

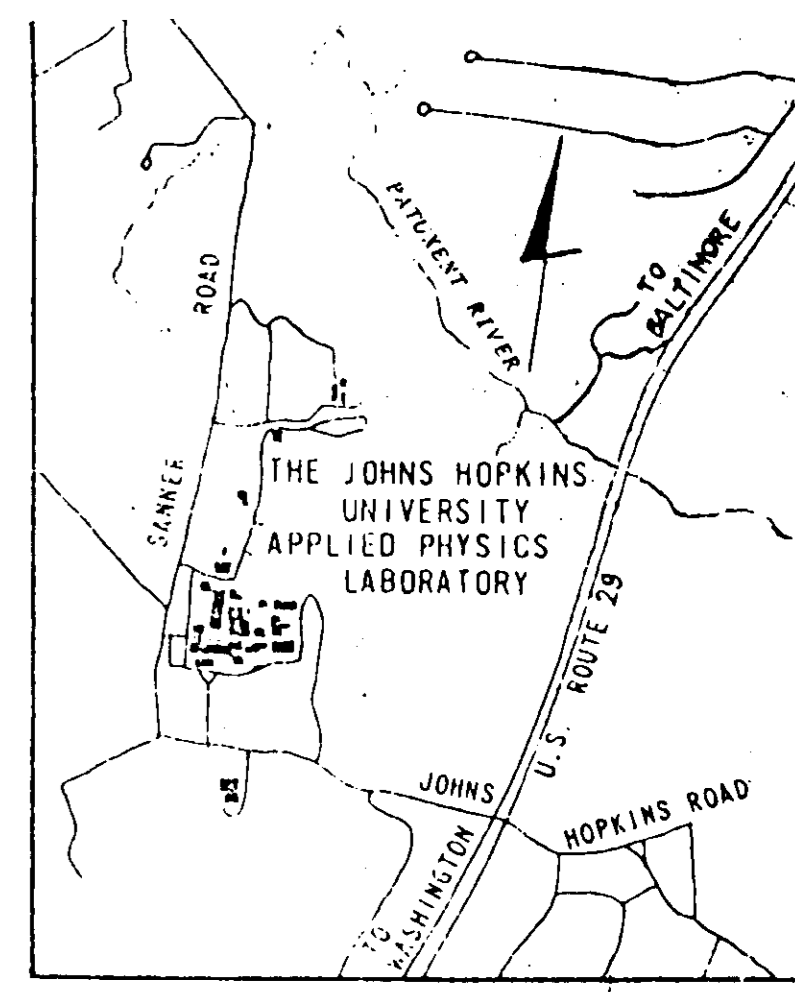
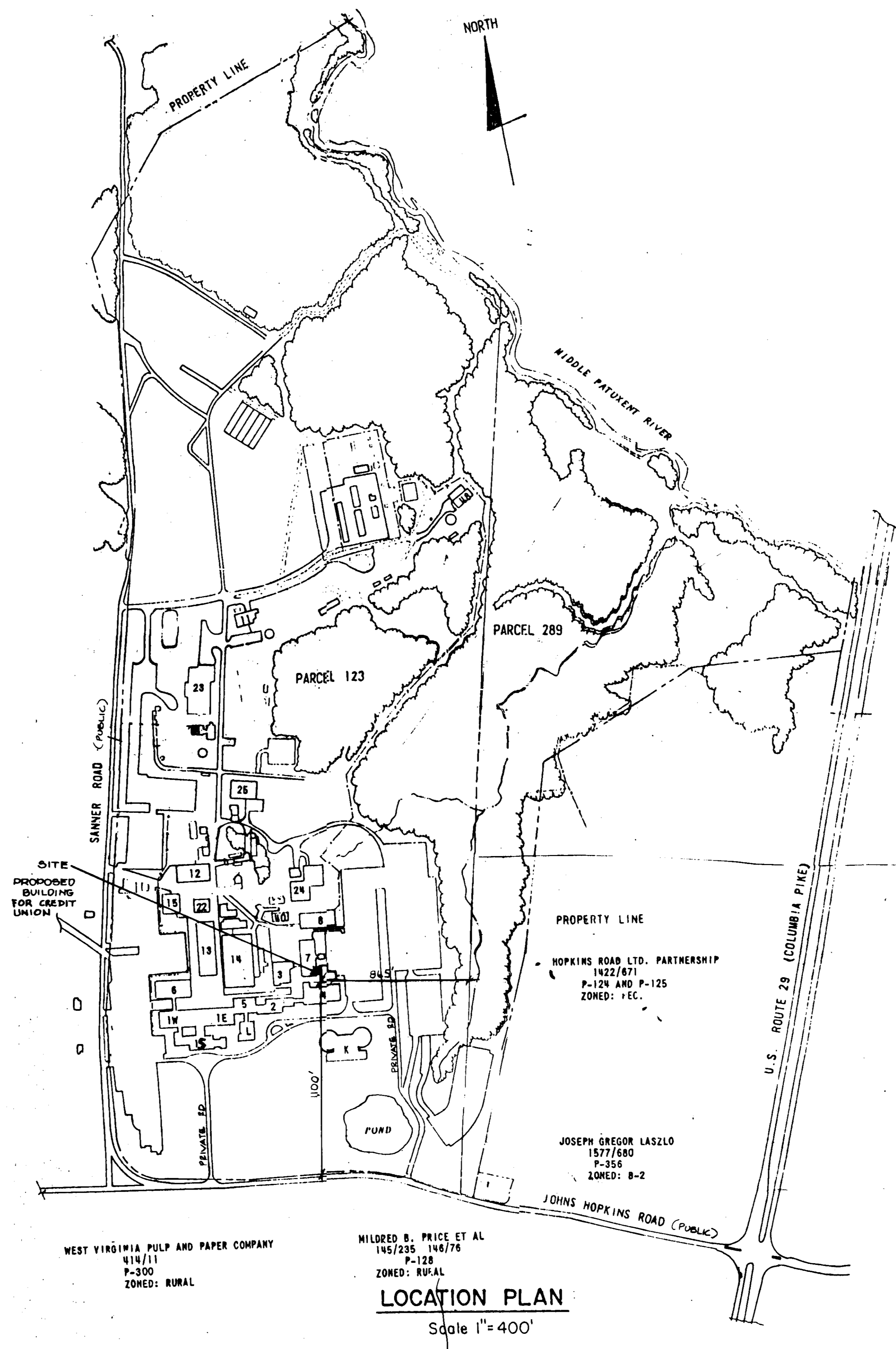
GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. ELEVATIONS SHOWN ARE BASED ON THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY DATUM. JHU-APL DATUM - 94' - HOWARD COUNTY DATUM.
3. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN AN UNINTERRUPTED SERVICE. SEE MECHANICAL DRAWING GENERAL NOTES AND THE SPECIFICATIONS ON SHEETS 3 AND 4 FOR ADDITIONAL INFORMATION. ANY DAMAGE BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
4. LANDSCAPING SHALL BE BY JHU-APL.
5. THE CONTRACTOR SHALL CONTACT MR. ARTHUR STUCKI, PLANT ENGINEER (301) 792-5133 AND MR. JIM LOESCH, GROUP SUPERVISOR OF BUILDING CONSTRUCTION AT LEAST FIVE DAYS BEFORE STARTING WORK OR REQUESTING SHUTTING DOWN ANY UTILITIES.
6. THE CONTRACTOR SHALL SCHEDULE SHUTDOWN AND TIE-IN TO THE EXISTING UTILITIES ONLY AFTER NORMAL WORKING HOURS AT JHU-APL. WORK MUST BE SCHEDULED ACCORDINGLY. NORMAL WORKING HOURS ARE 8:30 AM TO 5:00 PM, MONDAY THROUGH FRIDAY.
7. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
8. ALL WATER MAINS SHALL BE DUCTILE IRON CLASS 52 (SEE SPECIFICATION SECTION 15500).
9. ALL SANITARY SEWER MAINS SHALL BE HOWARD COUNTY SCHEDULE 35 (MINIMUM) PVC.
10. THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION, 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK, AT 992-2407 OR 2418.
11. TOP OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3 1/2 FT. OF COVER UNLESS OTHERWISE NOTED.
12. SEE SPECIFICATION 15500 FOR PIPE REQUIRING CONCRETE REPTRENCH OR ANCHORS WHICH SHALL BE AS SPECIFIED AND IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
13. CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES 2'-0" MINIMUM OR TOWERS AS REQUIRED.
14. THE CONTRACTOR SHALL NOT OPERATE ANY VALVES ON THE EXISTING WATER AND GAS SYSTEMS (SEE GENERAL SITE WORK NOTES ON SHEET 3).
15. THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE AND CATCH BASIN WALLS.
16. THE CONTRACTOR SHALL PERMANENTLY SEED AND STABILIZE ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED.
17. THE BUILDING PROPOSED IS FOR A CREDIT UNION.
18. THERE ARE NO WETLANDS WITHIN THE LIMIT OF DISTURBANCE SHOWN. THEREFORE SECTION 404 AND SECTION 401 DO NOT APPLY AND PERMITS ARE NOT REQUIRED.

LIST OF SDP APPROVAL

REF #	DATE	DESCRIPTION
89-65	86-262	
89-123	86-265	
90-119	86-149	
90-194	86-106	
88-151	86-36	
88-85	85-60	SWM
88-06	85-21	
87-168	85-118	
87-144	81-137	
87-87	80-46	
87-07	75-22	

SITE ANALYSIS	
ZONING: RURAL	
Area of Property	366 AC
Area of this Department	0.519 AC
Building Floor Area	
Existing	1,400,457 SF
Proposed	7,497 SF
TOTAL:	1,407,954 SF
Number of Employees	
Existing	3100
Proposed	9 additional
TOTAL:	3109
Number of Parking Spaces	
Existing	3180
Required 3109 X 0.7	2177
Provided	3166
Open Space	
Existing	304.20 AC
Proposed	304.14 AC
	85.99%
Building Coverage	
Existing	14.48 AC
Proposed	14.85 AC
	4.00%
Paving	
Existing	46.99 AC
Proposed	46.91 AC
	+12.82%



ADDRESS CHART			
PARCEL NUMBER	STREET ADDRESS		
P. 123/129	11100 JOHNS HOPKINS ROAD		
SUBDIVISION NAME	SECT./AREA	LOT/PARCEL	
J.H.U. APPLIED PHYSICS LAB.		P. 123/289	
PLAT OR L/F	BLOCK	ZONE	TAX/ZONE MAP ELEC DIST. CENSUS TR
234/304	16	R	41 5th. 6051
100/625			
WATER CODE	SEWER CODE		
E-21	648000		
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT			
<i>Donna Boyd</i> COUNTY HEALTH OFFICER			3/21/91 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING			
<i>Joseph Smith</i> PLANNING DIRECTOR			4/10/91 DATE
<i>Richard J. ...</i> CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT			2/6/91 DATE
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS			
<i>Roman ...</i> DIRECTOR			4/3/91 DATE
<i>...</i> CHIEF, BUREAU OF ENGINEERING			4-3-91 DATE

Charles P. Gualinga Architect 2000 E. Gayle Road • P.O. Box 1000 • St. Louis, Missouri • Area Code 314 837-0000 One Union Lane • Windsor, Connecticut 06095 • Area Code 203 759-7200	APPLIED PHYSICS LABORATORY THE JOHN HOPKINS UNIVERSITY JOHNS HOPKINS ROAD HOWARD COUNTY MARYLAND APPROVED FOR THE UNIVERSITY BY: <i>James Estach</i> DATE: 2/14/91 TITLE: <i>Asst. Branch Sup.</i>	CREDIT UNION FACILITY THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY 11100 JOHNS HOPKINS ROAD LAUREL MARYLAND 20707	COVER SHEET	28 SEPT 90 28 JAN 91 7 FEB 91	SCALE: AS SHOWN DATE: 21 SEPT 90	SHEET C 1 OF 7
	REVISIONS		SDP 90-211			

SITWORK SPECIFICATIONS

SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary Utilities.

