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report.HW915151.1998-07-20.WORK PLAN.pdf

Project Site numbers will be proceeded by the following:

Municipal Brownfields - b
Superfund - hw
Spills - sp
ERP - e
VCP - v
BCP - c

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DAMES & MOORE
A DAMES & MOORE GROUP COMPANY
3065 Southwestern Blvd., Suite 202
Orchard Park, New York 14127.
(716) 675-7130
FAX (716) 675-7136

WORK PLAN
For Final Building Decontamination
and Site Restoration

General Electric Company
318 Urban Street Site
NYSDEC Site No. 915151
Buffalo, New York

Prepared for:

General Electric Company
Schenectady, New York

July 20, 1998
28171-649-152

WORK PLAN
FOR FINAL BUILDING DECONTAMINATION AND SITE RESTORATION

GENERAL ELECTRIC COMPANY
318 URBAN STREET SITE
NYSDEC SITE NO. 915151
BUFFALO, NEW YORK

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WORK PLAN
FOR FINAL BUILDING DECONTAMINATION AND SITE RESTORATION

GENERAL ELECTRIC COMPANY
318 URBAN STREET SITE
NYSDEC SITE NO. 915151
BUFFALO, NEW YORK

1.0 INTRODUCTION

This Work Plan presents General Electric Company's (GE's) approach, procedures and methods to complete the remedial activities for the building decontamination and soil remediation program for GE's former apparatus service facility at 318 Urban Street in Buffalo, New York. The building decontamination and soil remediation program, as well as the previously completed on-site sewer replacement and off-site sewer cleaning and sampling program, are being completed in accordance with the requirements of New York State Department of Environmental Conservation (NYSDEC) Order on Consent (Index #B9-0388-91-09) (the Order).

The scope of the building decontamination and soil remediation activities are presented in two ERM-Northeast, Inc. (ERM) documents:

- *Remediation Design/Remedial Action Workplan, 318 Urban Street, Buffalo, New York, DEC Site #915151*, dated September 20, 1995 (*RD/RA Workplan*); and

- *Project Manual, Building Decontamination and Soil Remediation, 318 Urban Street, Buffalo, New York 14211*, dated March 15, 1997 (*Project Manual*).

Both documents were approved by the NYSDEC.

In January 1998, GE submitted a work plan to the NYSDEC to complete the final remedial activities:

- *Work Plan For Final Remedial Activities, 318 Urban Street, NYSDEC Site No. 915151, Buffalo, New York*, dated January 5, 1998, prepared by Dames & Moore.

The January 1998 Work Plan was prepared in response to a December 8, 1997 meeting between GE, NYSDEC, and the Buffalo Sewer Authority (BSA), and the NYSDEC's subsequent December 17, 1997 letter. The *January 1998 Work Plan* was a supplement to the *RD/RA Workplan* and *Project Manual* regarding completion of the remaining remedial activities for the site.

Tasks 1 through 5 of the January 1998 Work Plan have been completed. However, because of concerns raised by Mr. Mike Sweeney of Sweeney Steel regarding the encapsulation of the building floor, Tasks 6 through 8 have not been completed. To completed the building decontamination, the building floor will be remediated by removing the existing concrete floor and installing a new concrete floor. The purpose of this Work Plan is to document the planned and remaining remedial activities that GE will complete to meet the requirements of the Order for the 318 Urban Street site.

More specifically, this Work Plan amends Dames & Moore's January 1998 Work Plan and, thus, is the document of record regarding future remedial work at the Urban Street site.

This Work Plan contains five sections. Section 2.0 describes the work that has previously been completed for the site and outlines the planned remedial activities. Section 3.0 discusses the technical approach to completing the remedial program for the site. The scope of work for the remaining site activities are described in Section 4.0. Section 5.0 presents a schedule to complete the planned site work.

2.0 BACKGROUND

2.1 COMPLETED WORK

Beginning in June 1992, GE entered into an Order on Consent with the NYSDEC to complete a remedial investigation and feasibility study for the site. The initial remedial investigation was completed in November 1992.

Based on the results of the initial remedial investigation, GE completed several interim remedial measures (IRMs) between November 1992 and May 1994. For these programs GE:

- Remediated residential areas north of the site by excavating and off-site disposal of surficial soil from residential properties that border the site to the north.

- Cleaned and removed the sediments from the on-site sewers. The sediment were disposed off-site.

