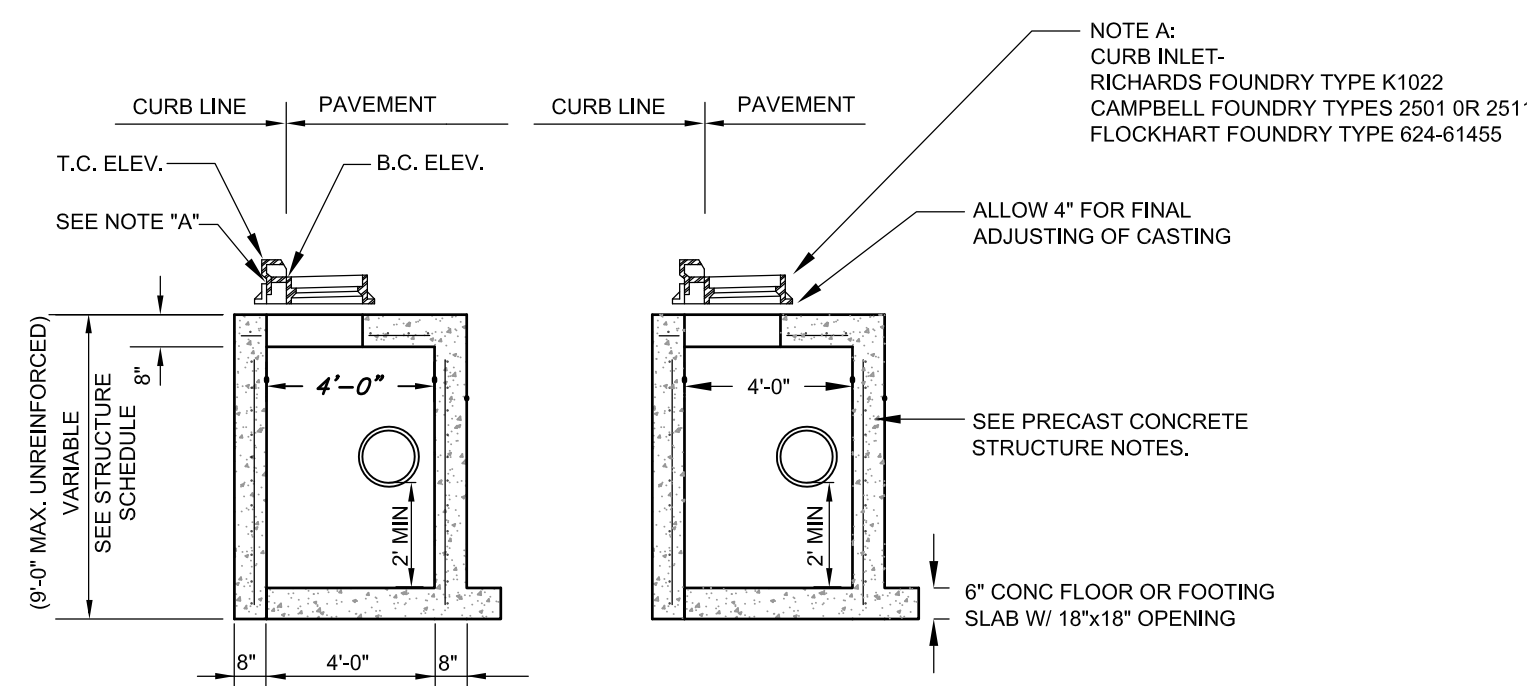


DIMENSIONS SHOWN FOR 50' RIGHT-OF-WAY

TYPICAL ROAD SECTION
NOT TO SCALE

GENERAL NOTES:

1. ALL ROAD SECTIONS SHALL BE SYMMETRICAL ABOUT CENTER LINE.
2. ALL POLES, HYDRANTS, ETC. SHALL NOT BE PLACED WITHIN THE SEEDED SIDEWALK AREA. THE FACES OF SUCH POLES, HYDRANTS, ETC. SHALL NOT BE MORE THAN 1'-0" FROM THE EDGE OF THE TRAVELWAY OR FACE OF CURB.
3. ALL UTILITIES SHALL BE INSTALLED PRIOR TO CONSTRUCTION OF SUB-BASE.
4. ROAD SECTIONS FOR WIDTHS OTHER THAN THOSE SHOWN, OR FOR SPECIAL TOPOGRAPHICAL CONDITIONS, ARE TO BE SPECIALLY APPROVED.
5. THE CROSS SECTION SHALL BE AS SHOWN ON THIS SHEET OF TYPICAL ROAD SECTIONS.
6. THEY SHALL BE PROPERLY SURFACED FOR THE FULL WIDTH OF THE TRAVEL WAY.
7. THEY SHALL BE PROPERLY GRADED IN ACCORDANCE WITH THE APPROVED PROFILE.
8. CONCRETE CURBS SHALL BE REQUIRED ON ALL STREETS.
9. ALL MATERIALS SHALL CONFORM TO THE SPECIFICATIONS FOR THE ITEM SHOWN.
10. FIELD COMPACTATION OF ASPHALT SHALL BE 95% OF DESIGN DENSITY. A LABORATORY SPECIMEN MADE IN THE PROPORTIONS OF THE JOB MIX FORMULA FOR EACH CLASS MIX COMPACTED BY 75 BLOWS ON EACH FACE OF A 2 1/2" THICK SPECIMEN BY A STANDARD MARSHALL HAMMER SHALL BE AS THE STANDARD FOR DENSITY COMPARISON.
11. ASPHALT SURFACE SHALL HAVE A COMPRESSIVE STRENGTH OF 100 P.S.I.
12. C.B.R. VALUE OF 6" GRANULAR SUB-BASE SHALL BE 80.
13. C.B.R. VALUE OF SUB-BASE SHALL BE 20.



SECTION A-A
ALTERNATE

SECTION A-A

CATCH BASIN - ITEM 102 CB

NOT TO SCALE

NOT FOR CONSTRUCTION

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JP

DRAWN BY
SCG

CHECKED BY

APPROVED BY

DATE
04/16/08

KEYSPAN CORPORATION



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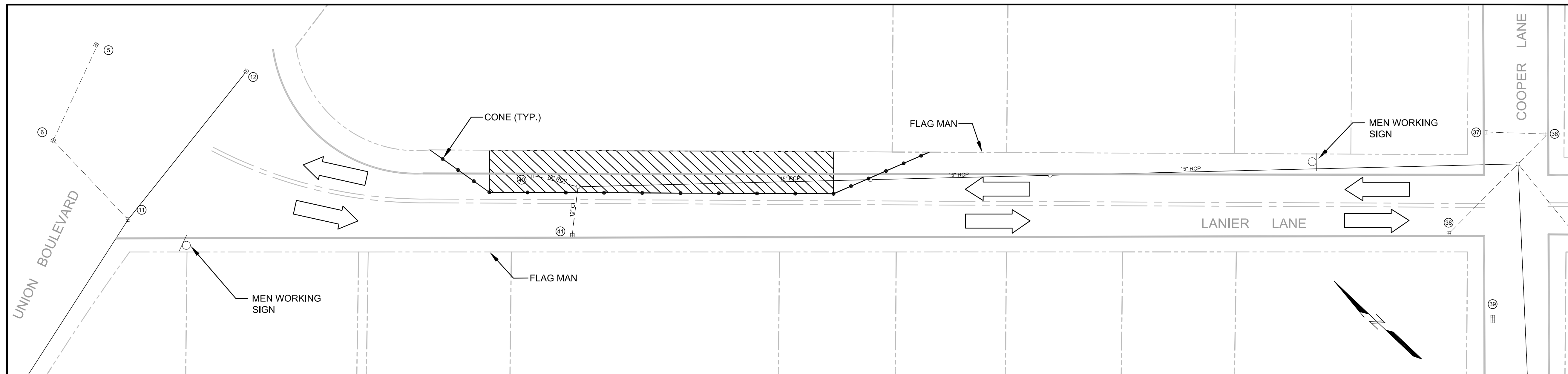
INTERIM REMEDIAL MEASURE DRAWINGS
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
OPERABLE UNIT No. 3 DRAINAGE NETWORK REHABILITATION
BAY SHORE, NEW YORK