B. Temporary Controls.

C. Construction Facilities.

1.02 TEMPORARY UTILITIES

A. Connect to existing power service provided by Owner. Power consumption shall not disrupt Owner's need for continuous service. Coordinate with Owner, when using equipment, which may disrupt Owner's data processing equipment's power requirements. Owner will pay cost of utilities used. Exercise measures to conserve energy and resources.

B. Sub-contractors to provide extensions and supplements for their own uses of temporary utilities.

C. Owner will provide and maintain suitable quality water service required for construction operations.

D. Construction Manager will provide separate temporary sanitary facilities.

1.03 CONSTRUCTION MANAGER PROVIDED BARRIERS

A. Provide chain link fence with lockable swing gates to prevent unauthorized entry to construction areas, to allow for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations.

B. Provide barricades and pedestrian walkways required by governing authorities for public rights-of-way and for public access to existing building.

1.04 WATER CONTROL

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Protect site from puddling or running water.

1.05 PROTECTION OF INSTALLED WORK

A. Protect installed Work and provide special protection where specified in individual specification Sections.

B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to minimize damage.

C. Prohibit traffic from landscaped areas unless authorized by Construction Manager.

1.06 SECURITY

A. The Owner shall be responsible for security and protection of the Owner's existing or Owner-installed property against theft and vandalism, and shall provide watchman services or other necessary protective measures.

1.07 CONSULTANT SAFETY EQUIPMENT

A. Construction Manager to provide and make available at all times, at site a minimum of four clean hard hats for use by Owner, Architect/Engineer, or their consultants or visitors.

1.08 ACCESS ROADS/PARKING

A. Construction Manager to coordinate with Owner and construct and maintain temporary roads accessing public thoroughfares to serve construction area.

B. Extend and relocate as Work progress requires. Provide/detours necessary for unimpeded traffic flow.

C. Designated existing on-site roads may be used for construction traffic.

D. When site space is not adequate, park in areas designated by Owner.

1.09 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove waste materials, debris, and rubbish from site periodically. Properly remove and dispose off-site in accordance with local codes and regulations.

1.10 PROJECT IDENTIFICATION

A. Construction Manager will provide and maintain all site and building construction signage. List title of Project, names of Owner, Construction Manager, Architect/Engineer, and Consultants.

B. No other signs are allowed without Owner permission except those required by law.

PART 2 PRODUCTS
 //Not Used

PART 3 EXECUTION
 //Not Used

END OF SECTION

SECTION 02110
SITE CLEARING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Remove surface debris.

B. Remove paving, curbs, and walks.

C. Clear site of plant life and grass.

D. Remove trees and shrubs.

E. Remove root systems of trees and shrubs.

1.02 RELATED SECTIONS

A. Section 02200 - Earthwork: Topsoil excavation.

1.03 REGULATORY REQUIREMENTS

A. Conform to applicable local codes for disposal of debris.

B. Coordinate clearing Work with Owner's representatives.

PART 2 PRODUCTS
 //Not Used

PART 3 EXECUTION

3.01 PREPARATION

A. Verify that existing plant life and features designated to remain are tagged or identified.

3.02 PROTECTION

A. Protect utilities that remain, from damage.

B. Protect trees, plant growth, and features designated to remain as final landscaping.

C. Protect bench marks and existing structures from damage or displacement.

3.03 CLEARING

A. Clear areas required for access to site and execution of Work.

B. Remove paving, curbs, and walk indicated.

C. Remove trees and shrubs indicated. Remove stumps, main root ball, and root system to a depth of 8 inches.

3.04 REMOVAL

A. Remove stumps and extracted plant life from site.

B. Owner shall provide site for debris incineration.

END OF SECTION

SECTION 02200
EARTHWORK

PART 1 GENERAL

1.01 WORK INCLUDED

A. Remove topsoil and stockpile, remove excess from site.

B. Excavate subsoil and stockpile, remove excess from site and disposal in accordance with Owner's requirements.

C. Grade and rough contour site.

D. Building and utility line excavation, trenching, shoring and bracing, and backfilling.

E. Compaction requirements.

1.02 RELATED WORK

A. Section 02110 - Site Clearing.

B. Divisions 15 and 16 - Mechanical and Electrical: Requirements for trenching, backfilling, and compacting underground utilities.

1.03 REFERENCES

A. ANSI/ASTM C136 - Sieve Analysis of Fine and Coarse Aggregates.

B. ANSI/ASTM D698 - Moisture-Density Relations of Soils and Soil-Aggregate Mixture Using 5.5 lb Hammer and 12 inch Drop (Standard Proctor).

C. ANSI/ASTM D2922 - Density of Soil and Soil Aggregate in Place by Nuclear Methods. (Shallow Method)

D. ANSI/ASTM D3017 - Moisture Content of Soils and Soil-Aggregate in Place by Nuclear Methods. (Shallow Method)

1.04 TESTS

A. Tests and analysis of fill materials will be performed in the laboratory in accordance with ANSI/ASTM D698, and in the field using ANSI/ASTM D2922 and D3017. Testing services will be contracted by Construction Manager.

B. Testing will be performed as directed by Construction Manager.

1.05 PROJECT RECORD DOCUMENTS

A. Accurately record location of utilities remaining, rerouted utilities, new utilities by horizontal dimensions, elevations of inverts, and slope gradients.

1.06 PROTECTION

A. Protect trees, shrubs, lawns, rock outcroppings, and other features remaining as portion of final landscaping.

B. Protect bench marks, existing structures, fences, roads, sidewalks and paving and curbs.

C. Protect above or below grade utilities which are to remain.

D. Repair damage.

E. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.

F. Underpin adjacent structures which may be damaged by excavation work, including service utilities and pipe chases.

G. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.

H. Grade excavation top perimeter to prevent surface water run-off into excavation.

PART 2 PRODUCTS

2.01 COMMON FILL MATERIALS

A. (Type A) Topsoil: Excavated, friable loam; free of subsoil, roots, grass, excessive amount of weeds, stone, and foreign matter; acidity range (pH) of 5.5 to 7.5; containing a minimum of 4 percent and a maximum of 25 percent organic matter.

B. (Type B) Subsoil: Excavated material, graded free of lumps larger than 6 inches, rocks larger than 3 inches, and debris.

2.02 SELECT FILL MATERIALS

A. (Type C) Coarse Stone: Angular, crushed, natural stone; free of shale, clay, friable materials and debris; graded in accordance with ANSI/ASTM C136 within the following limits:

Sieve Size	Percent Passing
2 inches	100
One inch	95
3/4 inch	85 to 100
5/8 inch	75 to 100
3/4 inch	55 to 85
No. 4	35 to 60
No. 16	15 to 35
No. 40	10 to 25
No. 200	5 to 10

PART 3 EXECUTION

3.01 PREPARATION

A. Identify required lines, levels, contours, and datum.

B. Identify known below grade utilities. Stake and flag locations.

C. Identify and flag above grade utilities.

D. Maintain and protect existing utilities remaining which pass through work area.

E. Notify utility company to remove and relocate utilities.

F. Upon discovery of unknown utility or concealed conditions, discontinue affected work; notify Architect/Engineer.

3.02 SITE EXCAVATION

A. Excavate topsoil and subsoil from areas to be further excavated, re-landscaped, or regraded, or marked areas and stockpile in area designated on site, remove excess material not being reused from site.

B. Do not excavate wet soils.

C. Stockpile topsoil separately from subsoils. Stockpile to depth not exceeding 8 feet. Cover to protect from erosion.

D. When excavation through roots is necessary, perform work by hand and cut roots with a sharp axe.

3.03 UTILITY EXCAVATION

A. Excavate subsoil required for utility removal operations, and other work.

B. Machine slope banks to angle of repose or less until shored.

C. Excavation shall not interfere with normal 45 degree bearing splay of any foundation.

D. Hand trim excavation and leave free of loose matter.

E. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd measured by volume.

F. Correct unauthorized excavation at no cost to Owner.

G. Fill over-excavated areas under structure bearing surfaces in accordance with direction by Architect/Engineer.

3.04 BACKFILLING PREPARATION

A. Verify stockpiled fill to be reused is approved.

B. Verify foundation or basement walls are braced to support surcharge forces imposed by backfilling operations.

C. Verify areas to be backfilled are properly compacted, free of debris, snow, ice, or water, and ground surfaces are not frozen.

D. Proof-roll subgrade surfaces. Cut out soft areas of subgrade not readily capable of in-site compaction. Backfill with subsoil and compact to density equal to requirements for subsequent backfill material.

E. When necessary, compact subgrade surfaces to density requirements for backfill material with sheepfoot roller.

3.05 BACKFILLING

A. Backfill areas and trenches to contours and elevations. Use unfrozen materials.

B. Backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, or spongy subgrade surfaces.

C. Support pipe and conduit during placement and compaction of bedding fill. Backfill utility trenches to equal adjacent undisturbed soils' heights, profiles, compaction density, and contours. Backfill trenches within outline of building's foundation with select fill materials; compact layers to 95 percent standard Proctor.

D. Place and compact select fill materials in continuous layers not exceeding 8 inches loose depth.

E. Place and compact common fill material in continuous layers not exceeding 12 inches loose depth.

F. Employ a placement method so not to disturb or damage work performed in other Sections.

G. Maintain optimum moisture content of backfill materials to attain required compaction density.

H. Backfill against supported foundation walls, or simultaneously on each side of unsupported foundation walls until supports are in place.

3.06 FIELD QUALITY CONTROL

A. Provide for visual inspection of bearing surfaces.

B. Compaction testing will be performed in accordance with ANSI/ASTM D2922 and D3017.

C. If tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to Owner.

END OF SECTION

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
 HOWARD COUNTY HEALTH DEPARTMENT

[Signature] 3/21/91
 COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[Signature] 4/10/91
 PLANNING DIRECTOR DATE

[Signature] 4/10/91
 CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE,
 STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] 4/10/91
 DIRECTOR DATE

[Signature] 4-3-91
 CHIEF, BUREAU OF ENGINEERING MK DATE

Charles P. Guariglia Architect
 2000 E. Bay Street • P.O. Box 688-A • St. Louis, Missouri • Area Code 314 821-8888
 One Union Lane • Windsor, Connecticut 06095 • Area Code 860 738-7388

PRO AND REGISTRATION
 1037-R
[Signature]

APPLIED PHYSICS LABORATORY
 THE JOHN HOPKINS UNIVERSITY
 JOHN HOPKINS ROAD HOWARD COUNTY MARYLAND
 APPROVED FOR THE UNIVERSITY BY *[Signature]*
 DATE: 2/14/91 TITLE: *[Signature]*

CREDIT UNION FACILITY
 THE JOHN HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
 11100 JOHN HOPKINS ROAD
 LAUREL, MARYLAND 20707

SITWORK SPECIFICATIONS

2B SEP 90
 7 FEB 91

SCALE : SHEET :
 C 4
 of
 7
 DATE : 21 SEP 90
 REVISIONS

PIPE SCHEDULE			
LOCATION	INVERT	PIPE DISTANCE	PIPE RUN
A	429.70	4.75'	6" PVC SCH. 40 @ 1.55%
B	429.77	1.21'	6" PVC SCH. 40 @ 1.55%
C	429.79	21.00'	6" PVC SCH. 40 @ 1.55%
D	430.12	1.00'	6" PVC SCH. 40 @ 1.55%
E	430.14	13.00'	6" PVC SCH. 40 @ 1.55%
F	430.34	9.56'	6" PVC SCH. 40 @ 1.55%
G	430.48	35.71'	6" PVC SCH. 40 @ 1.55%
H	431.03	12.00'	6" PVC SCH. 40 @ 1.55%
I	431.21	20.00'	6" PVC SCH. 40 @ 1.55%
J	431.52	10.00'	6" PVC SCH. 40 @ 1.55%
K	431.67	3.82'	6" PVC SCH. 40 @ 2.00%
L	431.75		