- Remediated the playground area east of the site by excavating and off-site disposal of surficial soil from the playground that borders the site to the east.

After GE completed a supplemental remedial investigation in November 1993 and a feasibility study in May 1994, the NYSDEC issued a Record of Decision (ROD) for the site in May 1995. The ROD stated that GE must:

- Decontaminate the main building and demolish and dispose of the smaller storage building on the site.
- Excavate and dispose off-site, soil that exceeds the remediation goals (1 and 10 mg/kg PCBs) at a permitted landfill.
- Backfill the excavations with clean, imported soil or soil from other areas of the site that contains PCBs at concentrations less than the remediation goals. More specifically, deep excavations may be backfilled with the soil containing up to 10 mg/kg PCBs while the top 12 inches of backfill must contain less than 1 mg/kg PCBs.
- Cover the excavated areas with topsoil and seeding.
- Flush and vacuum the sewers and transport the collected sediments and water to an off-site facility for treatment and disposal.
- Implement a monitoring program that will assess the effectiveness of the remedy.

The ROD also states that some PCB-contaminated soil can remain below ground to maintain the structural integrity of the building foundation. Deed restrictions would be put into place to preclude future on-site construction that might disturb the remaining contaminated soil.

In September 1996, GE entered into the Order with the NYSDEC to implement the preferred remedy outlined in the ROD. In the Fall of 1996, GE completed the initial remedial activities under the Order. During this initial remedial phase, GE:

- Decontaminated the roof.
- Decontaminated the roof drain pipes and floor drains in the building.
- Demolished the smaller storage building on-site.

- Excavated, removed and replaced the on-site sewers, including the manhole on French Street.

- Flushed and vacuumed off-site sewers including:

  - French Street southern sewer from 318 Urban Street east to Moselle Street;

  - Moselle Street sewer from French Street north to E. Ferry Street;

  - The E. Ferry Street sewer west from Moselle Street through the connection of the Railroad right-of-way sewer line (Belt Line sewer); and

  - The Belt Line sewer from south of Urban Street north to E. Ferry Street.

The details of the completed work are documented in ERM's report, entitled *Final Engineering Report and Certification, Roof Decontamination, Roof Drain and Floor Drain Cleaning, On-site Sewer Replacement, and Off-Site Sewer Cleaning Project, 318 Urban Street, Buffalo, New York, Site No. 915151*, dated October 1997. GE provided copies of this report to both the NYSDEC and the Buffalo Sewer Authority (BSA).

In the Spring of 1997, GE began the remedial work for the building decontamination and soil remediation. The building decontamination and the soil remediation are documented in ERM's March 1997 *Project Manual*. To date, GE has:

- Begun to decontaminate the interior of the building. The work that has been completed includes the cleaning and removal of Sweeney Steel's equipment, the removal and disposal of the windows, removal and disposal of the wood-block floor, and the demolition and disposal of the interior office area;

- Excavated the soil between the building and the property line and disposed of the soil off-site; and

- Flushed and vacuumed the off-site sewers downstream of the site and disposed of the collected water and sediment.

In January 1998, GE began the remedial work presented in the January 1998 Work Plan and completed Tasks 1 through 5 in June 1998. For Tasks 1 through 5, GE:

- Submitted a waiver request to the U.S. Environmental Protection Agency (USEPA) to encapsulate the PCBs in the floor. To date, a response from the USEPA on the waiver request has not been received.

- Flushed and vacuumed the on-site sewers and sections of the off-site sewer on Urban Street and French Street to remove residual PCBs.

- Completed a five month sewer sampling program to evaluate the quality of the water and sediment in the on- and off-site combined sanitary and storm sewers near the site.

- Completed an inventory of known discharge points from the sanitary and storm sewer connections from the building to the on- and off-site sewers.

- Prepared a bid package and received contractor bids for the remaining remedial work based on the changes and modifications presented in the January 1998 Work Plan.

2.2 FUTURE WORK

To complete the building decontamination and soil remediation program for the site, GE will:

On-Site

- Decontaminate the interior of the building including the ceiling, skylight windows, walls, floor of the West Mezzanine, and the Johnson Heater unit;

- Reconnect the electricity to the building.

- Paint the interior of the building;

- Remove most of the main concrete floor and install a new concrete floor; and

- Repair and replace the asphalt parking areas.

Off-Site

- Monitor and evaluate the water and sediment quality in off-site sewers downstream of the site.