RESTORATION DETAILS

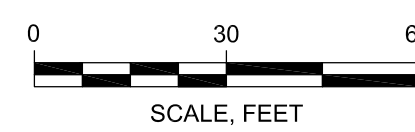
GEI PROJECT
061140-11-2001

SHEET NO.
3 of 4

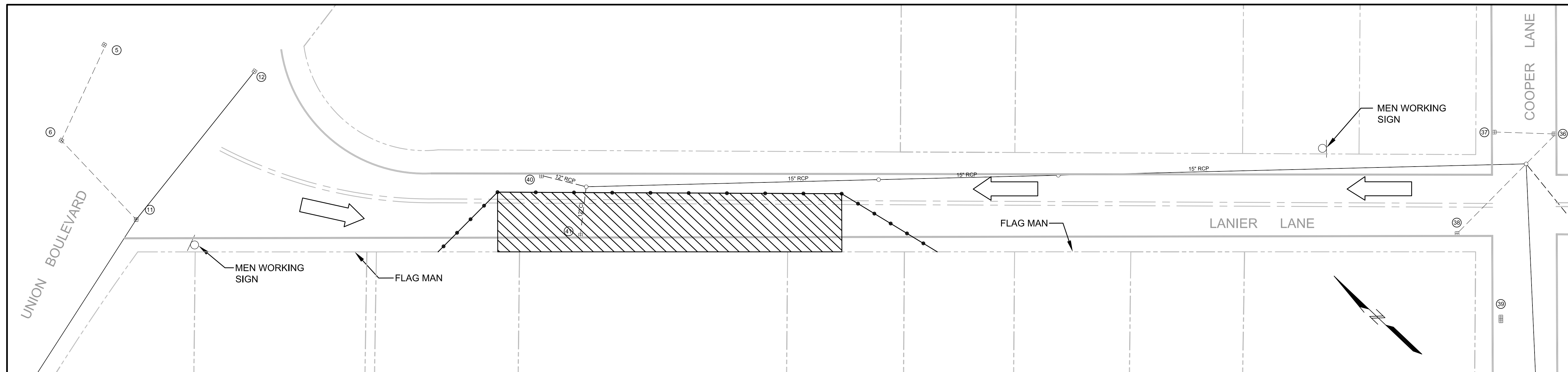
FIG. NO.
3
ISSUE
A



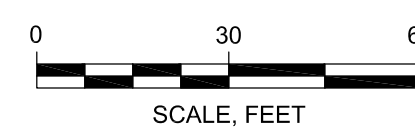
MAINTENANCE OF TRAFFIC FOR PHASE 1 CONSTRUCTION



LEGEND	
	MAIN DRAINAGE PIPING (APPROXIMATE LOCATION)
	SECONDARY DRAINAGE PIPING (APPROXIMATE LOCATION)
	EXISTING DRAINAGE MANHOLE LOCATION
	EXISTING CATCH BASIN LOCATION
	TRAFFIC CONE LOCATION



MAINTENANCE OF TRAFFIC FOR PHASE 2 CONSTRUCTION



NOTES:

- PROPERTY BOUNDARY LOCATIONS WERE DETERMINED BY OTHERS USING AERIAL PHOTOGRAPHS AND TAX MAPS. PROPERTY BOUNDARIES ARE APPROXIMATE.
- EDGE OF ROAD SURFACE WAS DETERMINED BASED ON THE NELSON AND POPE SURVEY OF THE CATCH BASINS. EDGE OF THE ROAD IS APPROXIMATE AND FOR REFERENCE ONLY.
- DRAINAGE FEATURES DEPICTED BASED ON SURVEYS CONDUCTED BY NELSON & POPE ON JANUARY 23, 2007, JANUARY 31, 2007 AND SEPTEMBER 19, 2007.
- THE FLOW OF TRAFFIC WILL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.

NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	DES	DR	CH	APP

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JP
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SCG
CHECKED BY

APPROVED BY

DATE
04/16/08

KEYSPAN CORPORATION



455 WINDING BROOK DRIVE
GLASTONBURY, CT 06450
860-368-5300, FAX 860-368-5307
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INTERIM REMEDIAL MEASURE DRAWINGS
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
OPERABLE UNIT No. 3 DRAINAGE NETWORK REHABILITATION
BAY SHORE, NEW YORK

**TRAFFIC PLAN
PHASE 1 AND PHASE 2**

GEI PROJECT SHEET NO.
061140-11-2001 4 of 4

FIG. NO.
4
ISSUE
A