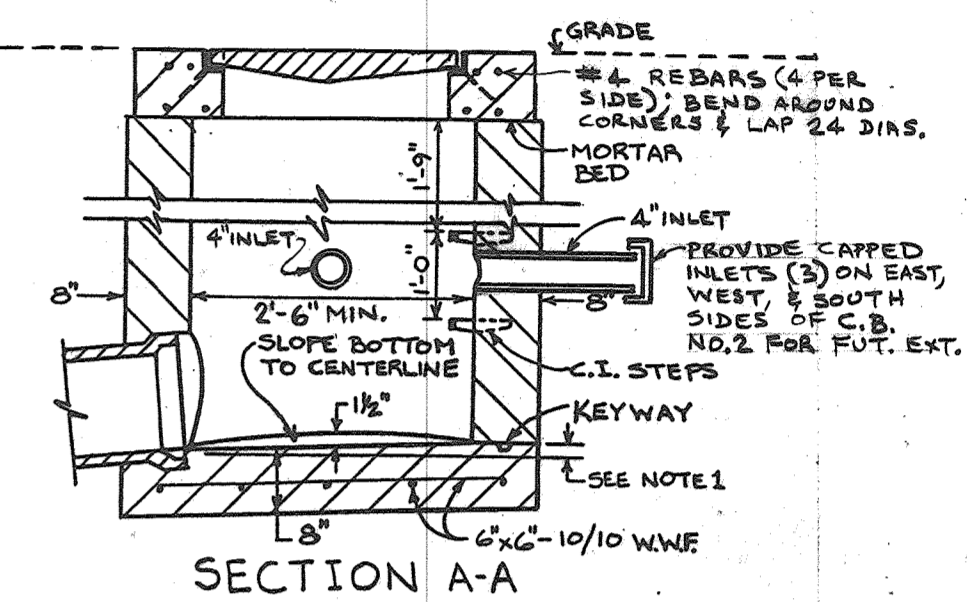
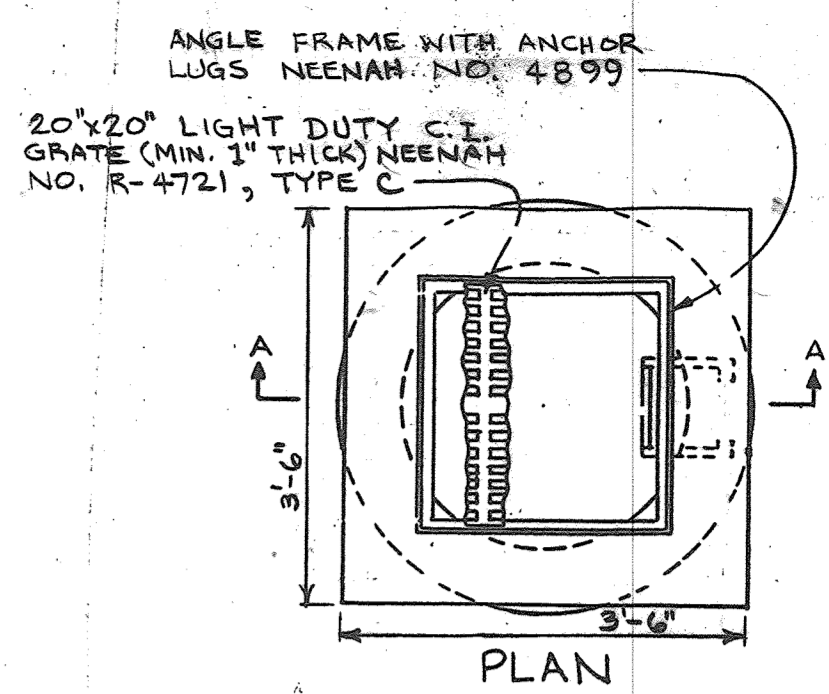
SYMBOLS	
F.H.	FIRE HYDRANT
M.H.	MAN HOLE
C.B.	CATCH BASIN
VA.	VALVE
P.I.V.	POST INDICATOR VALVE
C.O.	CLEAN OUT
— WATER —	DOMESTIC/FIRE WATER LINE
— SAN —	SANITARY SEWER
— ST —	STORM SEWER
— G —	NATURAL GAS LINE
— HW —	HEATING WATER LINE
— F —	FIRE PROTECTION LINE
— CNS —	CONDENSER WATER SUPPLY LINE
— CNR —	CONDENSER WATER RETURN LINE
— E —	ELECTRICAL CONDUIT(S)
---	EXISTING UTILITY LINE TO REMAIN
---	EXISTING UTILITY LINE TO BE REMOVED
---	NEW UTILITY LINE

NOTES:

- 6" SD TO BE SCH. 40 PVC.
- CONTRACTOR TO ADJUST SD LOCATION TO AVOID UTILITY CONFLICTS.
- TRENCH DRAIN TO BE NDS DURA SLOPE OR APPROVED EQUIVALENT.

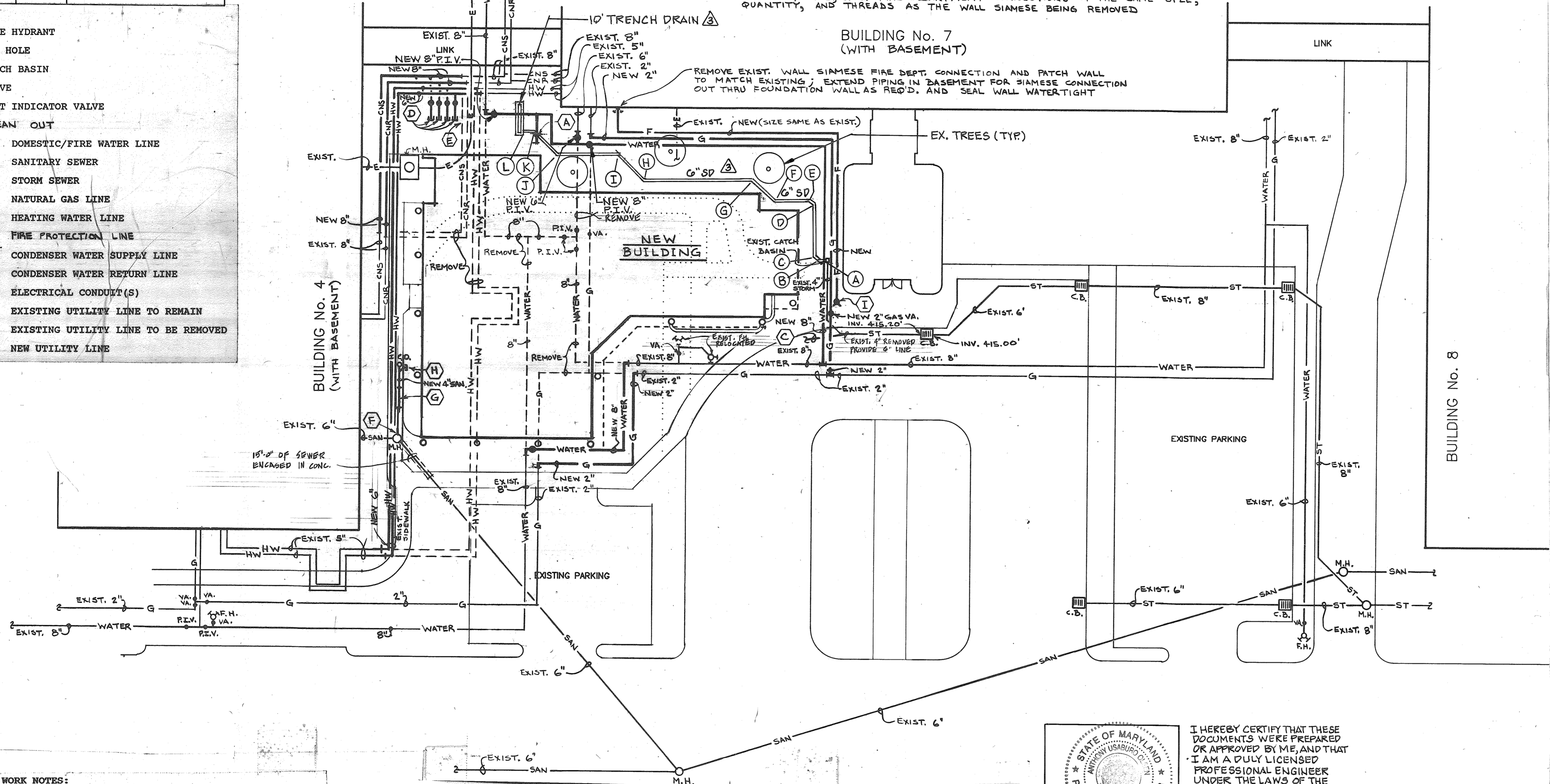
DRAWING NOTES:

- (A) NEW 4" P.I.V. WITH OUTLET CAPPED FOR FUTURE EXTENSION TO CORNER INSIDE NEW BUILDING
- (B) NOT USED
- (C) NEW STORM LINE; SEE DRAWING C2
- (D) NEW 2" HEATING WATER & 2" CONDENSER WATER SERVICE VALVES CAPPED FOR FUTURE EXTENSION TO NEW BUILDING
- (E) CONTRACTOR SHALL VERIFY IF EXIST. ELECTRICAL CONDUITS ARE ABOVE OR BELOW EXIST. HEATING WATER & CONDENSER WATER PIPING; IF PIPING IS ABOVE CONDUITS, REMOVE PIPING AS INDICATED; IF PIPING IS BELOW CONDUITS, CUT PIPING OFF & ABANDON IN PLACE ONLY FOR LENGTH THAT CONDUIT IS ABOVE PIPING
- (F) ENTER EXISTING MANHOLE AT SAME ELEVATION AS SANITARY FROM BUILDING NO. 4 (INV. 420.63 FT.; GRADE IS APPROX. 435 FT.) CONTRACTOR TO LOWER TOP OF MANHOLE TO 433.0' ELEVATION.
- (G) ANGLE NEW 6" SANITARY DOWNWARD AT 45°
- (H) NEW 4" SANITARY CAPPED AT INVERT 429.60 FT. FOR FUTURE EXTENSION TO NEW BUILDING
- (I) NEW SIDEWALK SIAMESE CONNECTION SIMILAR TO ALLENCO FIGURE 231, CHROME PLATED, WITH FIRE DEPARTMENT CONNECTIONS OF THE SAME SIZE, QUANTITY, AND THREADS AS THE WALL SIAMESE BEING REMOVED



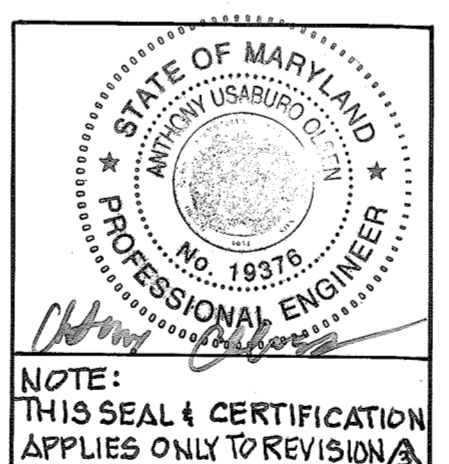
- NOTES:**
- SLOPE BOTTOM 3%.
 - WALLS OF CATCH BASIN TO BE OF BRICK WITH 1/2" CEMENT MORTAR PLASTER ON INSIDE FACE OF REINFORCED CONCRETE WITH VERTICAL #3 BARS @ 16" C.C.
 - FOR SITE DRAINAGE WORK SEE DRAWING C2.

CATCH BASIN DETAIL
NO SCALE



- GENERAL SITE WORK NOTES:**
- EXISTING CONDITIONS SHOWN ON THIS DRAWING WERE OBTAINED FROM DRAWING PRINTS ON FILE WITH THE UNIVERSITY. ACCURACY OF THIS INFORMATION IS NOT GUARANTEED.
 - ALL BIDDERS SHALL VISIT SITE PRIOR TO SUBMITTING BID.
 - ALL ITEMS SHOWN ON DRAWING ARE EXISTING UNLESS CALLED OUT AS NEW.
 - SEE ARCHITECTURAL SITE PLAN AND ELECTRICAL SITE UTILITIES PLAN FOR ADDITIONAL INFORMATION REGARDING THIS SITE. COORDINATE WITH NEW WORK AND EXISTING CONDITIONS SHOWN ON THESE PLANS AND WITH ALL OTHER CONTRACTORS WORKING ON SITE.