The purpose of this Work Plan is to document the program that GE will implement to completed the site remediation and meet the requirements of the Order.

3.0 TECHNICAL APPROACH

The technical approach to complete the building decontamination and soil remediation program for the site includes:

- Removal of potential source areas of PCBs within the building and in both the on- and off-site sewers;
- Minimize worker and other exposure pathways to residual PCBs in the concrete floor of the building and in the soil near the building foundation; and
- Evaluate the long-term effectiveness of the remedial program.

To do this, GE will:

- Decontaminate the remainder of the building using the procedures and methods specified in the *Project Manual*;
- Remediate the existing concrete floor by removing most of the floor and replacing it with a new concrete floor; and
- Implement a monitoring program that will evaluate the adequacy of the on-site remediation and the cleaning of the off-site sewers.

4.0 SCOPE OF WORK

The scope of work has been divided into these three tasks:

Task 1 - Decontaminate Building Interior
Task 2 - Remove and Replace the Building Floor
Task 3 - Implement an Operation & Maintenance Program

The details of each of these three tasks are described in the following sections.

4.1 TASK 1 - DECONTAMINATE THE INTERIOR OF THE BUILDING

After GE selects a contractor to complete the remaining remedial activities, the building interior will be decontaminated in accordance with the requirements of the *Project Manual*. More specifically, to decontaminate the building, GE will:

- Powerwash the ceiling, skylight windows, walls, detanking pit, and floors of the west mezzanine, bathroom and store room;
- Hand clean the Johnson Heater unit, overhead cranes, around the electrical circuitry, lighting fixtures and other areas where rinse water has the potential to escape the confines of the interior;
- Paint the interior walls and ceiling; and
- Reconnect the building's electrical system.

For the exterior of the site, GE will repair the asphalt parking area and replace the parking area in accordance with the program outlined in the *Project Manual*. Paving the parking areas with asphalt will be the final component of the site restoration.

The water that is generated during powerwashing will be managed by:

- Using plastic sheeting to cover cracked or open areas of the existing concrete floor;
- The water will be collected and squeegeed from the floor to a common point and collected with a vacuum truck
- The collected water will be contained in an on-site tank for pick-up and transport to an off-site disposal facility.

After the building interior is cleaned, GE will collect wipe samples to document the adequacy of the building decontamination. However, no confirmatory samples will be collected for those areas where the wipe samples collected in December 1997 indicated that the residual PCB levels are less than the remedial goals for the site (10 ug/100 cm^2 PCBs).

GE will collect and analyze confirmatory wipe samples in accordance with the NYSDEC-approved *Confirmatory Sampling Plan, Building Decontamination and Soil Remediation, 318 Urban Street, Buffalo, New York*, dated June 4, 1997, which was prepared by Dames & Moore. In summary, the confirmatory sampling plan includes:

- Six wipe samples for both the north and south walls;
- Four wipe samples for both the east and west walls;
- Six wipe samples from the ceiling;
- Three wipe samples for each of two banks of skylight windows;
- Six wipe samples from the Johnson Heater unit; and
- One wipe sample for each wall and the bottom of the detanking pit, including one chip sample of the concrete.

GE will field screen the confirmatory wipe samples for PCBs using Strategic Diagnostics, Inc's EnviroGard immunoassay test kits. Concrete chip samples will be submitted for laboratory analysis of PCBs (EPA Method 8080).

The progress of the interior decontamination and results of confirmatory sampling will be reported in the ongoing monthly status reports to the NYSDEC. After the completion of the building decontamination, the details of the work will be described in the final report.

4.2 TASK 2 - REMOVE AND REPLACE THE BUILDING FLOOR

After the interior of the building is decontaminated, approximately 80 percent of the existing concrete floor of the building will be removed and a new concrete floor will be installed in the building. Figures 1 and 2 show the area of floor that will be removed and replaced, and the associated construction details of the new floor, respectively. The details of the new concrete floor are based on the information and specifications provided to GE by Sweeney Steel; a copy of which is provided in Appendix A.

After removal of the concrete floor, surface soil samples from beneath the floor (0 to 6 inches in depth) will be collected on approximate 40 to 45 foot centers for confirmatory analyses. A total of 12 soil samples will be collected from the floor area for field screening analysis. Areas of subsurface soil not meeting the remedial goals of 10 mg PCBs/kg, based on field screening results, will be excavated for off-site disposal.

Areas near building foundations and structural support members will not be excavated to depths that potentially impact the structural integrity of the building. Areas of residual PCBs that are identified, and that can not be excavated, will remain in-place and the locations documented. Excavated areas will be backfilled with clean gravel, and compacted to the required grade. Concrete and soil removed from the shop floor will be transported to an off-site disposal facility.

The conceptual design for the new concrete floor includes the installation of a minimum of 8 inches of new concrete with 2 mats of reinforcing #5 rebar at a 12-inch spacing. The reinforcing mats will be supported 2 inches above the bottom and 2 inches below the top of

the slab. For areas where the floor will not be removed, the existing floor will be cleaned, and, where appropriate, new concrete placed over the existing concrete to meet the grade of the new floor.

Dust generated during removal of the concrete floor and the underlying soil will be controlled using water. These activities include concrete and soil removal and saw cutting along areas of concrete that will not be removed such as the entrance ramp, the office area, and storeroom and bathroom areas. After removal of the concrete and soil, confirmatory wipe samples will be collected from the walls of the building to ensure that the building has not been recontaminated during the removal of the floor. A total of two wipe samples per wall will be collected and field screening analyses. If the results of the confirmatory samples indicate residual contaminations at concentrations that exceed remedial goals, those sections of the walls will be recleaned by powerwashing.

The progress of the floor installation will be reported in the ongoing monthly status reports to the NYSDEC. After the remedial work is complete, the details of the new floor installation will be described in the final report.

4.3 TASK 3 - IMPLEMENT AN OPERATION & MAINTENANCE PROGRAM

To monitor and evaluate the adequacy of the on-site remediation and the cleaning of the off-site sewers, GE will implement an Operation & Maintenance (O&M) Program for the site. GE will begin the O&M Program after completing the remedial activities for the site. The O&M Program will include a Sewer Monitoring Program.

Sewer Monitoring Program

GE will collect water and sediment samples from the combined sanitary and storm sewers downstream of the 318 Urban Street site. The frequency of sampling will be either quarterly or semi-annually. The sampling program will be continued for a minimum of five years. After five years, the need to continue the monitoring program will be evaluated based on the monitoring results. The frequency and the number and location of the sampling points will be recommended in the final report for GE's recently completed five month sewer sampling program.

In general, sampling points are likely to include locations near:

- The discharge point from the site to the French Street sewer;
- Moselle Street sewer at French Street;
- Moselle Street sewer at E. Ferry Street;
- Belt Line sewer at French Street;

- Belt Line sewer at Winslow Avenue;
- Belt Line sewer at E. Ferry Street; and
- E. Ferry Street sewer downstream of the Belt Line sewer.

Water and sediment samples from each location will be analyzed for PCBs (either EPA Method 8080 or 608), and total suspended solids (TSS) (for the water samples). A New York State Department of Health (NYSDOH), Environmental Laboratory Approval Program (ELAP) approved laboratory will complete the analyses.