- CONTRACTOR SHALL NOT SHUT OFF ANY UTILITIES. CONTRACTOR SHALL PROVIDE A WRITTEN REQUEST FOR UTILITY SHUT OFF TO MR. ARTHUR STUCKI, UNIVERSITY PLAN ENGINEER, WITH A COPY TO MR. JIM LORSCH, GROUP SUPERVISOR OF BUILDING CONSTRUCTION FOR THE UNIVERSITY, A MINIMUM OF 5 DAYS IN ADVANCE OF REQUESTED SHUT OFF DATE. CONTRACTOR SHALL SCHEDULE WORK SO THAT UTILITY DOWN TIME IS KEPT TO AN ABSOLUTE MINIMUM. CONTRACTORS ESTIMATE OF DOWN TIME SHALL BE SUBMITTED WITH REQUEST FOR UTILITY SHUT OFF. THE CONTRACTOR SHALL SCHEDULE SHUT DOWN AND TIE-IN TO THE EXISTING UTILITIES ONLY AFTER NORMAL WORKING HOURS AT JHU-APL. NORMAL WORKING HOURS ARE 8:30 AM TO 5:00 PM MONDAY THROUGH FRIDAY.
- SEE SPECIFICATIONS FOR PIPE MATERIALS, INSTALLATION, ETC.
- UNLESS SPECIFICALLY INDICATED OTHERWISE ON THIS DRAWING, UTILITY LINES INDICATED FOR REMOVAL SHALL BE EXCAVATED AND REMOVED FROM THE GROUND INCLUDING ANY SANDY OR OTHER "SOFT" BEDDING MATERIAL USED TO LAY PIPE. CONTRACTOR SHALL REMOVE ALL SUCH PIPE AND EXCAVATED BEDDING MATERIALS FROM SITE.
- ALL TRENCHING IN VICINITY OF ELECTRICAL CONDUITS SHALL BE DONE BY HAND. THESE CONDUITS MUST NOT BE DISTURBED.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL NEW SEWER PIPING WITHIN 2'-0" OF MANHOLES AND CATCH BASIN EXTERIOR WALLS.



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NUMBER 19376. EXPIRATION DATE: SEPTEMBER 22, 2019.

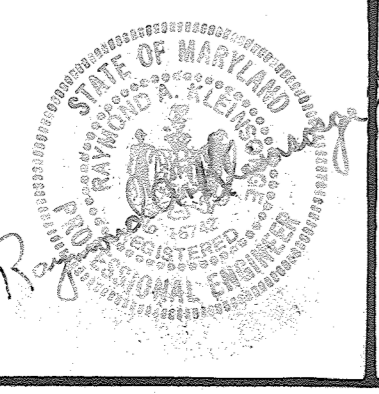


Mechanical Site Utilities Plan

SCALE 1" = 20' 0"

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT	<i>Joseph B. ...</i> COUNTY HEALTH OFFICER	3/21/91 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING	<i>...</i> PLANNING DIRECTOR	4/10/91 DATE
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	<i>...</i> DIRECTOR	4/3/91 DATE
	<i>...</i> CHIEF, BUREAU OF ENGINEERING	4-3-91 DATE

Charles P. Guariglia Architect
3650 S. Geyer Road • P.O. Box 8528-A • St. Louis, Missouri • Area Code 314 821-2205
One Unkno Lane • Windsor, Connecticut 06095 • Area Code 688-7209



APPLIED PHYSICS LABORATORY
THE JOHN HOPKINS UNIVERSITY
JOHN HOPKINS ROAD HOWARD COUNTY MARYLAND
APPROVED FOR THE UNIVERSITY BY: *James E. Lorsch*
DATE: 2/14/91 TITLE: *Sanitary Branch Design*

CREDIT UNION FACILITY
THE JOHN HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
11100 JOHN HOPKINS ROAD
LAUREL, MARYLAND 20707

MECHANICAL SITE UTILITIES PLAN

28 SEPT 90
7 FEB 91
27 NOV. 18
ADDED TRENCH DRAIN & STORM DRAIN PIPE

SCALE: AS NOTED
DATE: 21 SEPT 90
SHEET: C 5 of 7
REVISIONS

DIVISION 15 - MECHANICAL

SECTION 15000 - GENERAL MECHANICAL REQUIREMENTS

GENERAL:
Applicable provisions of the General Conditions, Supplementary General Conditions, and the General Requirements of Division 1 govern work under this section.

- Related Sections are:**
- Section 15100 - Heating/Ventilating/Air Conditioning Systems
 - Section 15200 - Plumbing and Drainage Systems
 - Section 15300 - Fire Protection Systems
 - Section 15500 - Site Utilities

It is the intent of the Construction Documents to provide mechanical systems that comply with the requirements of "ASHRAE Standards 90A-1980 - Energy Conservation in New Building Design". All materials and equipment are to comply where applicable. When local codes have more stringent requirements than Standard 90A-1980, comply with the local codes.

The mechanical drawings show the general arrangement of all piping, ductwork, equipment, etc., and shall be followed as closely as actual building construction and work of other trades will permit. The Architectural and Structural Drawings shall be considered as part of the work insofar as this information furnishes the Contractor with details relating to design and construction of the building. Architectural drawings shall take precedence over the mechanical drawings. Because of the small scale of the mechanical drawings, it is not possible to indicate all offsets, fittings and accessories which may be required. The Contractor shall investigate the structural and finish conditions affecting the work and shall arrange his work accordingly, providing such fittings, valves, and accessories as may be required to meet such conditions. Should conditions necessitate a rearrangement of piping, such departures and the reasons therefor shall be submitted by the Contractor to the Architect for approval in the form of detailed drawings showing the proposed changes. No such changes shall be made without the prior written approval of the Architect. All changes shall be marked on a set of drawings which shall subsequently be turned over to the Architect.

Shop drawings, product data, samples:
Shop drawings not submitted in accordance with substitution paragraphs under Division 1 - General Conditions will not be considered for approval.

MATERIALS:
Materials and equipment to be as specified and indicated on drawings. When specification or drawings conflict with local codes, comply with codes.

All material, other than concrete, to be furnished and erected under this division of specifications unless indicated otherwise. Concrete work to be furnished under Division 3 - Concrete, unless specifically called out otherwise.

Motors, Starters, Disconnects and Control Devices:
Furnish all motors, starters, control devices, and other electrical equipment required for operation of equipment. Disconnects are to be furnished by Division - 16 electrical contractor unless they are provided as a part of the mechanical equipment.

Motors with inductive reactance load component are limited to 85% minimum power factor. When a motor has less than 85% minimum power factor, provide capacitor to correct power factor 90% minimum.

In general, motors over 1 HP shall be 3 phase, 480V, except where indicated otherwise.

Motors under 1 HP to be single-phase, 60 Hz., except where indicated otherwise. Single-phase motors shall have thermal overload protection.

Starters:
Type of starting device to be as required to suit equipment indicated on drawings and remote control or interlocks as specified.

Starters for three-phase motors to be magnetic type, equipped with non-adjustable thermal overloads, sizes as recommended by the motor manufacturer.

Starters for single-phase motors UNDER 1 HP to be manual type.

Starters for equipment located outside, or where subject to water, to be weatherproof.

Starters to have nameplates of black laminated plastic with white engraved lettering to indicate what they control. Nameplate to be fastened to front of starter.

INSTALLATION:
Examine areas and conditions under which work is to be done. Do not proceed with work until unsatisfactory conditions have been corrected.

All equipment is to be installed in a neat and workmanlike manner. Manufacturer's recommendations to be followed in all installation procedures.

Equipment to be installed on 4 inch thick reinforced concrete housekeeping pads.

Where supports, foundations and stands are indicated, specified or required, design and construct supporting structures of sufficient strength to safely withstand the loads to which they may be subjected and properly distribute the load and impact. Consult and follow the equipment manufacturer's recommendations.

Hangers and supports to be fastened to building structure. Hangers and supports for pipework shall provide for expansion and contraction and prevent vibration. Maintain required spacing by proper adjustment and placement.

All electrical work specified as part of the Division 15 Mechanical Sections shall have materials, wiring, conduit, houses, and installation done in accordance with the Division 16 Electrical Sections.

The professional engineer whose signature and seal appear below assumes responsibility for only what appears on this page and disclaims any responsibility for all other plans, specifications, estimates, reports or other documents or instruments not sealed by the signatory professional engineer.

Cooperation with other Trades:

Contractors shall be responsible for work fitting in place without conflict with other trades where proper planning will avoid interference. Work installed without regard for other work, or if conflict results, must be changed if directed by Architect without additional cost to Owner.

Tests and Inspections:
Furnish all labor and materials for all tests and inspections.

Contractor to test and inspect work as required by local codes and regulations, and as required by these specifications. Provide labor and materials for such tests. Pay fees (if any) required by local authorities for testing and inspection.

Inspect and test all equipment for proper operation. Lubricate moving equipment as required. Check motors for proper rotation, belts for proper tension, etc. Check all ductwork and piping for leakage.

Gages, valves, controls, thermometers and other instruments to be calibrated and checked for operation.

Make tests in presence of Building Department Official and Architect. Give 3 day advance notice to Building Department Official and Architect before tests are made.

Do not paint, cover, or conceal piping or units before testing and obtaining approval.

Submit two copies of complete test report to Architect for review and approval.

Labeling:
Equipment, starters, switches, dampers, valves, control devices, gages, thermometers, to be permanently labeled. Permanent identification shall correspond to that shown on drawings.

Mark piping systems with Brady B-350 thin film pipe markers, 1-1/8 inch high, indicating type service and direction of flow. Locate pipe markers at - equipment connections, access doors, branch mains, valves, 75 foot intervals on accessible pipe.

Operating Instructions:
Upon completion, instruct owner in operation of equipment and provide two complete sets of operating and maintenance instructions, including equipment manufacturer's instructions, wiring diagrams and parts lists, and names of authorized service representatives. Submit operating and maintenance instruction to Architect for review and approval.

Cleaning:
Dirt and debris to be cleaned and blown out of piping and removed from interior of ductwork and equipment upon completion of installation and before starting system in operation.

Clean exposed surfaces of duct systems, piping, wiring, equipment, equipment casings, plumbing fixtures, fittings and trim after all construction is complete.

Repair dents, scratches and other damage to equipment housing and casings.

Warranties and Guarantees:
Work and material to be guaranteed and corrected when required as provided in General Conditions.

Special extended guarantee or warranty on specific pieces of equipment to be turned over to Owner.

Maintenance:
Furnish full maintenance on work performed under this section for period of one year from date of substantial completion. Maintenance to be performed to keep work in proper operation. Include four planned inspections during year.

Owner is responsible for operating the system in accordance with Contractor's instructions and to advise the Contractor of defects immediately. The Contractor is not responsible for damage or improper operation of the system, or other circumstances beyond his control.

END OF SECTION

DIVISION 15 - MECHANICAL

SECTION 15500 - SITE UTILITIES

GENERAL:
Systems Responsibility and Coordination:
Provide supervision, coordination, materials and labor to complete the utilities relocation work as specified and as indicated on the drawings.

All associated demolition work as indicated on the mechanical site utility drawing is included as work of this section.

Refer to Section 15000 for General Mechanical Requirements. Refer to Division 2 for general requirements pertaining to demolition work.

The following site utility systems are included as work under this section of the specifications:

- Domestic/fire water piping
- Sanitary sewer
- Storm sewer
- Natural gas piping
- Heating water piping
- Condenser water piping

Codes and Standards:
The systems shall comply with all applicable state and local codes and ordinances. When these codes and ordinances have more stringent requirements than the standards listed herein, comply with their requirements.

Permits and Fees:
Obtain and pay for the required permits, inspection fees, tapping fees, connection charges and utility company service charges.

Submittals:
Shop drawings for piping and valves to include certified manufacturer's data sheets.

Testing:
Conduct preliminary and final acceptance tests as specified and as required by local agencies having jurisdiction. Furnish labor and materials for such tests. Pay fees (if any) required by local authorities for testing and inspection.

Work to be tested and inspected as required by local codes and regulations, and as required by this specification; tests to be made in the presence of plumbing official, utility company official, university building department official, and Architect's representative.

Cleaning:
All scale and dirt to be cleaned out of piping on completion of installation and before starting pipe system in operation.

Guarantee:
Material, equipment and installation shall be guaranteed and corrected when required, as provided in general conditions and as specified for each system and unit.

PRODUCTS AND MATERIALS:
Materials and equipment shall be as specified and indicated on drawings; when the specification or schedule conflicts with local codes, comply with code.

Provide piping materials and piping products of sizes, types, pressure ratings, and capacities as indicated. Provide fittings of materials which match pipe materials used in piping systems. Where more than 1 type of materials or products are indicated, selection is installer's option.

Piping:
Domestic/fire water pipe and fittings to be Class 52 ductile iron with cement mortar lining and push on joints.

Sanitary sewer piping to be Howard County schedule 35 (minimum) PVC.

Storm sewer piping to be ABS sewer pipe and fittings (ASTM D1751) or PVC sewer pipe and fittings (ASTM 2665), schedule 80.

Condenser water pipe and fittings to be schedule 40 black steel with wrought-steel buttwelding fittings (ASTM 120). Pipe to be machine wrapped using 50% overlap wrap, with polyvinyl tape.

Heating water pipe and fittings to be Ricwil (Intergy, Inc.; Brecksville, OH; 216-526-1600) Steel-Gard or approved equal. Pipe shall be black steel, ASTM A-53, schedule 40 in nominal 20 foot and 40 foot lengths. Pipe shall be insulated with closed cell polyurethane 1.7" thick having a thermal conductivity of .14 BTU/HR-FT. Jacket shall be Type 1, Grade 1, polyvinyl chloride with a minimum thickness of .10 inch. System shall be suitable for water temperatures to 250 degrees F. Joints shall be made with couplings of machined steel grooved for O-Ring seals which shall allow movement for expansion and contraction of pipe. All fittings shall be coated with Rip-Coat in the field by the installing contractor. Installation shop drawings shall be provided to the Architect indicating all fittings and showing how expansion and contraction will be accommodated in all lengths and directions of pipe.

Natural gas pipe and fittings to be schedule 40 black steel with wrought-steel buttwelding fittings (ASTM 120). Pipe to be machine wrapped using 50% overlap wrap with polyvinyl tape. Gas piping system materials to be as required by NFPA-54, ANSI B31.2, local codes, and utility company requirements and standards.

Valves:
All valves shall open counterclockwise.

Post indicator valves (P.I.V.) shall be Nibco or approved equal Model F-609 (mechanical joint) or F-609 (flanged joint), 175 lb., U.L. listed, FM approved, cast iron body, bronze fitted, non-lifting stem, indicator post pattern gate valve with Nibco Model NIP-1, U.L. listed, FM approved, indicator post having "OPEN" and "SHUT" indicator signs and an angle type operating wrench that can be locked to prevent unauthorized operation.

Water service valves 3" and under (for domestic water, heating water, and condenser water) shall be bronze Nibco or approved equal S-113 with solder ends or T-113 with threaded ends.

Gas cocks 2 inches and smaller shall be 150 psi non-shock WOC, bronze straightway cock, flat or square head, threaded ends.

Gas cocks 2-1/2 inch and larger shall be 125 psi non-shock WOC, iron body bronze mounted, straightway cock, square head, flanged ends.

INSTALLATION:

Equipment and materials shall be installed in neat and workmanlike manner. Manufacturer's recommendations shall be followed in all installation procedures.

Plug each outlet, including valves, with plug or cap immediately after installation and remain until continuing piping connections are completed.

Improperly Installed Work:
This contractor shall be responsible for planning his work to fit in place without conflict with work of other trades; work installed without regard for other work, or in conflict with other work, must be changed at contractor's expense, if directed by Architect.

Excavation and Backfill:
Excavate for underground work. Remove surplus excavated material that is not used for backfill, grading or other purpose. Correct disturbances to existing pavement, sidewalks, and other existing work which is indicated on the drawing to remain to correspond to original condition.

Underground piping to be installed below frost line. Trenches for underground piping to be straight and to have required slope to permit drainage by gravity and connection to existing piping as required.

Piping to be continuously supported by trench floor. Floor of trench to be devoid of lumps or irregularities. When floor of trench at proper grade is of hard, or rocky material, excavate to four inches below grade and backfill to grade.

Backfill and compaction within the area of the new building line and five foot beyond this area shall not be done by this contractor but shall be done by the contractor performing Section 02200 "Earthwork".

Backfill and compaction of the area outside of the new building plus five foot beyond, shall be by this contractor. Backfill trench immediately after piping is tested and approved. Backfill by hand in thin layers to one foot above top of pipe. Tamp each layer and compact to avoid pipe shifting and joint damage. From one foot above top of pipe to top of trench, backfill in 8 inch layers and compact each layer with mechanical tampers. Compaction by water inundation or water settling method not permitted.

Domestic/Fire Water Piping:
All water main construction shall conform to the requirements contained in the current issue of the "Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction" Article 10 except as modified herein.

All pipe joints shall be bonded to insure electrical continuity. Bonding may be accomplished either with shop welded copper terminal straps and copper jumper straps with corrosion resistant bolts or with copper wire exothermic welds in the field. All bonding between joints for pipe fittings, valves, and specialties shall be tested for electrical continuity. Each joint shall be inspected and resistance tested prior to coating and backfilling. No resistance will be permitted across any joint. Bonded joints shall be coated with a rust-inhibitive paint.

For water pipe with push-on joints, dig hub holes at proper intervals so that no weight is supported by hub. Center each spigot and pipe to hub to form close concentric joint. Hubs to be upstream.

For underground water pipe 3 inches and larger, provide concrete thrust blocks poured to virgin soil in direction of thrust at all changes of piping direction.

Install post indicator valves per manufacturer's directions.

Sanitary Sewer and Storm Sewer Piping:
For pipe with hub and spigot joints, dig hub holes at proper intervals so that no weight is supported by hub. Center each spigot and pipe to hub to form close concentric joint. Hubs to be upstream.

Condenser Water Piping:
Condenser water piping shall be welded.

In corrosive soils, install magnesium anodes for underground steel pipe, one 5 pound anode for up to 100 feet in length and one 5 pound anode for each additional 100 feet.

After pipe pressure testing, all joints shall be wrapped with polyvinyl chloride tape.

Hand wrap joint fittings using 100% overlap wrap (2 separate layers of 50% overlap wrap applied in same direction with each tape joint staggered 50% of tape width from layer of tape above and below) extending 6" beyond fitting onto wrapped pipe. Comply with tape manufacturer's installation instructions.

Heating Water Piping:
Heating water piping, joints, and fittings shall be per pipe manufacturer's written installation instructions. Concrete thrust blocks poured to virgin soil in direction of thrust must be provided at all changes of piping direction.

In corrosive soils, install magnesium anodes for underground steel pipe, one 5 pound anode for up to 100 feet in length and one 5 pound anode for each additional 100 feet.

Natural Gas Piping:
Gas piping and accessories installation, testing procedure, and system purging to be as required by NFPA-54, ANSI B31.2, local codes, and utility company requirements.

Gas piping underground to be welded.

Minimum depth of gas piping to be 36 inches except where indicated otherwise.

In corrosive soils, install magnesium anodes for underground steel pipe, one 5 pound anode for up to 100 feet in length and one 5 pound anode for each additional 100 feet.

Wrapping: Hand wrap fittings and joints using a 100% overlap wrap (2 separate layers of 50% overlap wrap applied in same direction with each tape joint staggered 50% of tape width from layer of tape above and below) of polyvinyl chloride tape extending 6" beyond fitting onto wrapped pipe. Comply with tape manufacturer's installation instructions.

Service Valves:
Service valves for domestic water, heating water, condenser water and natural gas shall be installed upright in a valve box with removable cover extended to grade. Cover shall have type of service permanently engraved or molded into it.

Domestic/Fire, Heating, and Condenser Water Pipe Testing:

Test water piping system and prove tight under pressure not less than 150' of working pressure under which it is to be used. Test may be made by sections or of entire water supply system. Water used for tests to be obtained from potable source of supply.

Natural Gas Pipe Testing:
Make air test by attaching air-compressor testing apparatus to any opening, and after closing other inlets and outlets to system, force air into system until there is uniform gauge pressure of 150' of the proposed maximum working pressure but not less than 5 PSIG. Hold pressure without introduction of any additional air for 30 minutes.

Sterilizing Domestic/Fire Water Piping:
After water piping is complete and system flushed out completely, a solution of Sodium Hypochlorite shall be introduced. The solution to consist of 1 gallon of 5% Sodium Hypochlorite, Chlorox, Purex, or Energy Bleach to 200 gallons of water.

Solution to be introduced by means of a pump until an orthotolidin test at each outlet shows residual chlorine. The solution to remain in the system 24 hours after which, entire system of water piping to be flushed.

END OF SECTION

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT	
<i>James P. ...</i> COUNTY HEALTH OFFICER	3/21/91 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING	
<i>James P. ...</i> PLANNING DIRECTOR	4/10/91 DATE
<i>James P. ...</i> CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT	4/10/91 DATE
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC WORKS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
<i>James P. ...</i> DIRECTOR	4/3/91 DATE
<i>James P. ...</i> CHIEF, BUREAU OF ENGINEERING/MC	4/3/91 DATE

Charles P. Guadagnoli
Architect
200 S. Bay Street • P.O. Box 888-A • St. Louis, Missouri • Area Code 314 587-2222
400 Union Lane • Water, Connecticut 06898 • Area Code 203-722-1100

APPLIED PHYSICS LABORATORY
THE JOHN HOPKINS UNIVERSITY
JOHNS HOPKINS ROAD HOWARD COUNTY MARYLAND

CREDIT UNION FACILITY
THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20707