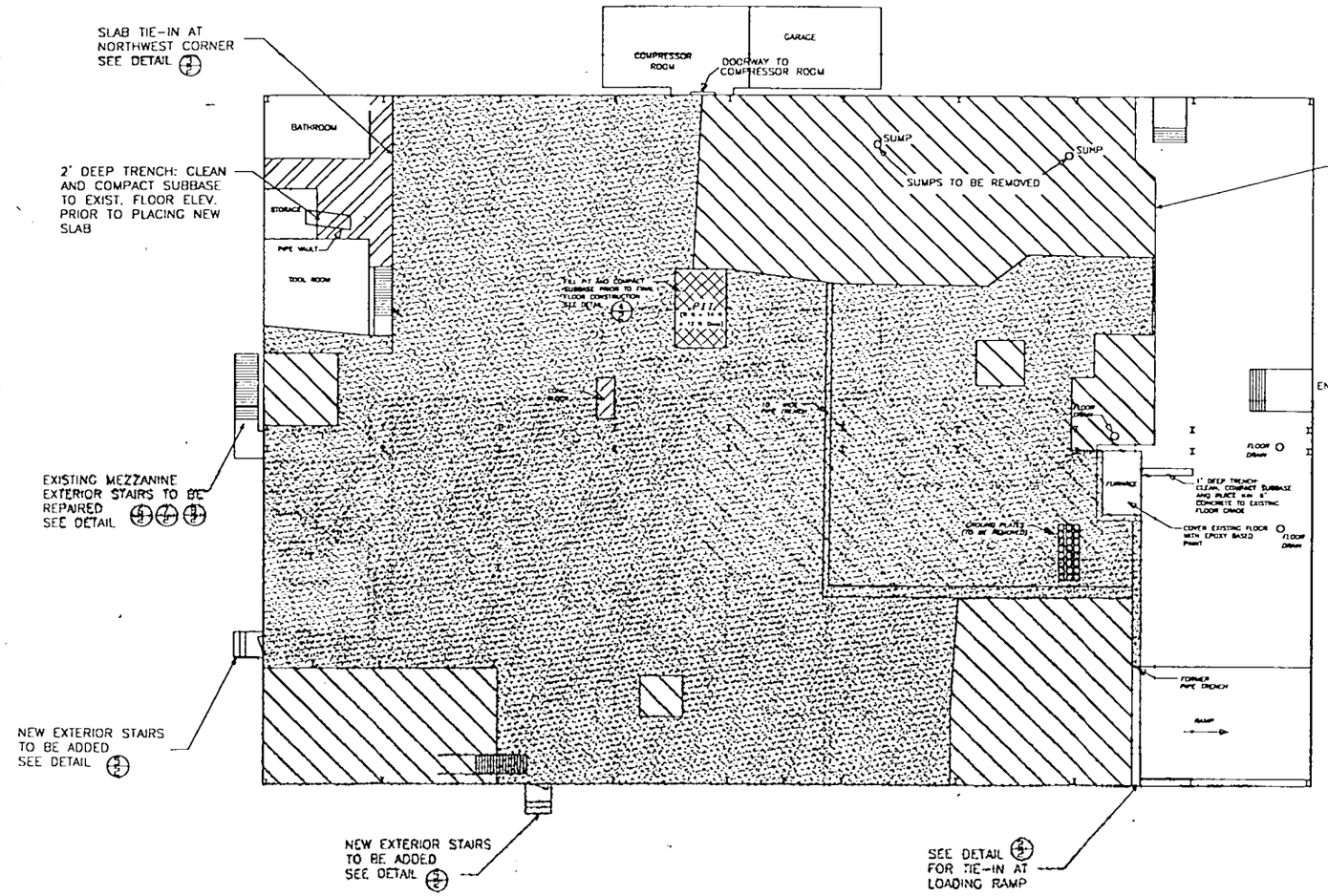
GE will transmit the water and sediment monitoring results to the NYSDEC and BSA in quarterly, or semi-annual, reports, as appropriate, based on the frequency of sampling. These reports will include, but not be limited to:

- Sampling dates and weather conditions;
- A map showing sampling locations, sample identification numbers, and analytical results;
- Summary tables of analytical results, water flow and sediment conditions at each location; and
- Graphs showing data trends, as the program progresses.

The reports will summarize the results, and provide conclusions and recommendations regarding the water and sediment quality in the sewers. If the sampling results show elevated levels of PCBs in the water, GE will consider the need to reclean selected sections of the sewer.

5.0 SCHEDULE

GE anticipates that the remaining remedial activities can be completed in four months. If this Work Plan is approved by both the NYSDEC and Sweeney Steel quickly, the remaining remedial work can begin the first week of August 1998. Thus, GE hopes to complete all of the site remediation by the end of November 1998.



CONCRETE CONSTRUCTION NOTES:

CONCRETE

SHALL BE A MIX DESIGNED IN ACCORDANCE WITH A.C.I. 301 (LATEST EDITION) TO ACHIEVE A 28-DAY COMPRESSIVE STRENGTH (f'c) OF 4,000 P.S.I. OR AS SPECIFIED AND SHALL CONFORM TO ALL REQUIREMENTS OF ACI 318-95.

CONCRETE SLUMP SHALL BE 4 INCHES OR LESS AND CONCRETE SHALL CONTAIN BETWEEN 6 AND 7 PERCENT (BY VOLUME) ENTRAINED AIR.

USE TYPE I PORTLAND CEMENT, PER ASTM C 150, FOR ALL CONCRETE. BATCH, MIX AND PLACE ALL CONCRETE IN ACCORDANCE WITH ACI 302.1, 315, 304, 305, AND 306. READY MIX CONCRETE SHALL CONFORM TO ASTM C 94. ADD MASTER BUILDERS POZZOLITH 20 AS NEEDED TO ACHIEVE f'c IN 10 DAYS OR LESS.