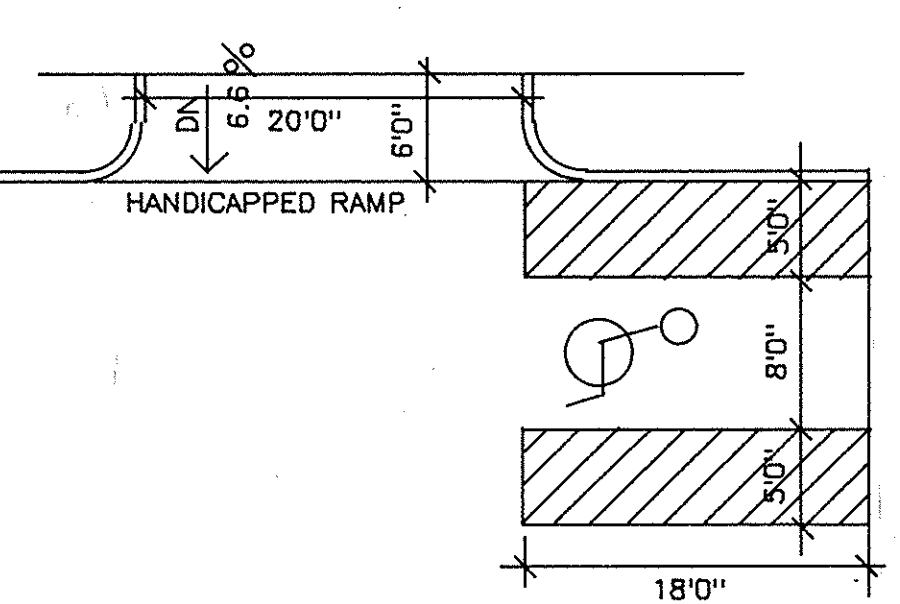
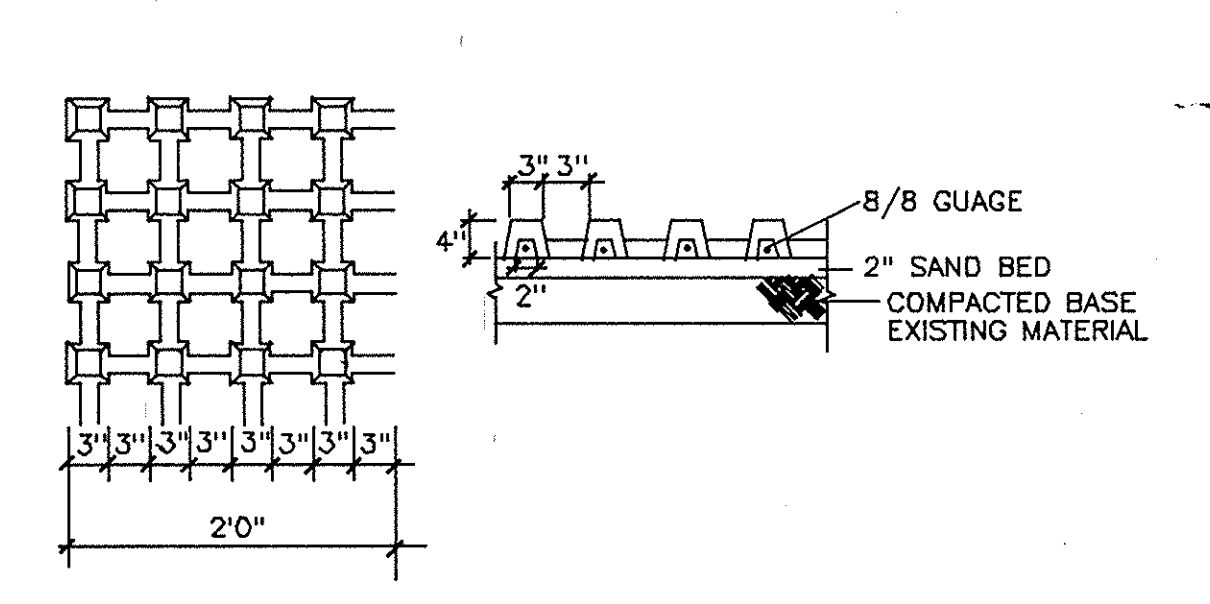
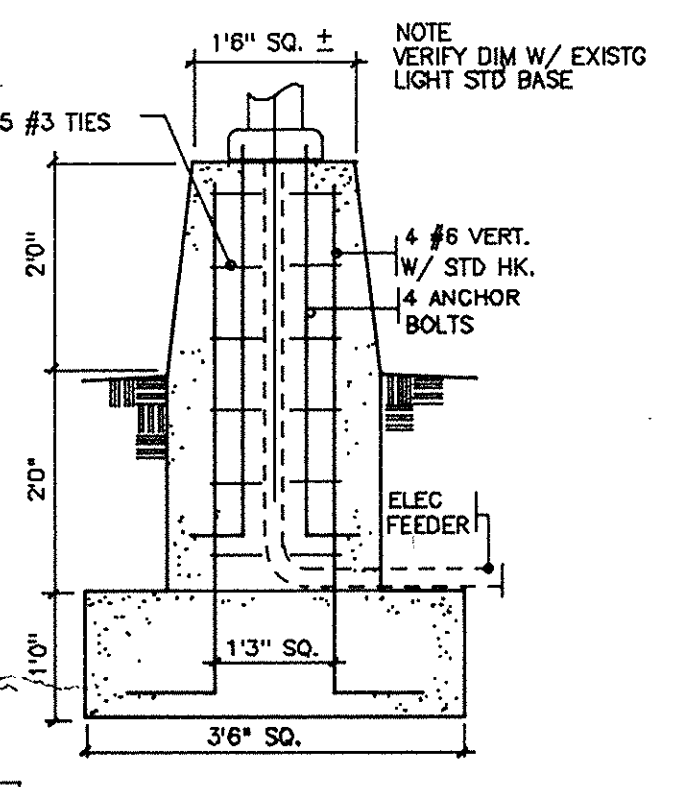
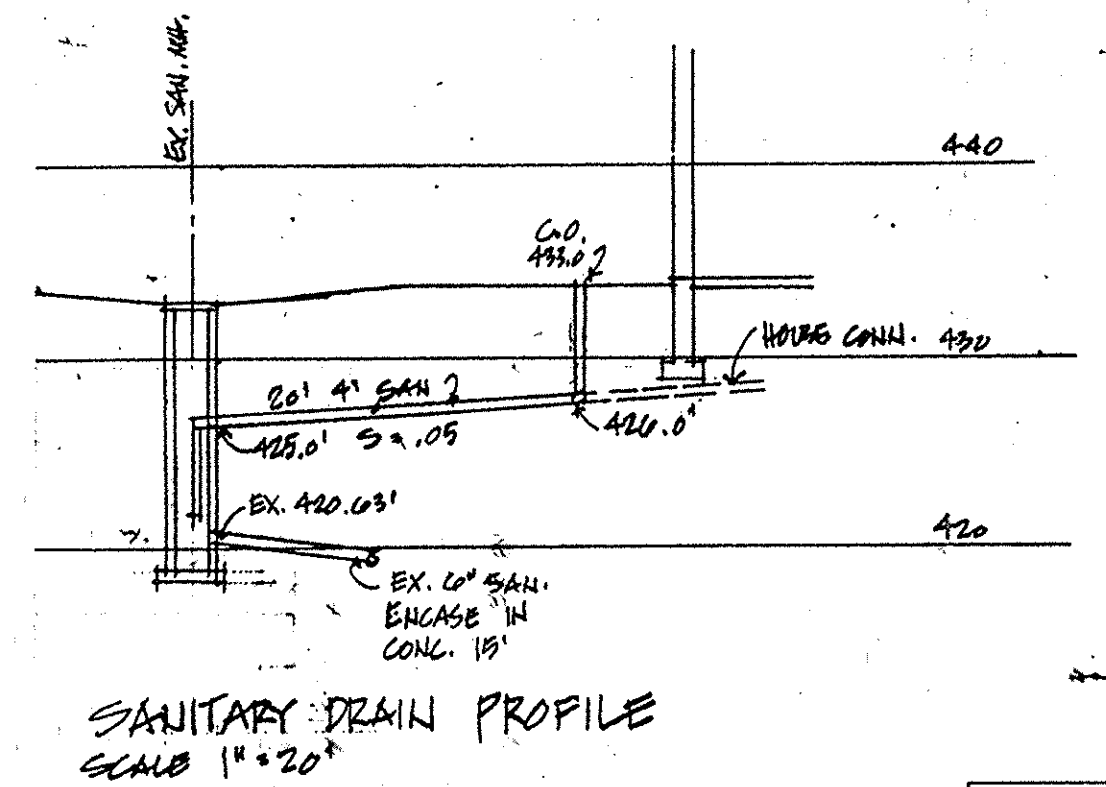
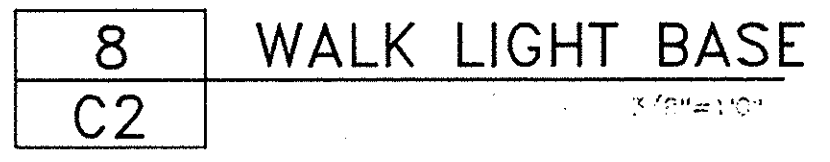
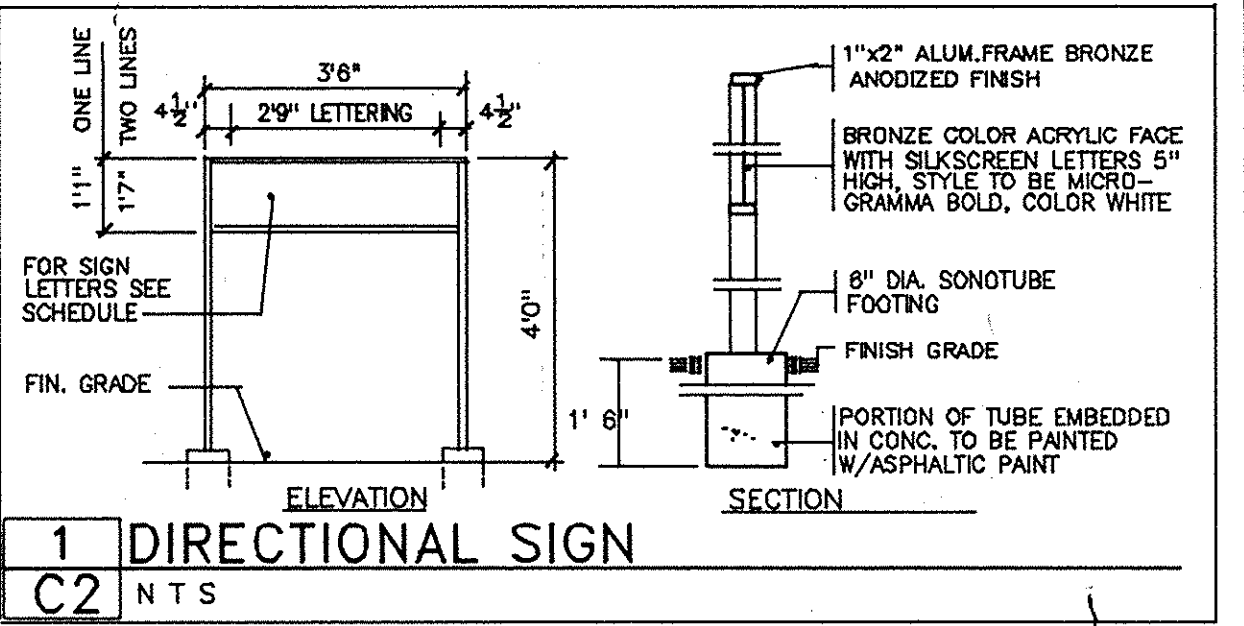
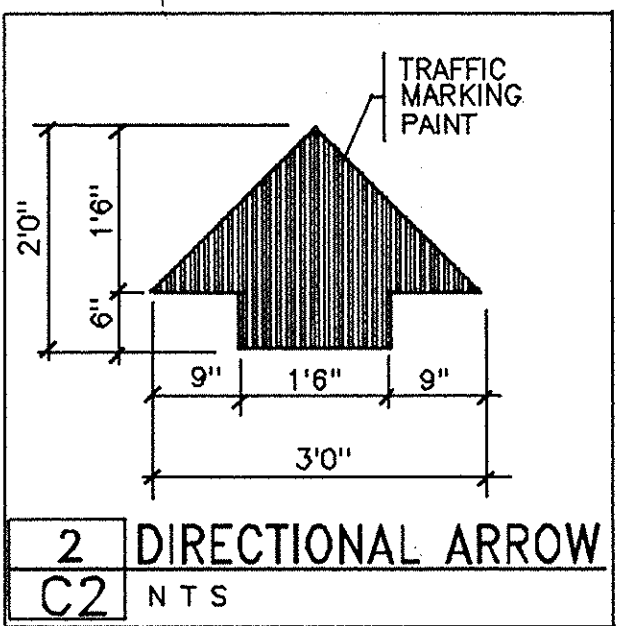
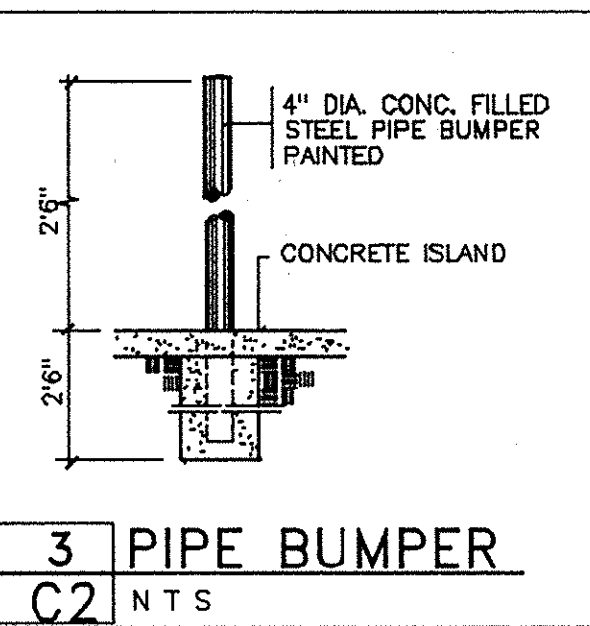
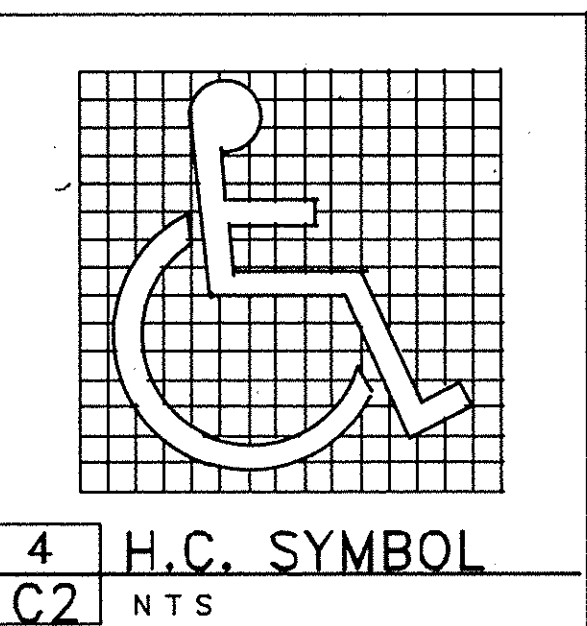
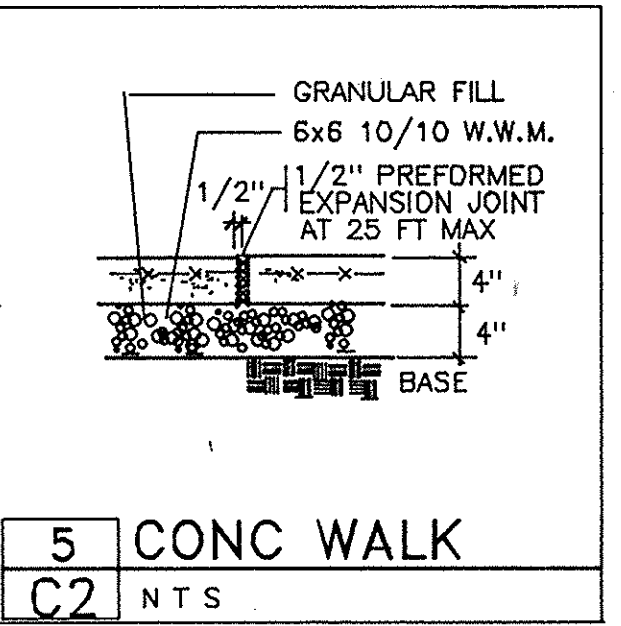
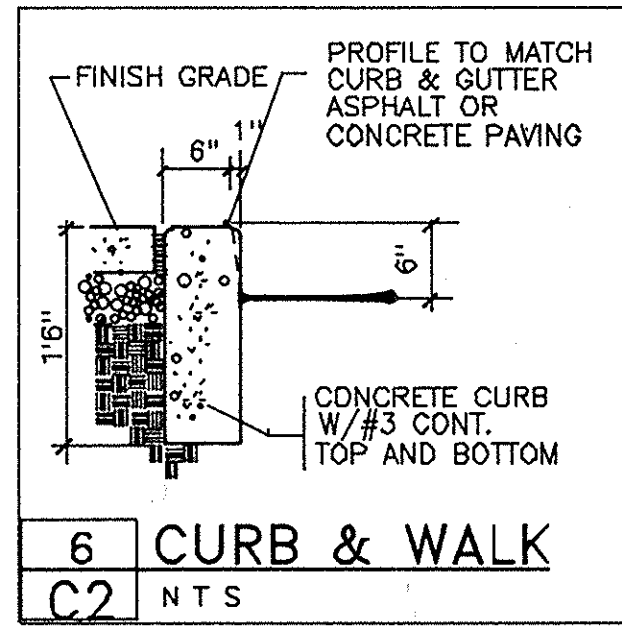
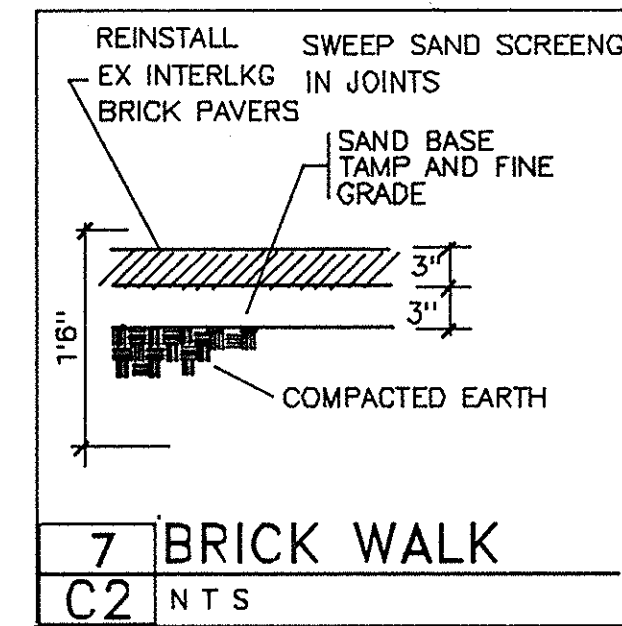
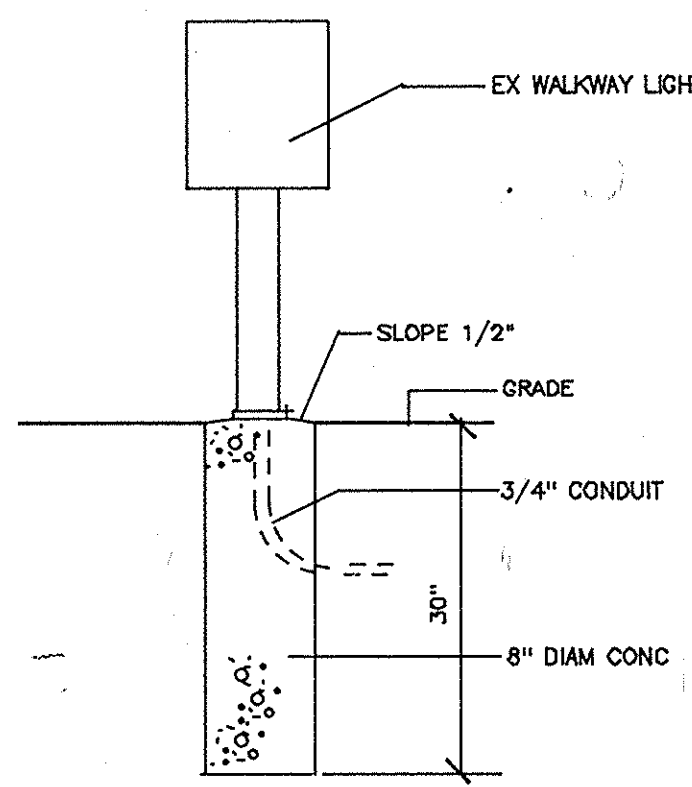
MECHANICAL SITE
UTILITY SPECIFICATIONS