POLYETHYLENE FILM (3-4 MIL) AND SUBGRADE DAMPPROOFING SHALL BE EMPLACED PRIOR TO CONCRETE PLACEMENT.

CURE CONCRETE IN ACCORDANCE WITH ACI 308. DO NOT REMOVE FORMS UNTIL CONCRETE REACHES 70 PERCENT OF DESIGN 28 DAY COMPRESSIVE STRENGTH. WET CURE CONCRETE TO WHICH COATING IS TO BE APPLIED. DO NOT APPLY CURING COMPOUNDS.

PROVIDE 3/4 INCH CHAMFER ON ALL EXPOSED CONCRETE CORNERS EXCEPT WHERE MASONRY WALLS ARE LAID FLUSH WITH COLUMN OR BEAM FACE.

PLACEMENT AND DEPTH OF REINFORCEMENT SHALL BE APPROVED BY ENGINEER PRIOR TO SLAB CONSTRUCTION.

REMOVE LOOSE AND BROKEN CONCRETE FROM EDGES OF EXISTING FLOOR PRIOR TO PLACING NEW CONCRETE

REINFORCING STEEL

SHALL BE DEFORMED BARS, FREE FROM LOOSE RUST AND SCALE, AND CONFORMING TO ASTM A615-97, GRADE 60 (INCLUDING SUPPLEMENT S1).

ALL ACCESSORIES SHALL HAVE UNPAINTED LEGS, AND BE PLASTIC DIPPED AFTER FABRICATION. ACCESSORIES FOR REINFORCING SHALL BE INSTALLED IN ACCORDANCE WITH ACI 318 CURRENT EDITION

ALL PLACEMENT OF REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE MANUAL OF STANDARD PRACTICE OF THE CONCRETE REINFORCING STEEL INSTITUTE.

REINFORCING MATS (ENTIRE SITE) SHALL CONSIST OF A MINIMUM OF 12 BARS 17' O.C. EACH WAY. CHAIRS SHALL BE PLACED TO SUPPORT THE MATS 7' ABOVE THE BOTTOM AND 3' BELOW THE TOP OF THE FINISHED CONCRETE FLOORS.

IN AREAS OF 3 INCH SLAB THICKNESS, CONCRETE REINFORCEMENT SHALL CONSIST OF 4-GAUGE WELDED WIRE FABRIC SPACED AT 4 INCHES ON CENTER IN EACH DIRECTION (4x4 - 4/4 WWF) OR EQUIVALENT AS APPROVED BY ENGINEER. SHALL CONFORM TO A.S.T.M. A185 (LATEST EDITION), AND BE SUPPORTED ON SLAB BOLSTERS SPACED AT 3 FEET ON CENTER.

SUBGRADE

EXISTING SUBGRADE SHALL BE COMPACTED BY HAND OPERATED EQUIPMENT WHERE NECESSARY. STRUCTURAL FILL SHALL CONSIST OF CRUSHED STONE COMPACTED IN 4 INCH LIFTS AS APPROVED BY ENGINEER.

BRACING

FRAMING SHALL BE BUILT TRUE AND PLUMB AND TEMPORARY BRACING SHALL BE INTRODUCED WHENEVER NECESSARY TO TAKE CARE OF ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED, INCLUDING EQUIPMENT AND OPERATION OF SAME. SUCH BRACING SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE LEFT IN PLACE AS LONG AS REQUIRED FOR SAFETY.

SHOP DRAWINGS

ALL REINFORCED CONCRETE SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW, PRIOR TO CONSTRUCTION. SUBMIT ONE PAPER SEPIA (TO BE RETURNED) AND ONE BLUELINE PRINT.

ALL WORK

ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NEW YORK STATE BUILDING CODE AND UNIFORM BUILDING CODE.

- NO SLAB TO BE ADDED
  NO CONCRETE TO BE REMOVED
- REMOVE EXISTING CONCRETE SLAB, APPROX. 6" THICK, PLACE NEW 8" THICK SLAB-ON-GRADE TO DESIGN ELEV. 653.5' (APPROX.) TO MATCH REMAINING FLOOR ELEVATIONS.
- REMOVE EXISTING CONCRETE SLAB, APPROX. 9" THICK, PLACE NEW 8" THICK SLAB-ON-GRADE TO DESIGN ELEV. 653.5' (APPROX.) TO MATCH REMAINING FLOOR ELEVATIONS.
- PLACE APPROXIMATE 3" CONCRETE TO MEET DESIGN ELEV. 653.5' (APPROX.)
  NO CONCRETE TO BE REMOVED

NOTE: DESIGN BASIS FOR CONCRETE REPLACEMENT SPECIFICATIONS PROVIDED BY MR. MIKE SWEENEY OF SWEENEY STEEL SERVICES, INC.

SOURCE: "EXISTING FLOOR PLAN, 318 URBAN STREET, BUFFALO NY" (SEPTEMBER 5, 1997) AS PROVIDED BY BACKlliam ENGINEERS, BUFFALO, NY.

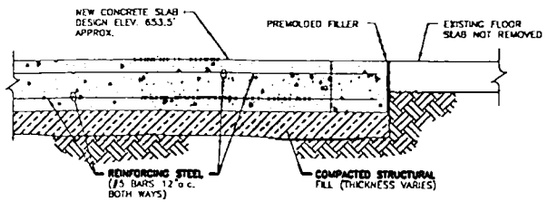
GRAPHIC SCALE

TITLE: FLOOR DESIGN SPECIFICATIONS

318 URBAN STREET
BUFFALO, NEW YORK

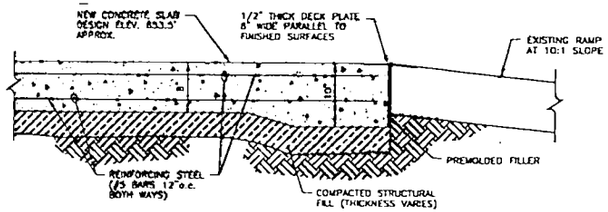
DAMES & MOORE
A DAMES & MOORE GROUP COMPANY
ORCHARD PARK, NEW YORK

SCALE	AS NOTED	DRWN. BY	MJC	JOB NO.	28171-649-152
DATE	07/07/98	APPR. BY	RRB	DRAWING NO.	1



TYPICAL SLAB TIE-IN WITH EXISTING FLOOR AT EAST END OF BUILDING DETAIL (1/2)

NO SCALE



TYPICAL SLAB TIE-IN AT LOADING RAMP DETAIL (2/2)

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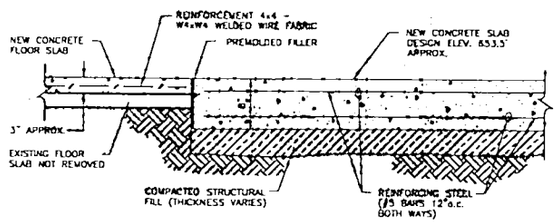

TYPICAL SLAB TIE-IN AT NORTHWEST CORNER DETAIL (3/2)

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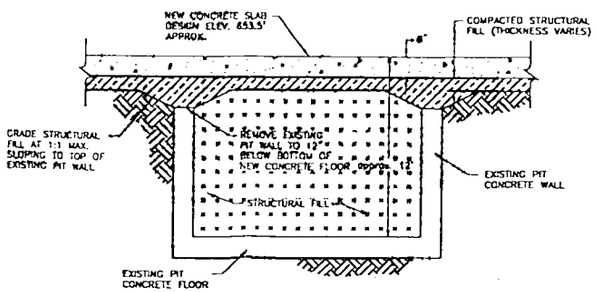
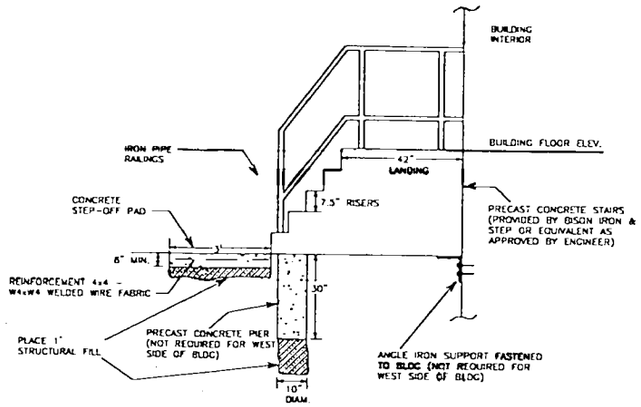


INTERFACE BETWEEN NEW SLAB-ON-GRADE AND EXISTING PIT DETAIL (4/2)

NO SCALE

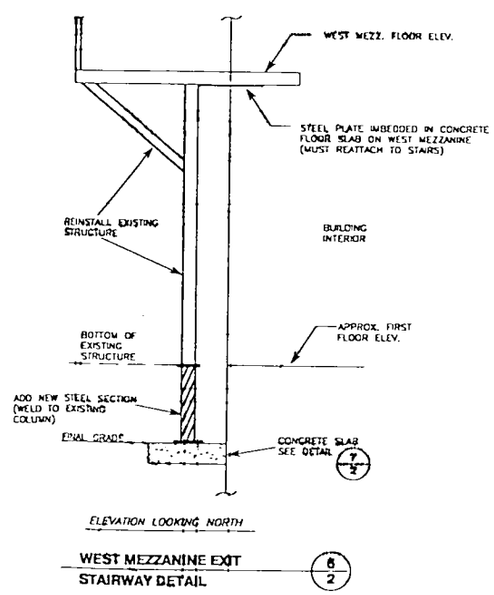


SOUTH AND WEST EXIT STAIRWAY DETAIL (5/2)

NO SCALE

STAIR SLAB NOTES:

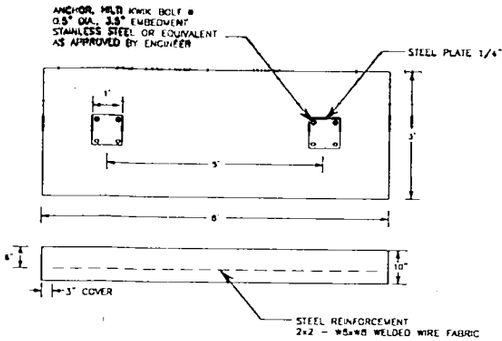
SLAB CONCRETE SHALL BE CAST-IN-PLACE IN ACCORDANCE WITH PROJECT MANUAL AND SHALL ACHIEVE A 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI



ELEVATION LOOKING NORTH

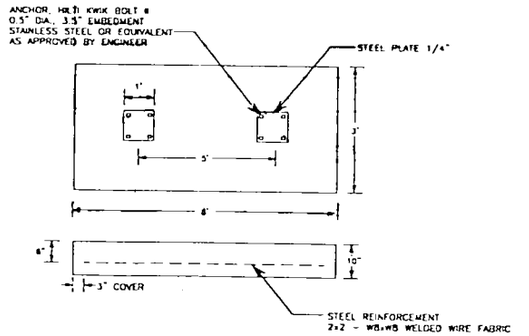
WEST MEZZANINE EXIT STAIRWAY DETAIL (6/2)

NO SCALE



SLAB ON GRADE FOR WEST MEZZANINE STAIRS COLUMN DETAIL (7/2)

NO SCALE



SLAB ON GRADE FOR FOOT OF WEST MEZZANINE STAIRS DETAIL (8/2)

NO SCALE

TITLE: FLOOR DESIGN DETAILS

318 URBAN STREET
BUFFALO, NEW YORK

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY
ORCHARD PARK, NEW YORK

SCALE: AS NOTED	DRWN. BY: MJC	JOB NO.: 28171-649-152
DATE: 07/07/98	APPR. BY: RRB	FIG. NO.: 2

APPENDIX A

SWEENEY STEEL PROVIDED CONCRETE SPECIFICATIONS

Memo to: Michael W. Sweeney

Subject : Urban Street Floor Designs

From : Arthur J. Bossert PE

In order to handle the floor loads of the steel storage that we discussed for your projected future use of the facility, the minimum floor capability should be for loadings of 1500 psf, though a more desirable capacity to handle possible pigeon hole storage units, would be for 2500 psf.

The difference between these two ratings is not very great in concrete and steel. The heavier floor capacity increases the concrete by one inch and the steel by one size. The number of steel mats remains the same.

For a 2500 psf floor the design would be approximately as follows,

Concrete thickness - 8 inches
Reinforcing - 2 mats - each with #5 bars on 12" o.c. both ways
The mats should be supported on saddles 2" above the bottom, and 2" below the top of the slab. The floor should be laid out in panels of around 20' square max to fit the building shape, with slab edge dowels to hold the panels together in alignment.

For a 1500 psf floor the design would change to a thickness of 7" of concrete and the steel reinforcing to #4 bars. Otherwise the details would remain the same.