20 APR 90
7 FEB 91

SCALE:
SHEET:
C 6
of
7

APPROVED FOR THE UNIVERSITY BY *James E. ...*
DATE: 2/14/91 TITLE: *Robert Breach, Esq.*

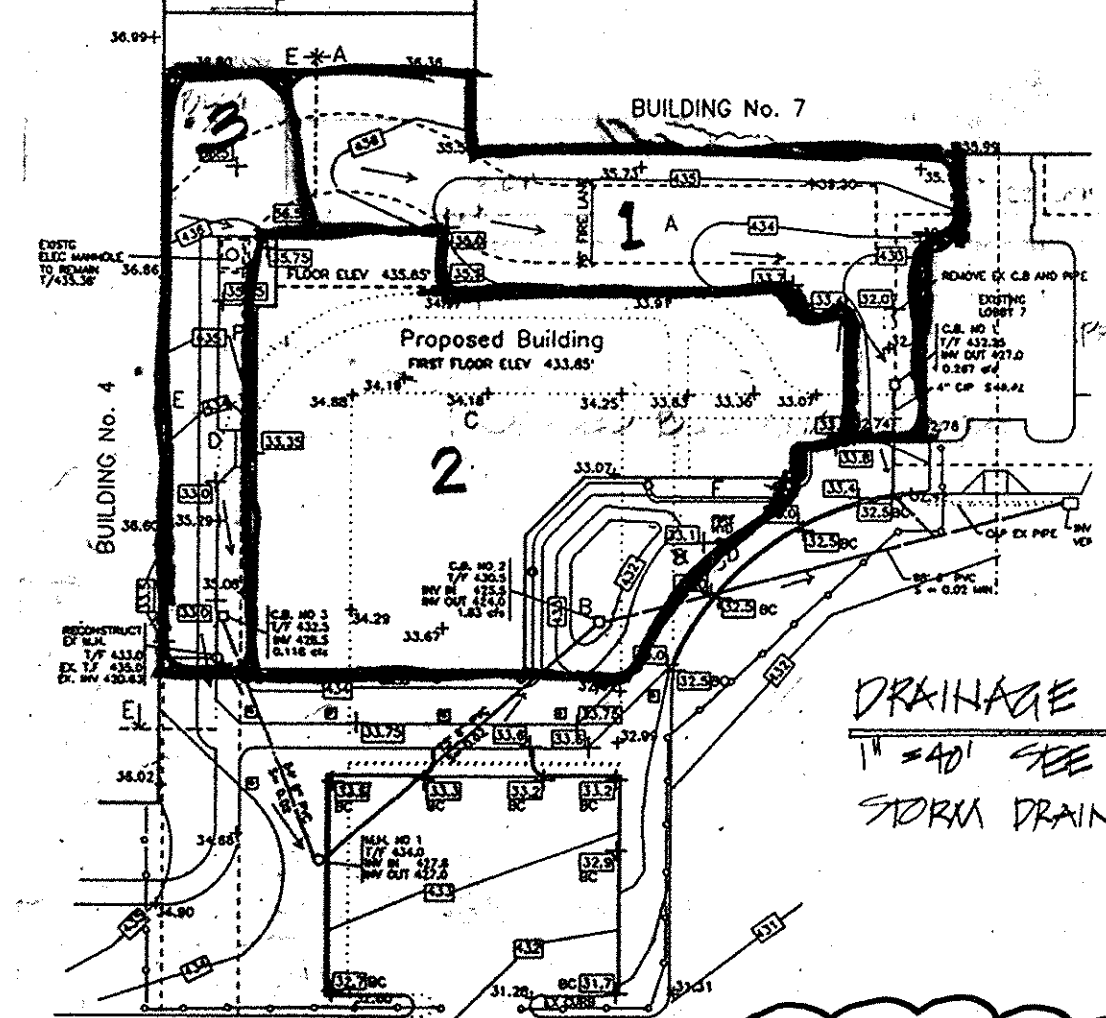
REVISIONS



LEGEND AND BORDER - GREEN BACKGROUND - WHITE SYMBOL ON BLUE BACKGROUND

ALUMINUM 6"x12"x0.080" TEXT AND BORDER - GREEN BACKGROUND - REFLECTIVE WHITE TEXT 3" CHARACTERS

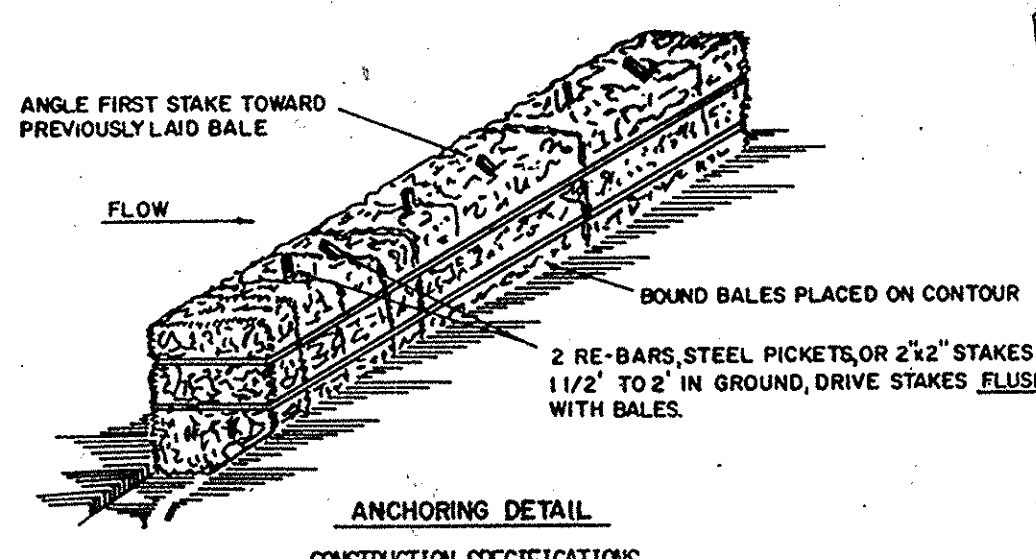
NOTES: SIGN IS TO CONFORM TO HOWARD COUNTY STANDARDS



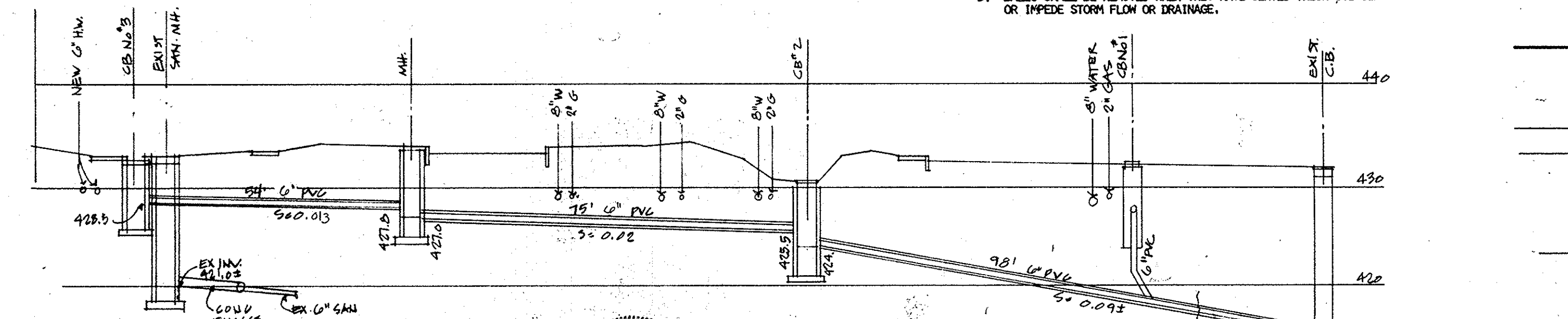
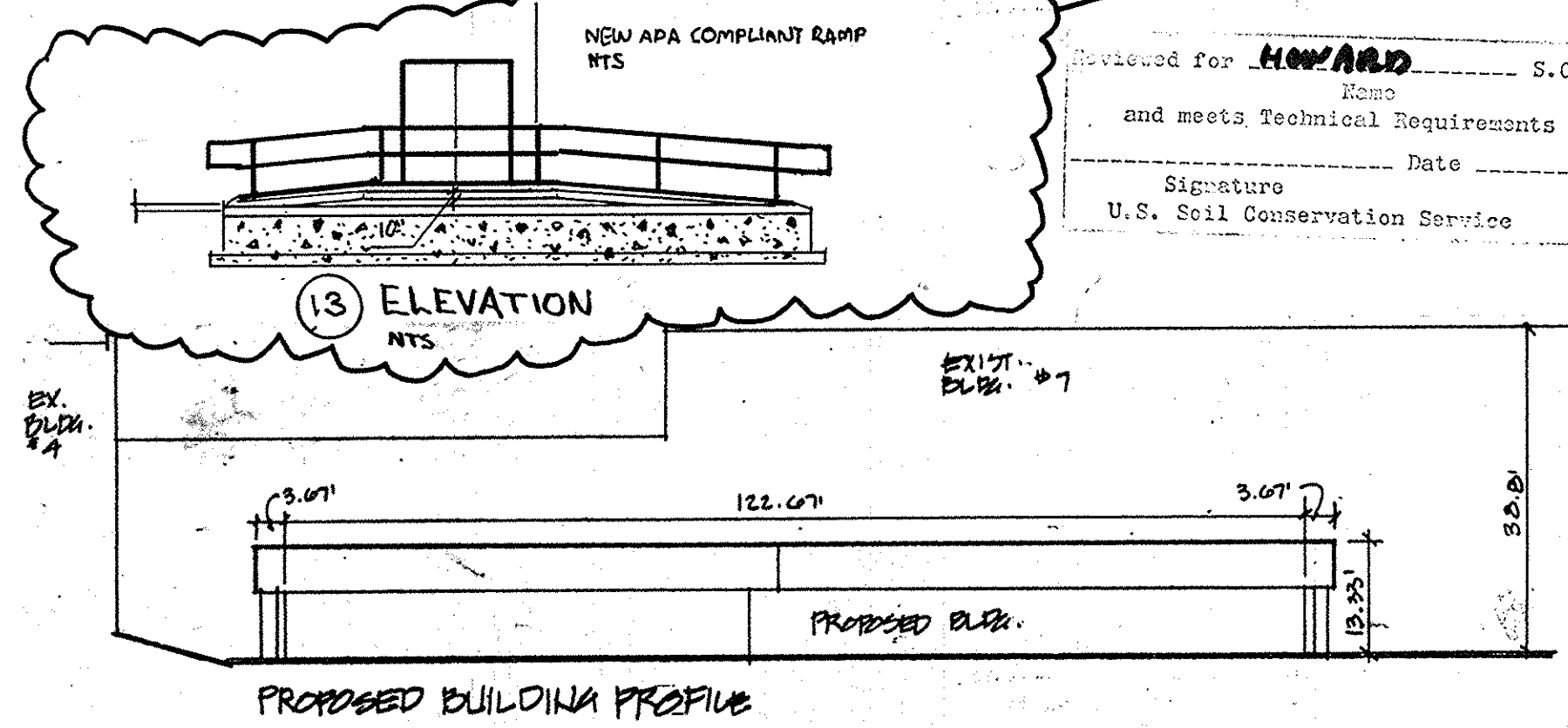
DRAINAGE AREA MAP
1" = 40' SEE ATTACHED STORM DRAINAGE COMPUTATIONS

SEWAGE DRAIN PROFILE
SCALE: 1" = 20'

STRAW BALE DIKE * SPECIFICATIONS
NO SCALE

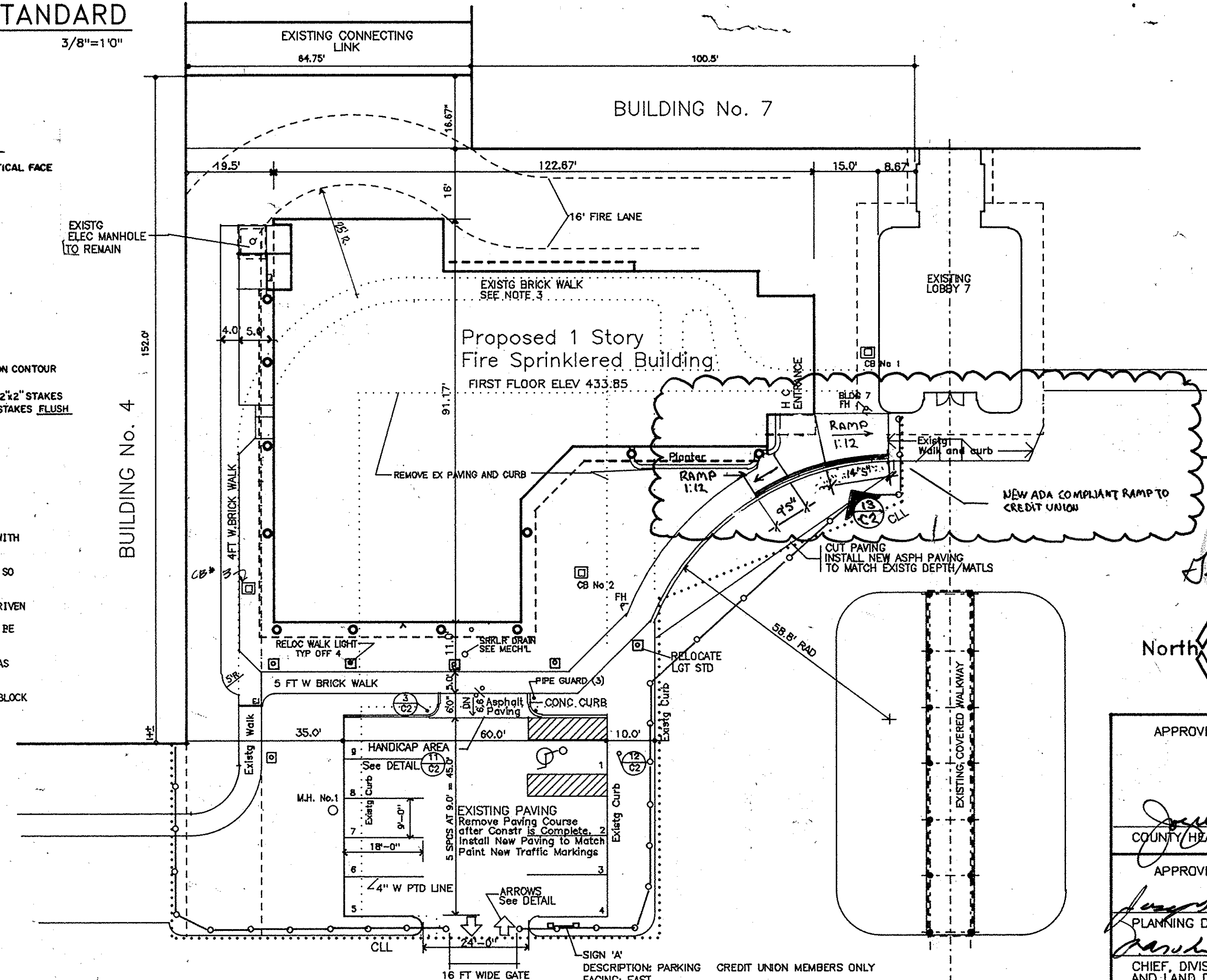


- BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
- EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
- BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
- INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.



STORM DRAIN PROFILE
SCALE: 1" = 20' HORIZ. 1" = 10' VERT.

APPROVED FOR THE UNIVERSITY BY James C. Branch
DATE: 2/14/91 TITLE: Asst. Branch Sup.



- LEGEND
- HANDICAPPED PARKING SYMBOL
 - CLL CONTRACT LIMIT LINE
 - DEMOLITION
 - NEW CONSTRUCTION
 - EXISTING CONSTRUCTION
 - 8' HIGH TEMPORARY CONSTRUCTION FENCE
 - CATCH BASIN
 - FIRE HYDRANT
 - WALK LIGHT
 - MANHOLE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

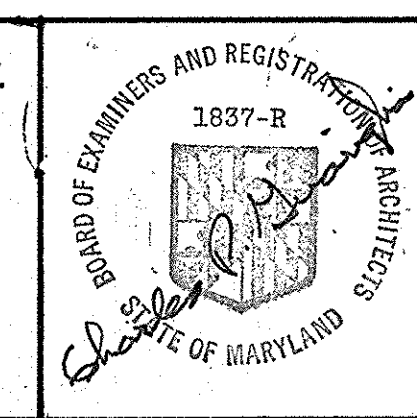
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Site Layout Plan
SCALE 1" = 20'

- NOTES:
- SEE UTILITY DRAWINGS FOR UNDERGROUND PIPING AND ELECTRICAL WORK
 - ALL WALKS TO HAVE 1/8" PER FT CROSS SLOPE
 - REMOVE AND STORE FOR REUSE ALL BRICK PAVERS
 - ALL LANDSCAPE PLANTINGS (SHRUBS, TREES, ETC) TO BE REMOVED AND REPLANTED BY OWNER (N.I.C)

Charles P. Guariglia
13537 Barrett Parkway Drive Suite 215 Manchester, Missouri
Area Code 314 821 2265
One Univac Lane Windsor, Connecticut 06095
Area Code 203 688 7209



THE JOHNS HOPKINS UNIVERSITY
APPLIED PHYSICS LABORATORY
JOHNS HOPKINS ROAD
HOWARD COUNTY MARYLAND
APPROVED FOR THE UNIVERSITY BY James C. Branch
DATE: 2/14/91 TITLE: Asst. Branch Sup.

CREDIT UNION FACILITY
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11100 JOHNS HOPKINS ROAD
LAUREL, MARYLAND 20707

SITE LAYOUT PLAN

20 SEPT 90	SCALE:	SHEET
16 NOV 90	AS NOTED	C 2
28 JAN 91	DATE:	of
7 FEB 91	21 SEPT 90	7
8 AUG 91		

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS