



February 28, 2018  
15466

Jean Fraser, City Planner  
City of Portland  
389 Congress Street  
Portland, ME 04101

**Response to Peer Review Comments dated February 7, 2018**  
**Maine Medical Center, East Tower and Visitor Parking**

Dear Jean:

We are writing to provide supplemental information and respond to review comments presented in a memorandum From Wright Pierce Engineers dated February 7, 2018 regarding the above referenced applications.

The attached information documents existing subsurface conditions on the Maine Medical Center campus, specifically related to below grade construction along the access road at the southwest corner of the visitor parking garage, between the visitors garage and the emergency department drop-off area, with its below grade electrical room.

The text of the comments from the City's February 7, 2018 memorandum is presented below for reference followed by our response. Additional information is attached as noted.

- 1) *Level III Site Plan applications with the City of Portland must submit a stormwater plan pursuant to the regulations of MaineDEP Chapter 500 Stormwater Management Rules. This includes conformance with the Basic, General, and Flooding Standards (Ref: Technical Manual, Section 5. II. Applicability in Portland. C. a.; and Ref: City of Portland Code of Ordinances Sec. 14-526. Site Plan Standards, (b). 3. b.)*
  - a) *Basic Standard: The applicant has confirmed that no additional impervious surfaces are being added to the facility, the proposed work is not causing a change of use, and no site disturbance is proposed. As such, the project is not subject to the requirements of the Basic Standard. Information provided in the updated Construction Management Plan indicates that downstream catch basin inlets will be protected.*
  - b) *General Standard: The applicant has provided information that no additional impervious surfaces are being added to the facility and that the proposed work is not causing a change of use. As such, the project is not subject to the requirements of the General Standard.*
  - c) *Flooding Standard: The applicant has provided information that no additional impervious surfaces or changes of use are occurring as part of the proposed*

*development. As such, the project is not subject to the requirements of the Flooding Standard.*

Noted. There are no proposed changes to the site that would increase impervious area, alter drainage patterns or increase the rate or volume of Stormwater runoff.

2) *East Tower Expansion Connections:*

- a) *The applicant has provided information confirming that the East Tower storm runoff currently discharges to a separated storm sewer system, and that the proposed construction will also discharge to the separated storm sewer system. The roof connections are internal to the facility and no additional information regarding the East Tower Expansion is requested at this time.*

Noted.

- b) *It is understood that the sewers adjacent to the facility are near capacity to serve new development. The applicant has indicated that increases to dry-weather sanitary flows are minimal, and has submitted a Wastewater Capacity Application for review by the Department of Public Works.*

Noted.

3) *Visitor Garage Expansion*

- c) *The existing facility currently discharges to a combined sewer system within Congress Avenue. The applicant has provided a Stormwater Management Report from 2004, indicating stormwater rates to the separate storm sewer in the A-Street corridor.*
- i) *The information provided indicates that the separate storm drain within the A-street corridor is at or near capacity during the modeled 10-year, 24-hour rain event, but that capacity may be available for lower interval rain events.*

The storm drainage system approved by the Planning Board in 2004 and constructed in 2004-2007 for the east Tower is connected to a separated storm drain in A Street constructed by the City of Portland in the late 1990's.

As part of the 2004 approvals, which included the construction of the East Tower and the Visitors Garage, Maine Medical Center constructed on site storm drains to fully separate sewers and storm drains at the perimeter of the campus. The project extended the A Street Storm to Gilman Street and constructed new public storm drains to fully separate runoff

The redevelopment separated and redirected Stormwater runoff from approximately 6.3 acres of existing development from the combined sewers in Crescent St, Ellsworth St, and Congress St to the separated storm drain in A St. A 6' treatment unit diameter unit was installed in the Visitors Garage and a 10' diameter unit was installed in Gilman St.

There are no changes proposed which would increase the rate or volume of runoff from the site when compared to the approved plan. The storm drainage system approved in 2004 tributary to A Street was designed to the capacity of the existing A Street storm drain such that the pipe

would flow crown full in a 10 year storm event without surcharging inlets in a 25 year event. Additional tributary area is likely to exceed this criteria

*ii) Plan 2D Boundary Survey indicates a connection or stub connection leading from the catch basin on the south side of the Visitor Garage that may allow for connection from the Visitor Garage roof drain into the separate storm drain system. The applicant shall provide the following:*

*(1) An updated boundary survey in the vicinity of "Plan 2D Boundary Survey" with utility elevations, pipe sizes, and pipe materials in accordance with the City's Chapter 14 and Technical Manual requirements for a Boundary Survey. Anecdotal information regarding the difficulty for construction in this corridor was discussed in the February 1 meeting. However, a sewer pipe crossing currently exists in this corridor, as does a storm drain or storm drain stub. City staff need additional information regarding existing utilities to confirm if a connection to the separate storm drain will be feasible or not.*

A revised boundary survey plan with structures labels as well as rim and invert elevations has been submitted separately.

We have attached additional documentation further illustrating the existing subsurface conditions adjacent to the Visitors Garage and request a meeting with City Staff to more fully explain our concerns related to the feasibility of making a connection from the visitor garage to the separated drain system.

Attachment 1 to this letter included plans presented to city staff on February 1, 2018 identifying the existing sewer and storm drain connections from the East Tower and Visitors Garage constructed under the 2004 site plan approval. There are no proposed changes that would increase or alter stormwater runoff when compared to the approved plans.

Attachment 2 includes additional record plan information related to the subsurface utilities at the southwest corner of the visitor garage. These include the Utility Plans and Profile drawings for work associated with the Bramhall Campus Expansion project. This project was reviewed by the City staff and approved by the Planning Board in 2004 and constructed from 2004 -2007. The Bramhall Expansion project included the construction of the East Tower, Visitor Garage, Emergency Department renovations, the reconstruction of Westcott Street and construction of the Central Utility Plant.

The utility work included the complete reconstruction the Access Road between the Visitor Garage. Utilities constructed within the access road include:

- Separated storm drains diverting 7 acres of the campus to the separated sewer in A Street
- A 12" water main

- Concrete encased conduit and manhole systems entering the electrical vault below the Emergency Department parking area that includes:
  - The Campus' three (3) primary electrical feeds (owned by CMP)
  - The campus' emergency power feeds from the Central Utility plans
  - Public and private telecommunications cable and fiber optic system
- Mechanical piping serving the main campus from the Central Utility plant including
  - Steam feed and Condensate return
  - Chilled water and return water

Each of these systems converge in the access road, in the vicinity of a drain manhole (identified as DMH# 22098 on the survey plan and is highlighted as DMH-112 on the design plans sheet C300) at the southwest corner of the parking garage. It is our understanding that it is this structure which the review comments refer to as a potential location for connection.

Attachment 3 also includes design plans for the Visitor Garage's earth retention system. The earth retention wall was constructed in 2004 to support a 40' to 60' vertical excavation for the construction of the garage. The retaining wall is a soldier pile and lagging wall with reinforced concrete facing backed with insulation and drainage board. The soldier piles are supported by post tensioned grouted tiebacks which extend 44 to 76 feet horizontally behind the wall. With the top row of tiebacks between 8' and 9' below grade. The area the Staff has suggested for a storm drain connection is highlighted on Sheets SCF-2, SCF-3 and detail 1A on Sheet SFC-4.

It is our opinion that making a drainage connection to DMH #22098 (DMH-112) or the catch basin CB# 22087 (CB-204) is not feasible due to interferences with other existing utilities and due to the potential risk associated with excavating behind the Visitor Garage earth retention system.

The staff comments correctly note that a sewer penetration of this wall does exist, as does a penetration for electrical conduit shown on the earth retention plans. These penetrations through the wall were carefully designed and coordinated with design-build contractor responsible for the design and installation of the retaining wall and tie backs and with the floor and spandrel locations of the garage.

The existing penetrations are reinforced to maintain the integrity of the wall and are spaced to avoid tie backs. We do not recommend cutting new penetrations through this wall. The wall was not designed with future penetrations in mind and have concerns regarding potential risk/liability associated modifying this wall or excavating in close proximity to the tie back tendons behind it.

It is also noted that all of the utility structures, duct banks and electrical manholes in the access road at this location were constructed prior to the installation of retaining wall tie backs and tendons. This was an intentional sequence of construction employed to mitigate risks associated with excavating in close proximity to the highly tensioned tie back tendons.

The staff comments note a drainage stub as a potential connection. We understand this to be a reference to the line shown projecting to the northeast from structure CB#22087 (CB-112). We

have investigated this opening in the manhole. This is not a drain stub that extends as far as the survey plan implies. This line represents the location of a temporary sewer pipe stub that was cored into the structure during the 2004-2007 construction as temporary means to convey a former sewer in this location to Gilman Street, while the Visitor Garage and the permanent sewer was under construction.

It appears that this opening is generally oriented toward the adjacent sewer manhole. The stub was cut and capped and sealed close to the structure after construction and prior to the installation of the adjacent sewer manhole, electrical manholes and duct banks. We believe that access to this entrance into the manhole is now obstructed by these other structures. Due to the tight clearances of the subsurface utilities in this area, excavations were backfilled with flow able concrete fill in this area.

- (2) If a connection from the Visitor Garage roof to the separate storm drain that conveys flows to the A Street corridor is feasible, then the applicant shall provide:*
- (a) A connection that allows for a 1" rain event to be conveyed to the separate storm drain on A Street, consistent with the City's Long-Term CSO Control Plan.*
  - (b) An overflow connection that conveys larger interval storm events towards the combined sewer on Congress Avenue.*

As noted above we do not consider a connection of the Visitor Garage roof to the separated sewer to be feasible given the utility conflicts and potential impacts to the earth retention system. The building design team is currently reviewing additional implications related to the Visitor Garage structure associated with this proposal. These include:

- Such a connection would necessitate exposed horizontal piping in an un heated structure. This is not a recommended practice. All of the existing roof deck piping is plumbed vertically down the center of the structure to avoid this condition.
- Potential penetration's of the existing garage structure deck. The existing structure includes pre-tensioned T-beam construction with the parking surface integral the beams top flange. These decks were not designed or intended for coring or penetrations.

The performance standards of Section 14-526(b)3.a.(i)-(iv) specifically relate to mitigating proposed increases in stormwater runoff. As a vertical expansion of the buildings there is no increase or change in the rate or volume of runoff generated by the site and is therefore not expected to have any new or increased impacts during wet weather or CSO events.

The Performance Standards in Section 14-526(c)3.a. relates to sewer capacity. As discussed in response to previous comments the project proposes a minimal change in the dry weather sewer flows. The project does not increase the number of patient beds in the building. The increase in flow is associated with additional staff and a net addition of six (6 ) staff toilets and

two (2) sinks. This is not expected to have any measureable impact on the combined sewer system.

*iii) For floor drains not exposed to roof runoff, flows shall be conveyed to an oil-water separator connected to the combined sewer. Locations of oil-water separator shall be confirmed on the engineering permitting plans, and detailed.*

The proposed projects are vertical expansions of the upper stories of existing structures, utilizing existing internal plumbing connections. No Floor drains are proposed.

*4) If new connections to the municipal system are constructed, then confirmation of adherence to the Technical Manual and Site Plan Standards regarding storm drain, sewer, and connections to the existing system shall be provided.*

The proposed projects are vertical expansions of the upper stories of existing structures, utilizing existing internal plumbing connections. No site work or new connections to the existing utility systems are proposed.

5) *General Comments:*

*d) Ability to Serve letters from affected utilities are required as part of the Level III Application process. Ability to Serve Letter from Central Maine Power has been provided.*


We have requested an ability to serve confirmation from the Portland Water District and have not received it at this time

*e) The plans should note a location for snow storage or provide a written snow storage plan. The proposed conditions are very similar to the existing conditions. If all snow is removed from the site in the existing conditions, then a statement from the applicant indicating method of removal and that snow removal protocol will not be changed will suffice for this item. If snow is stored on site, snow storage locations shall be indicated.*

The proposed projects are vertical expansions of the upper stories of existing structures, there no changes to the snow removal operations proposed.

Sincerely,

SEBAGO TECHNICS, INC.

  
Daniel L. Riley, PE  
Vice President, Engineering

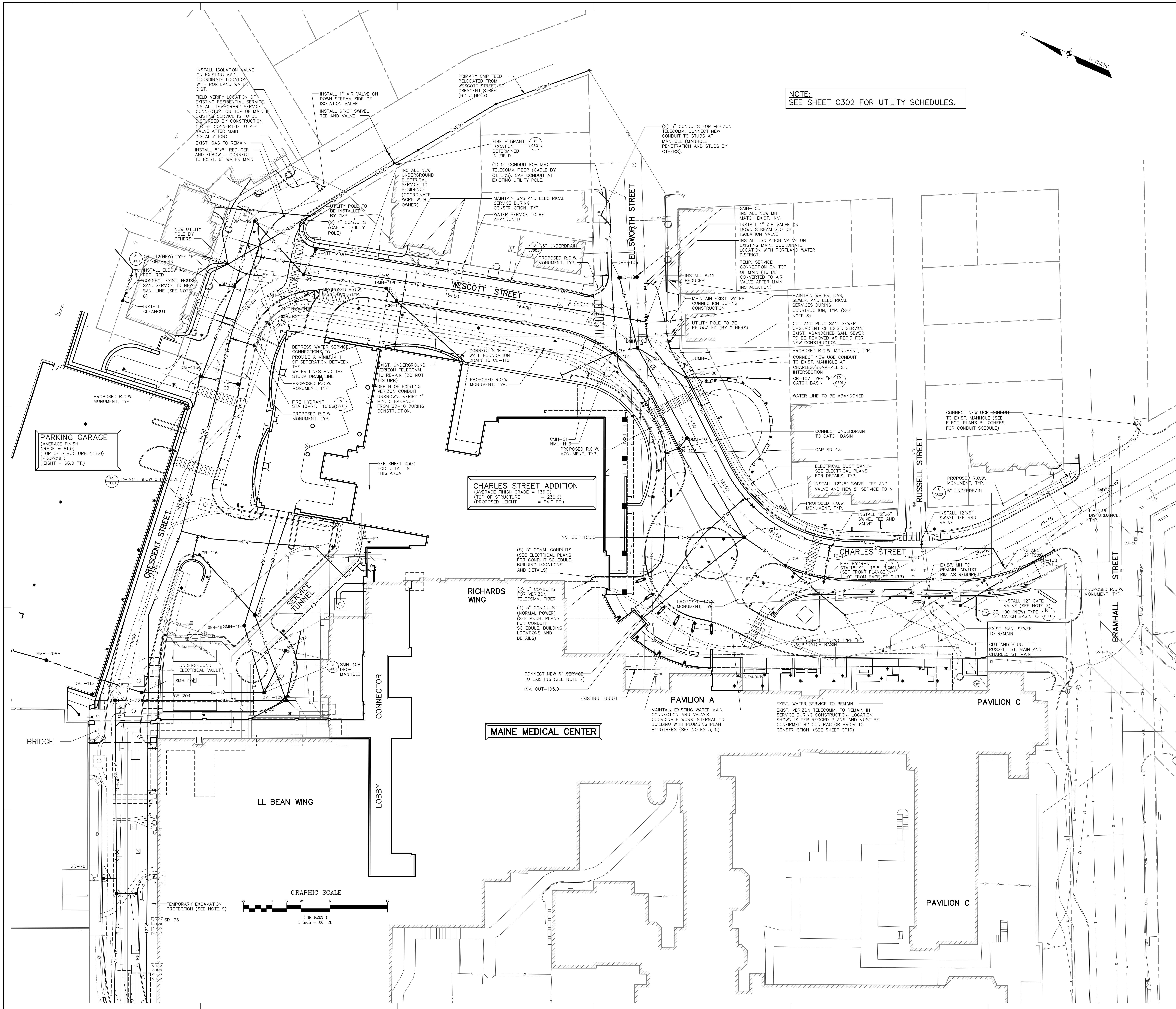
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Enc.

# **ATTACHMENT 1**

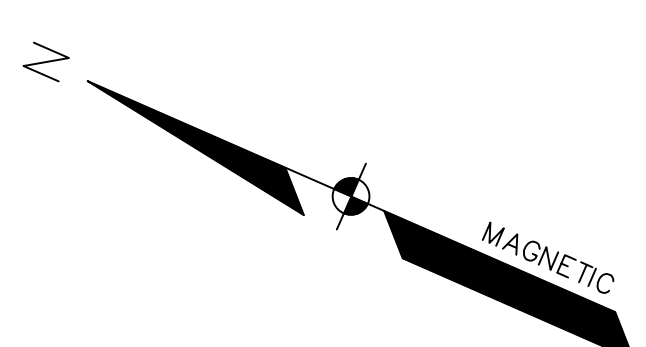
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## **Bramhall Campus Expansion Utility Plans**





**NOTE:**  
SEE SHEET C302 FOR UTILITY SCHEDULES.

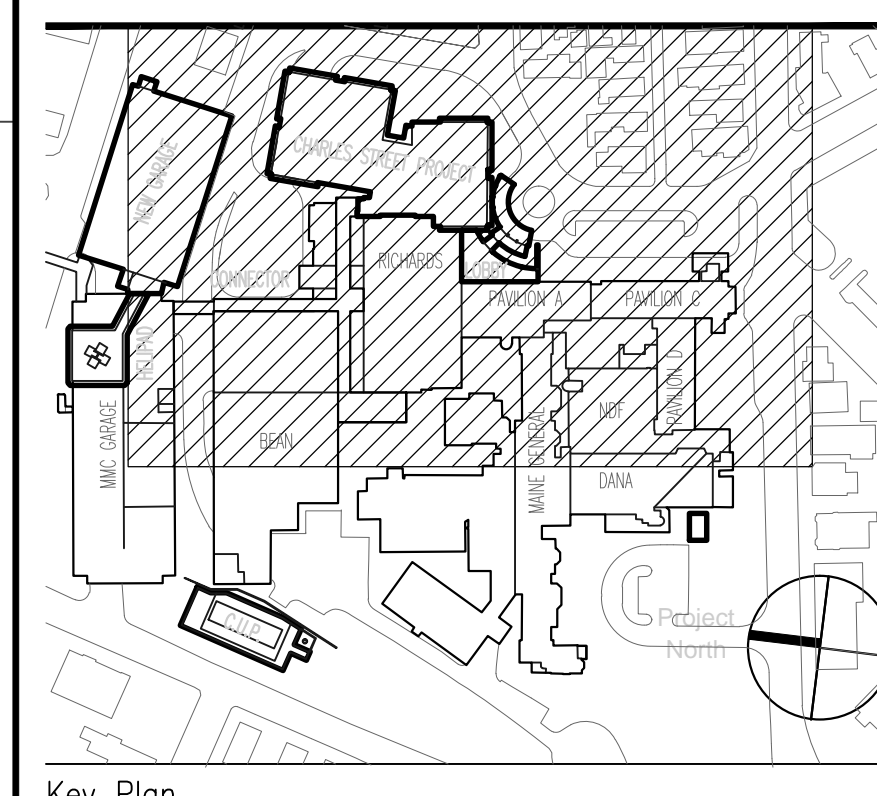


- General Notes:
- SEE ELECTRICAL PLANS FOR CONDUIT SCHEDULES FOR ALL DUCT BANKS SHOWN HERE. SEE ELECTRICAL PLANS FOR CONDUIT SCHEDULES FOR ALL DUCT BANKS SHOWN HERE. SEE ELECTRICAL PLANS FOR CONDUIT SCHEDULES FOR ALL DUCT BANKS SHOWN HERE.
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  - REFER TO SHEET C302 FOR STORM DRAINAGE AND SANITARY SEWER SCHEDULES. REFER TO SHEETS C303 THROUGH C308 FOR UTILITY PROFILES AND STRUCTURE SHOWN/NOT SHOWN LOCATIONS.
  - SEE NOTE 10.
  - THE CONSTRUCTION OF ALL WATER MAINS, SERVICES, HYDRANTS, VALVES AND OTHER APPURTENANCES SHALL BE IN CONFORMANCE WITH PORTLAND WATER DISTRICT STANDARDS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL SITE UTILITY REMEDIATION AND CONSTRUCTION WITH THE PROJECT PHASING AND LOGISTICS PLANS (BY OTHERS).
  - THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING ANY INTERRUPTION OF UTILITY SERVICE TO THE HOSPITAL WITH THE OWNER AND UTILITY COMPANIES. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 72 HOURS NOTICE PRIOR TO UTILITY SERVICE INTERRUPTION.
  - THE SITE CONTRACTOR SHALL FIELD VERIFY THE EXISTING UTILITY SERVICE CONNECTIONS TO PROPERTIES ADJACENT TO THE PROJECT SITE. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING UTILITY SERVICE TO ADJACENT PROPERTIES TEMPORARY OR PERMANENT MEANS THROUGHOUT THE CONSTRUCTION PERIOD.
  - THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, DETAILS AND INSTALLATION OF TEMPORARY EARTH RETENTION AND EXCAVATION SUPPORT (SHEET PLANS, SLOTTED PILES AND LAGGING OR OTHER APPROVED SYSTEM) TO PROTECT EXISTING STRUCTURES FOUNDATIONS AND UTILITIES TO REMAIN. EXCAVATION SUPPORT SYSTEMS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF MAINE. THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND MAINTAIN EXCAVATION SUPPORT SYSTEMS CAPABLE OF SUPPORTING EXCAVATION SECTIONS AND OF RESISTING SOIL AND HYDROSTATIC PRESSURE AND SUPERIMPOSED CONSTRUCTION LOADS.
  - MECHANICAL PIPING IS SHOWN AT LOCATION REQUIRED FOR UTILITY COORDINATION. REFER TO MECHANICAL PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF THE MECHANICAL PIPING SYSTEM AS IN THE PROJECT SPECIFICATIONS.
  - THIS PLAN SHOWS PROPOSED SITE LIGHTING FIXTURES. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING CONCRETE LIGHT POLE BASES AND ALL FIXTURES, CONDUIT AND WIRING EXCEPT FOR BUILDING WALL MOUNTED FIXTURES. SEE ELECTRICAL PLANS BY OTHERS FOR SITE LIGHTING CONDUIT AND WIRING. SEE ITEM CB-101 FOR TYPICAL CONCRETE LIGHT POLE BASE. CONTRACTOR TO CONFORM BASE DIMENSIONS AND DETAILS WITH ARCHITECTURAL PLANS BY OTHERS.

MARK	ISSUE DATE	DESCRIPTION
RFI 223	12/11/07	RFI NUMBER 223 - PACKAGE H
BL 11	05/14/07	BULLETIN NUMBER 11
BL 08	02/14/06	BULLETIN NUMBER 08 - PACKAGE C
BL 07	11/19/05	BULLETIN NUMBER 07 - PACKAGE C
BL 04	11/01/05	BULLETIN NUMBER 04 - PACKAGE C
BL 03	10/21/05	BULLETIN NUMBER 03 - PACKAGE C
BL 02	08/09/05	BULLETIN NUMBER 02 - PACKAGE C
BL 01	07/14/05	BULLETIN NUMBER 01 - PACKAGE C

Issue Log

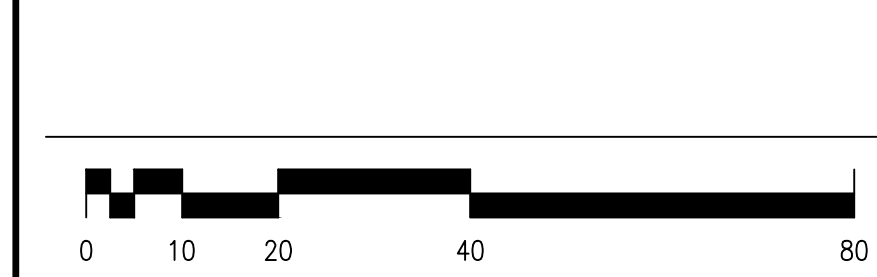
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BL 04	11/01/05	BULLETIN NUMBER 04 - PACKAGE C
BL 03	10/21/05	BULLETIN NUMBER 03 - PACKAGE C
BL 02	08/09/05	BULLETIN NUMBER 02 - PACKAGE C
BL 01	07/14/05	BULLETIN NUMBER 01 - PACKAGE C



**TRO**  
ARCHITECTURE  
PLANNING  
ENGINEERING  
INTERIOR DESIGN  
The Ritchie Organization  
80 Bridge Street  
Newton, MA 02459-1134  
617-969-9400

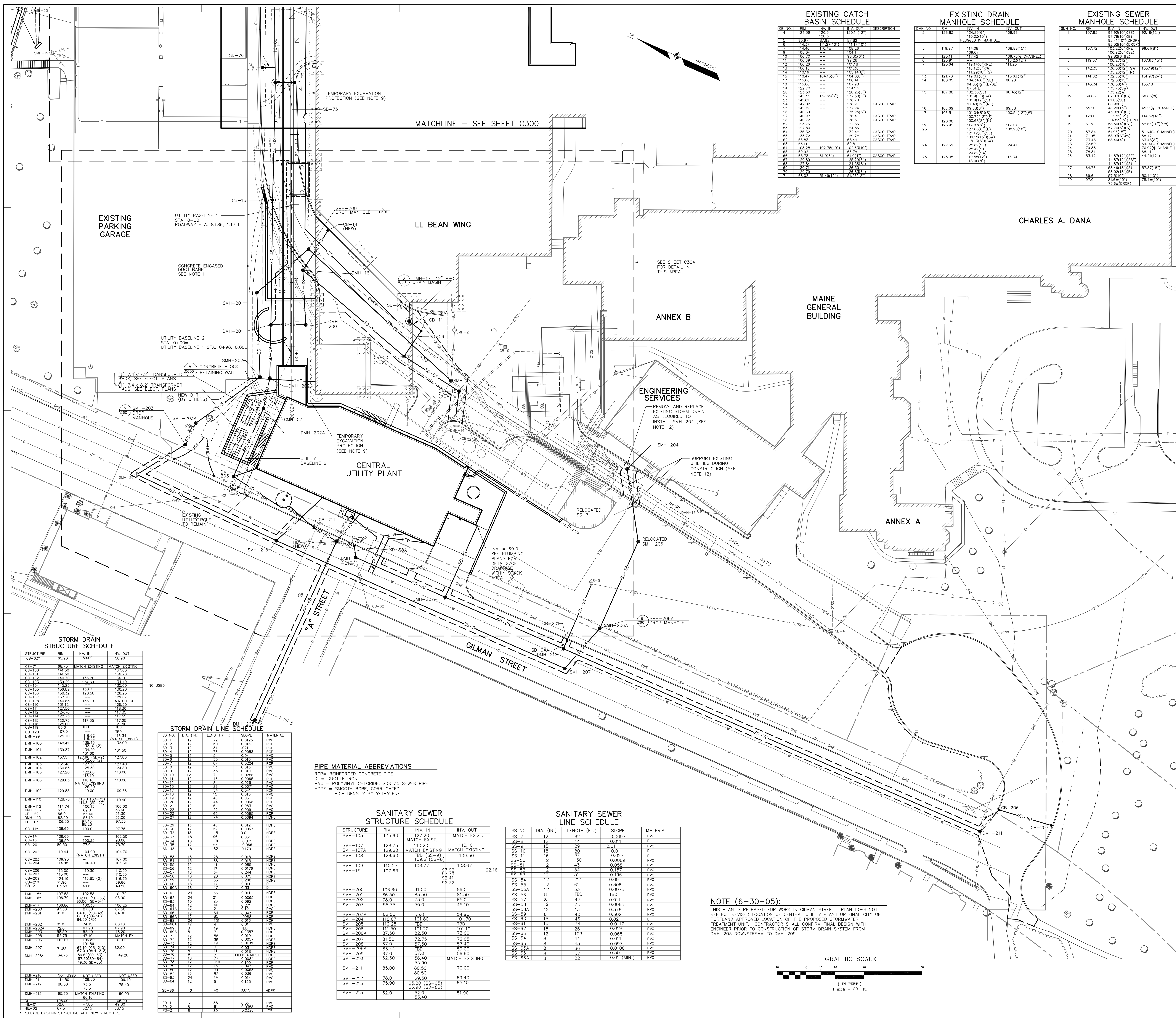
**Maine Medical Center**  
Pkg C - Site Utilities  
Portland, Maine MMC Project No. 21846

Drawing Title  
**UTILITY PLAN**



Commission No.	4677	Date Issued	08/31/04
Scale	1"=20'	Sheet Number	PKG-C
Drawn By	MAL	Approved By	ELR
Checked By	0104610	Project No.	C300





EXISTING CATCH BASIN SCHEDULE			
CB NO.	RIM	INV. IN.	INV. OUT.
4	124.36	125.3	120.1 (12')
5	80.97	87.92	87.92
6	112.97	117.23(0')	117.23(0')
7	114.46	110.44	108.26
9	106.04	---	104
10	106.70	---	98.35(6')
11	106.28	---	101.18
12	106.28	---	101.18
13	115.60	---	108.48
14	110.15	---	105.14(8')
15	115.60	---	108.48
17	115.60	---	108.48
18	122.10	---	119.56
20	121.20	---	119.56
21	141.33	---	137.62(6')
23	141.81	---	138.10
24	142.00	---	138.10
25	141.79	---	137.78
26	142.00	---	138.10
27	140.97	---	136.44
28	140.97	---	136.44
29	125.75	---	122.86
30	125.75	---	122.86
31	125.75	---	122.86
32	125.75	---	122.86
33	125.75	---	122.86
34	125.75	---	122.86
35	125.75	---	122.86
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37	125.75	---	122.86
38	125.75	---	122.86
39	125.75	---	122.86
40	125.75	---	122.86
41	125.75	---	122.86
42	125.75	---	122.86
43	125.75	---	122.86
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49	125.75	---	122.86
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51	125.75	---	122.86
52	125.75	---	122.86
53	125.75	---	122.86
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55	125.75	---	122.86
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60	125.75	---	122.86
61	125.75	---	122.86
62	125.75	---	122.86
63	125.75	---	122.86
64	125.75	---	122.86
65	125.75	---	122.86
66	125.75	---	122.86
67	125.75	---	122.86
68	125.75	---	122.86
69	125.75	---	122.86
70	125.75	---	122.86
71	65.02	61.48(12')	51.26(12')

EXISTING DRAIN MANHOLE SCHEDULE			
DMH NO.	RIM	INV. IN.	INV. OUT.
2	128.83	124.23(6')	109.98
3	119.97	114.08	108.86(10')
5	123.11	117.42	109.79(E CHANNEL)
6	123.81	109.07	118.23(12')
7	123.84	---	---
8	---	119.14(6')(NE)	111.23
9	---	116.12(6')(W)	111.23
10	---	111.28(6')(S)	111.23
11	---	119.14(6')(NE)	111.23
12	---	116.12(6')(W)	111.23
13	---	111.28(6')(S)	111.23
14	120.78	---	116.61(12')
15	107.88	---	106.98
16	106.69	---	98.48(12')
17	106.5	---	99.68
18	128.08	---	119.10
19	123.91	---	119.10
20	---	121.12(6')(SE)	---
21	---	121.12(6')(SE)	---
22	---	121.12(6')(SE)	---
23	---	121.12(6')(SE)	---
24	129.69	---	124.41
25	125.05	---	116.34

EXISTING SEWER MANHOLE SCHEDULE			
SMH NO.	RIM	INV. IN.	INV. OUT.
1	107.63	97.92(10')(SE)	92.16(12')
2	107.72	92.41(10')(DROP)	89.23(10')(DROP)
3	119.57	108.23(10')(SW)	99.61(8')
4	142.35	135.28(12')(SW)	135.19(12')
5	119.57	108.23(10')(SW)	107.63(10')
6	142.35	135.28(12')(SW)	135.19(12')
7	147.02	132.63(10')(SW)	131.97(12')
8	143.34	135.75(9')	135.18
9	---	135.75(9')	---
10	---	135.75(9')	---
11	---	135.75(9')	---
12	69.08	57.03(15')	60.83(W)
13	55.10	46.20(15')	45.11(E CHANNEL)
14	128.01	118.81(10')	114.62(18')
15	61.51	58.50(10')(SW)	52.66(10')(SW)
16	57.84	51.96(10')	51.66(E CHANNEL)
17	71.95	68.53(6')(S)	63.43(E)
18	73.48	68.46(4')(S)	64.11(E CHANNEL)
19	72.69	---	68.92(E CHANNEL)
20	74.81	---	68.1
21	53.42	44.87(12')(SE)	44.21(12')
22	44.87(12')(SE)	---	---
23	44.87(12')(SE)	---	---
24	64.76	58.40(18')(S)	57.31(18')
25	68.6	58.02(18')(E)	57.31(18')
26	68.6	58.02(18')(E)	57.31(18')
27	64.76	58.40(18')(S)	57.31(18')
28	68.6	58.02(18')(E)	57.31(18')
29	68.6	58.02(18')(E)	57.31(18')

- 1. ELECTRICAL AND TELECOMMUNICATIONS DUCT BANK DIMENSIONS INDICATED ON THESE PLANS ARE SHOWN FOR UTILITY COORDINATION. THE ELECTRICAL, TELECOMMUNICATIONS AND TELEVISION DUCT BANK DIMENSIONS INDICATED ON THESE PLANS ARE SHOWN FOR UTILITY COORDINATION. THE ELECTRICAL, TELECOMMUNICATIONS AND TELEVISION DUCT BANK DIMENSIONS INDICATED ON THESE PLANS ARE SHOWN FOR UTILITY COORDINATION. THE ELECTRICAL, TELECOMMUNICATIONS AND TELEVISION DUCT BANK DIMENSIONS INDICATED ON THESE PLANS ARE SHOWN FOR UTILITY COORDINATION.
- 2. REFER TO SHEET C305 FOR STORM DRAIN AND SANITARY SEWER SCHEDULES. REFER TO SHEETS C306 THROUGH C308 FOR UTILITY PROFILES AND STRUCTURE SCHEDULES/NOTES.
- 3. SEE NOTE 10.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL SITE UTILITY REMEDIATION AND CONSTRUCTION WITH THE PROJECT PHASING AND LOGISTICS PLAN (BY OTHERS).
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- 7. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, DETAIL AND INSTALLATION OF TEMPORARY EARTH RETENTION AND EXCAVATION SUPPORT (SHEET PILING, SLIDER PILES AND LACING OR OTHER APPROVED SYSTEM) TO PROTECT EXISTING STRUCTURES, FOUNDATIONS AND UTILITIES TO REMAIN. EXCAVATION SUPPORT SYSTEMS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF MAINE. THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND MONITOR EXCAVATION SUPPORT SYSTEMS THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL VERIFY THE EXISTING UTILITY SERVICE CONNECTIONS TO PROPERTIES ADJACENT TO THE PROJECT SITE. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING UTILITY SERVICE TO ADJACENT PROPERTIES BY TEMPORARY OR PERMANENT MEANS THROUGHOUT THE CONSTRUCTION PERIOD.
- 8. THE CONTRACTOR SHALL VERIFY THE EXISTING STORM DRAIN ALONG THE ACCESS DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN.
- 9. THE CONTRACTOR SHALL VERIFY THE EXISTING STORM DRAIN ALONG THE ACCESS DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN.
- 10. MECHANICAL PIPING IS SHOWN AT LOCATION REQUIRED FOR UTILITY COORDINATION. REFER TO MECHANICAL PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF THE MECHANICAL PIPING SYSTEM AS IN THE PROJECT SPECIFICATIONS.
- 11. THIS PLAN SHOWS PROPOSED SITE LIGHTING FIXTURES. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING CONCRETE LIGHT POLE BASES AND ALL FIXTURES, CONDUIT AND WIRING EXCEPT FOR BUILDING WALL MOUNTED FIXTURES. SEE ELECTRICAL PLANS BY OTHERS FOR SITE LIGHTING CONDUIT AND WIRING. SEE DETAIL C302 FOR TYPICAL CONCRETE LIGHT POLE BASE. CONTRACTOR TO CONFIRM BASE DIMENSIONS AND DETAILS WITH ARCHITECTURAL PLANS BY OTHERS.
- 12. CONSTRUCTION NOTES FOR R11 15 SANITARY SEWER CONSTRUCTION AT SMH 204.
- 13. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, DETAIL AND INSTALLATION OF TEMPORARY EARTH RETENTION AND EXCAVATION SUPPORT TO PROTECT EXISTING STRUCTURES AND TO SUPPORT EXISTING UTILITIES AFFECTED BY EXCAVATION AND SEWER CONSTRUCTION. CONTRACTOR SHALL SUPPORT AND PROTECT THE EXISTING HIGH PRESSURE GAS MAIN, 12" WATER MAIN AND OTHER AFFECTED UTILITIES. ANY TEMPORARY SHUT DOWN OF EXISTING UTILITIES REQUIRED FOR CONSTRUCTION SHALL BE SCHEDULED IN ADVANCE BY THE CONTRACTOR WITH THE AFFECTED UTILITY COMPANY AND THE MAINE MEDICAL CENTER.
- 14. THE CONTRACTOR SHALL VERIFY THE EXISTING STORM DRAIN ALONG THE ACCESS DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN.
- 15. THE CONTRACTOR SHALL VERIFY THE EXISTING STORM DRAIN ALONG THE ACCESS DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN. THE CONTRACTOR SHALL REMOVE EXISTING STORM DRAIN REMOVED NEAR EXISTING DRIVE CURVE LINE AS REQUIRED TO REMAIN.

CHARLES A. DANA

ENGINEERING SERVICES

REMOVE AND REPLACE EXISTING STORM DRAIN AS REQUIRED TO REMAIN. INSTALL SMH-204 (SEE NOTE 12)

SUPPORT EXISTING UTILITIES DURING CONSTRUCTION (SEE NOTE 12)

RELOCATED SS-7

RELOCATED SMH-206

RELOCATED SMH-207

RELOCATED SMH-208

RELOCATED SMH-209

RELOCATED SMH-210

RELOCATED SMH-211

RELOCATED SMH-212

RELOCATED SMH-213

RELOCATED SMH-214

RELOCATED SMH-215

RELOCATED SMH-216

RELOCATED SMH-217

RELOCATED SMH-218

RELOCATED SMH-219

RELOCATED SMH-220

RELOCATED SMH-221

RELOCATED SMH-222

RELOCATED SMH-223

RELOCATED SMH-224

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RELOCATED SMH-292

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RELOCATED SMH-297

RELOCATED SMH-298

RELOCATED SMH-299

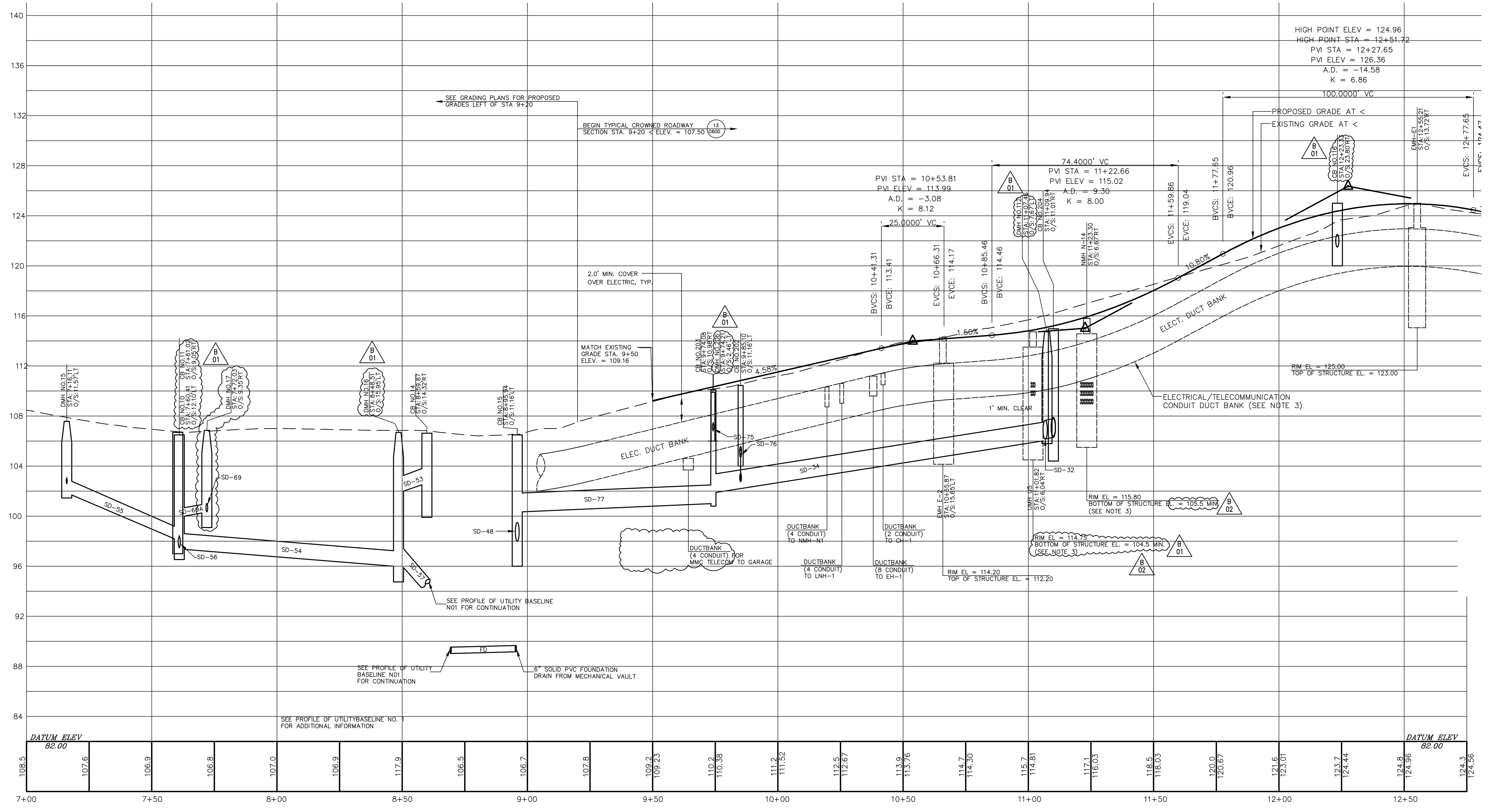
RELOCATED SMH-300

MARK	ISSUE DATE	DESCRIPTION
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BUL 09	03/31/06	BUL 09
BUL 08	02/14/06	BULLETIN NUMBER 08 - PACKAGE C
BUL 07	11/18/05	BULLETIN NUMBER 07 - PACKAGE C
BUL 03	10/21/05	BULLETIN NUMBER 03 - PACKAGE C
	10/05/05	PROGRESS SET
BUL 01	07/14/05	BULLETIN NUMBER 01 - PACKAGE C
	05/25/05	FINAL PLANS TO CITY

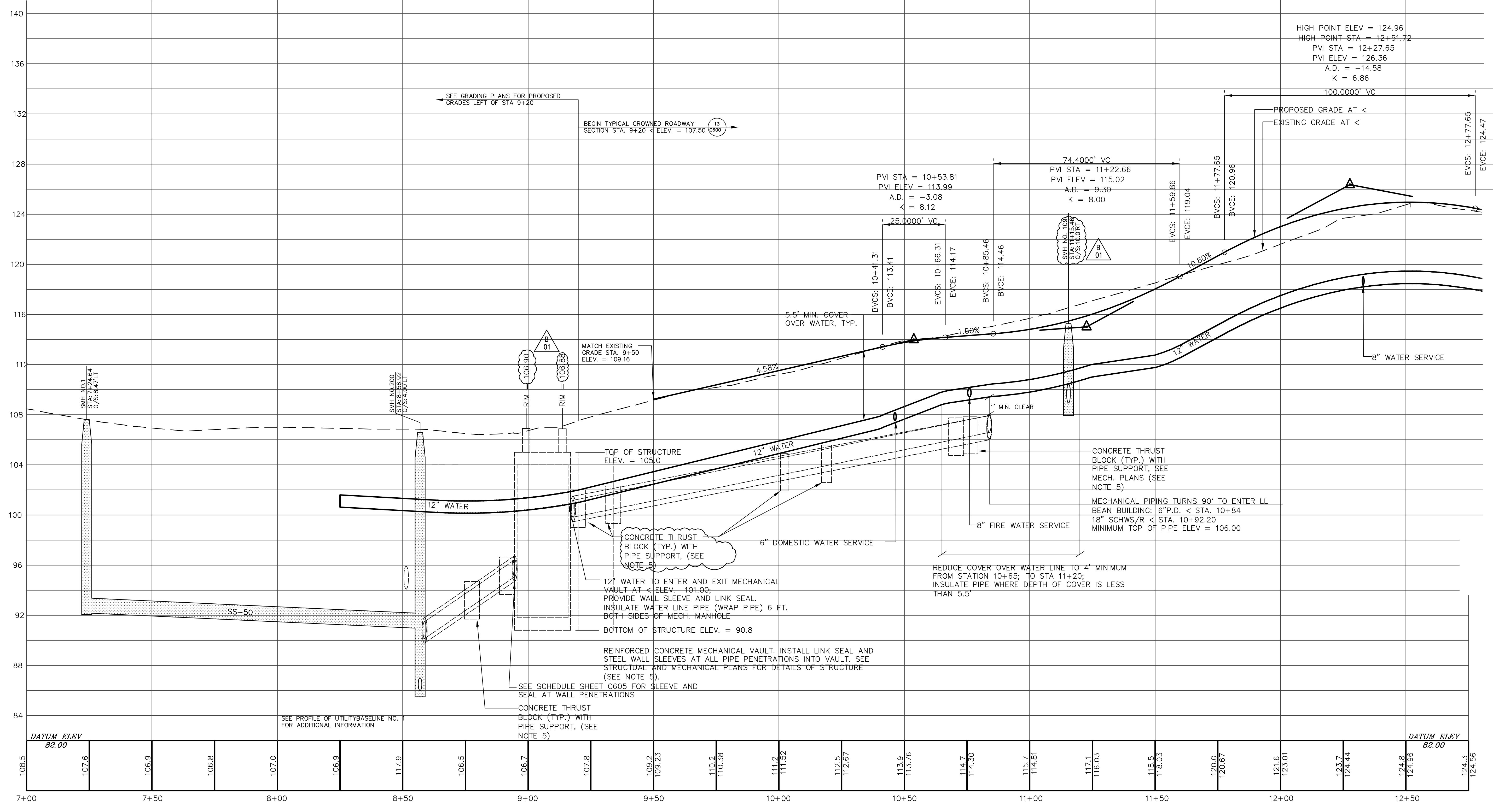


STRUCTURE	RIM	INV. IN.	INV. OUT.
CB-63A	65.90	68.90	68.90
CB-71	68.75	MATCH EXISTING	MATCH EXISTING
CB-100	141.50	---	137.00
CB-101	141.50	---	136.00
CB-102	140.70	138.20	136.10
CB-103	139.70	134.80	134.40
CB-104	145.25	130.3	135.00
CB-105	138.32	128.50	128.25
CB-106	146.85	136.10	MATCH EX.
CB-107	146.85	136.10	MATCH EX.
CB-108	146.85	136.10	MATCH EX.
CB-109	146.85	136.10	MATCH EX.
CB-110	127.50	---	118.10
CB-111	127.50	---	118.10
CB-112	127.50	---	118.10
CB-113	127.50	---	118.10
CB-114	127.50	---	118.10
CB-115	127.50	---	118.10
CB-116	127.50	---	118.10
CB-117	127.50	---	118.10
CB-118	127.50	---	118.10
CB-119	127.50	---	118.10
CB-120	107.0	---	180
DMH-69	125.70	118.52	116.54
DMH-100	140.41	135.45	(MATCH EXIST.)
DMH-101	139.37	134.20	132.00
DMH-102	137.5	127.80 (SS-3)	127.80
DMH-103	135.48	127.50	127.40
DMH-104	130.85	124.80	124.80
DMH-105	127.20	122.60	118.00
DMH-106	127.20	118.10	---
DMH-108	129.65	110.10	110.00
DMH-109	129.65	110.10	110.00
DMH-110	128.75	118.0 (SS-3)	110.40
DMH-112	114.74	111.3 (SS-27)	106.00
DMH-113	87.0	82.0	80.00
DMH-114	87.0	82.0	80.00
DMH-115	87.0	82.0	80.00
DMH-116	87.0	82.0	80.00
DMH-117	87.0	82.0	80.00
DMH-118	87.0	82.0	80.00
DMH-119	87.0	82.0	80.00
DMH-120	87.0	82.0	80.00
DMH-121	87.0	82.0	80.00
DMH-122	87.0	82.0	80.00
DMH-123	87.0	82.0	80.00
DMH-124	87.0	82.0	80.00
DMH-125	87.0	82.0	80.00
DMH-126	87.0	82.0	80.00
DMH-127	87.0	82.0	80.00
DMH-128	87.0	82.0	80.00
DMH-129	87.0	82.0	80.00
DMH-130	87.0	82.0	80.00
DMH-131	87.0	82.0	80.00
DMH-132	87.0	82.0	80.00
DMH-133	87.0	82.0	80.00
DMH-134	87.0	82.0	80.00
DMH-135	87.0	82.0	80.00
DMH-136	87.0	82.0	80.00
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DMH-148	87.0	82.0	80.00
DMH-149	87.0	82.0	80.00
DMH-150	87.0	82.0	80.00
DMH-151	87.0	82.0	80.00
DMH-152	87.0	82.0	80.00
DMH-153	87.0	82.0	80.00
DMH-154	87.0	82.0	80.00
DMH-155	87.0	82.0	80.00
DMH-156	87.0	82.0	80.00
DMH-157	87.0	82.0	80.00
DMH-			





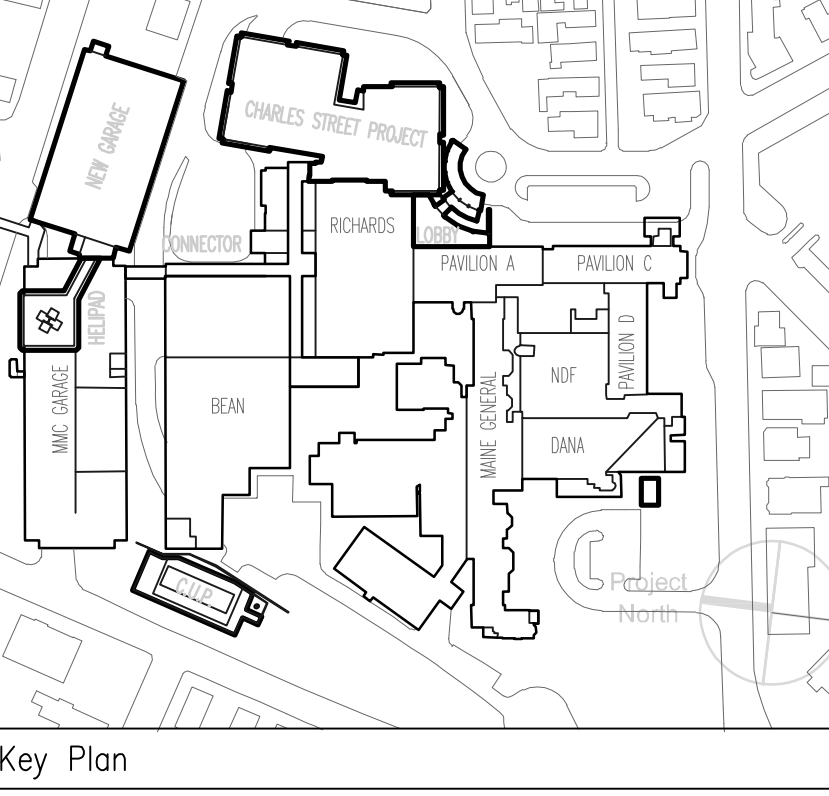
**PROFILE: STORM DRAIN, ELECTRICAL AND GAS PIPING**  
(STA. 7+00 TO STA. 12+75)  
SCALE: 1"=20' HORIZ.  
1"=4' VERT.



**PROFILE: SAN. SEWER, WATER AND MECHANICAL PIPING**  
(STA. 7+00 TO STA. 12+75)  
SCALE: 1"=20' HORIZ.  
1"=4' VERT.

- General Notes:
- SEE SHEET C302 FOR DRAINAGE AND SANITARY SEWER SCHEDULES.
  - FOR CLARITY ONLY PROPOSED UTILITIES ARE SHOWN UNLESS OTHERWISE INDICATED. REFER TO EXISTING CONDITIONS AND SITE DEMOLITION PLANS.
  - ELECTRICAL/TELECOMMUNICATIONS CONDUIT DUCTBANK DIMENSIONS ARE SHOWN FOR UTILITY COORDINATION. THE CONTRACTOR MAY ALTER THE PROPOSED DUCT BANK ARRANGEMENT PROVIDED THAT REQUIRED CLEARANCES FROM ADJACENT UTILITIES ARE MAINTAINED. REFER TO ELECTRICAL PLANS AND SPECIFICATIONS FOR DUCT BANK SCHEDULE DETAILS OF DUCT BANK CONSTRUCTION, ELECTRICAL MANHOLE DETAILS AND SHOP DRAWING REQUIREMENTS FOR SITE ELECTRICAL WORK.
  - SEE STRUCTURAL PLANS FOR WALL PENETRATION REINFORCEMENT DETAILS SEE SHEET C605 FOR SCHEDULE OF WALL SLEEVE AND SEALS.
  - MECHANICAL PIPING IS SHOWN TO ESTABLISH REQUIRED GRADES FOR UTILITY COORDINATION. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF THE MECHANICAL PIPING SYSTEM AS REQUIRED IN THE PROJECT SPECIFICATIONS. LOCATION OF THRUST BLOCKS AND MANHOLE CLEARS ARE SHOWN HERE FOR INFORMATION ONLY AND ARE SUBJECT TO CHANGE.

MARK	ISSUE DATE	DESCRIPTION
BUL 03	10/21/05	BULLETIN NUMBER 03 - PACKAGE C
BUL 02	08/09/05	BULLETIN NUMBER 02 - PACKAGE C
BUL 01	07/14/05	BULLETIN NUMBER 01 - PACKAGE C
PERMIT	05/25/05	FINAL PLANS TO CITY
PERMIT	09/16/04	PERMIT SET
BID	08/31/04	BID SET



**TRO**  
ARCHITECTURE  
PLANNING  
ENGINEERING  
INTERIOR DESIGN

The Ritchie Organization  
50 Bridge Street  
Newton, MA 02459-1134  
617-555-9400

**Maine Medical Center**  
Pkg C - Site Utilities  
Portland, Maine MMC Project No. 21846

PROFILE:  
CRESCENT/WESCOTT/  
CHARLES STREETS

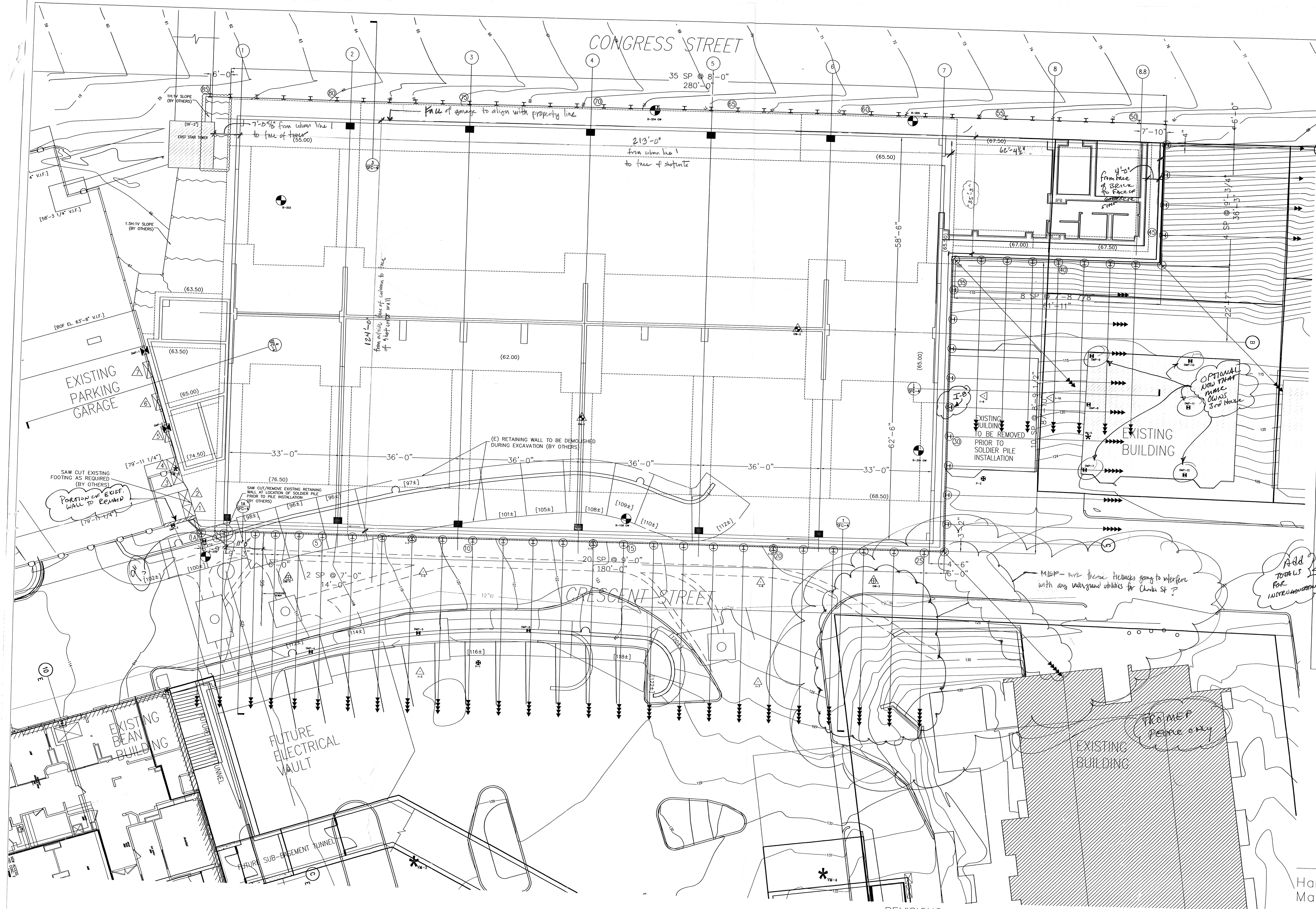
Revision No.	4677	Issue Date	08/31/04
Scale	AS SHOWN	Sheet Number	PKG-C
Drawn By	MAL	Checked By	ELR
Project No.	010460	Project Name	C305

# **ATTACHMENT 2**

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## **Garage Earth retention Plans**





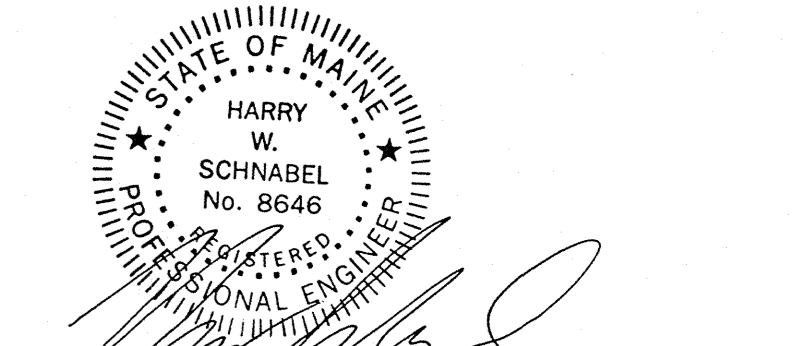
**LEGEND**

- EXISTING GRADE CONTOUR
- [79'-11 1/4"] BOTTOM OF EXISTING FOOTING
- (76.50) BOTTOM OF PROPOSED FOOTING
- 20 SOLDIER BEAM NUMBER
- SOLDIER BEAM
- TIEBACK NUMBER OF ARROWS DESIGNATE THE NUMBER OF TIERS
- UNDERPINNING PIT
- UNDERPINNING PIT NUMBER
- 9-200 BORING NUMBER
- APPROXIMATE BORING LOCATION
- DEFLECTION MONITORING POINT (BY OTHERS)
- PIEZOMETER (BY OTHERS) (2 TOTAL SHOWN)
- OBSERVATION WELL (BY OTHERS) (4 TOTAL SHOWN)
- INCLINOMETER (BY OTHERS) (10 TOTAL SHOWN)
- VIBRATION MONITORING POINT (BY OTHERS) (5 TOTAL SHOWN)
- TEMPORARY WALE/BRACE TO BE REMOVED AFTER SLAB INSTALLATION

Add TOTALS FOR INSTRUMENTATION

MEP - are these tiebacks going to interfere with any underground utilities for Charles St?

16'-10"  
13'-3"  
4'-0"  
35'-3"



Harry W. Schnabel, P.E.  
Maine P.E. No. 8646

REVISIONS		
NO	DATE	DESCRIPTION
1	03/01/05	ENGINEER'S PEER REVIEW COMMENTS
2	05/05/05	ENGINEER'S FINAL PEER REVIEW
3	07/25/05	REVISED SHORING LOCATION

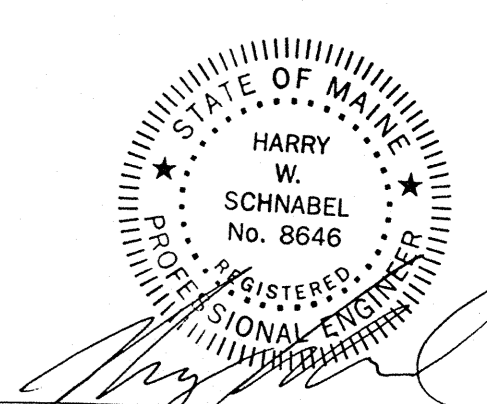
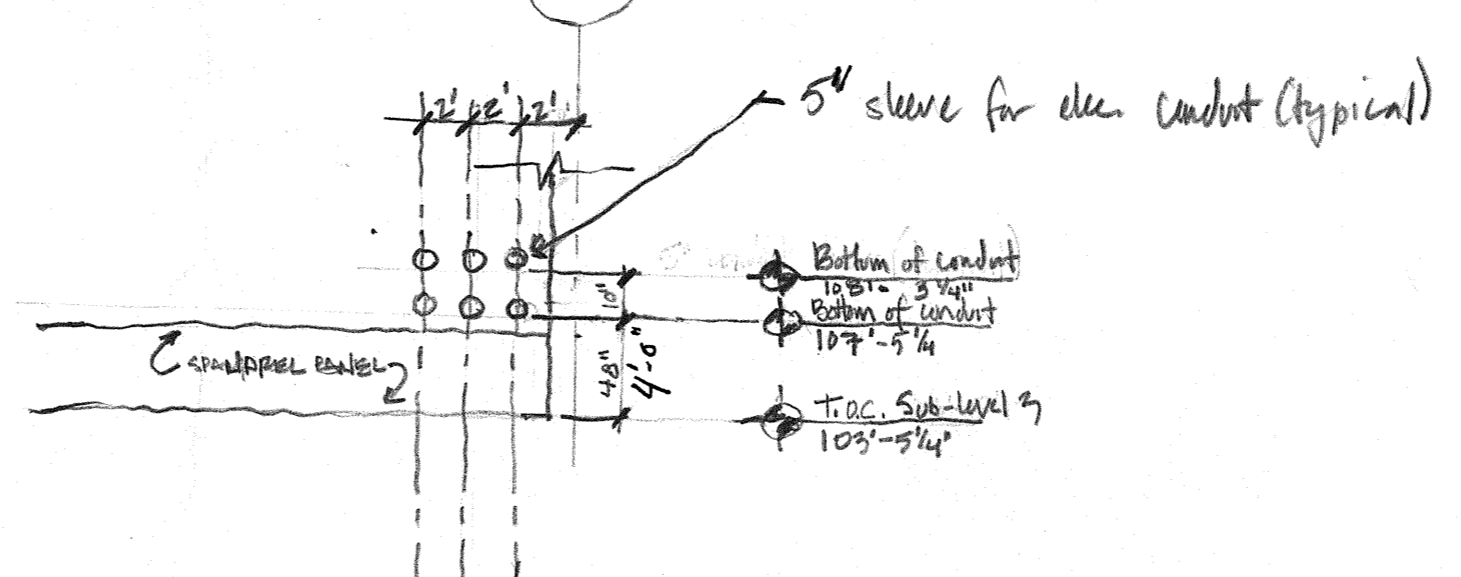
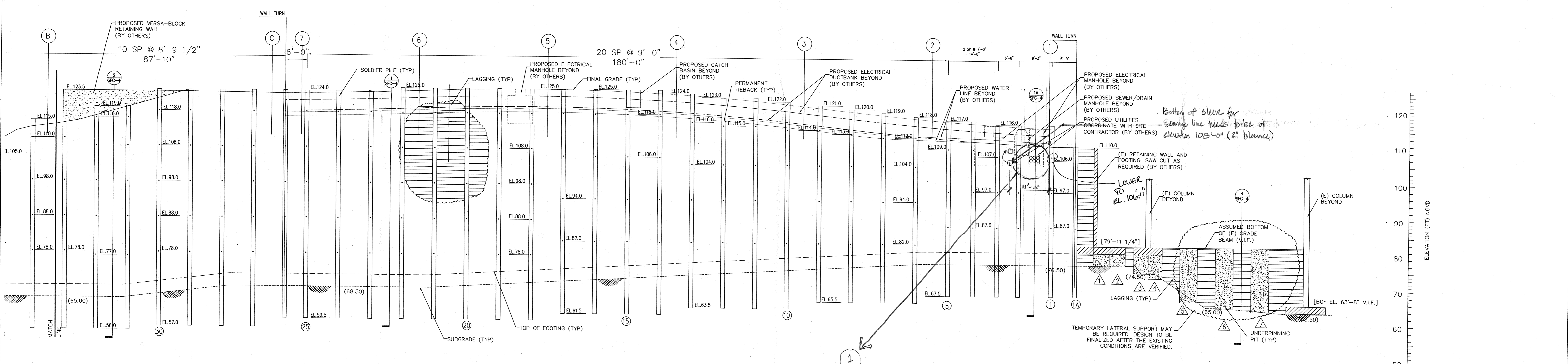
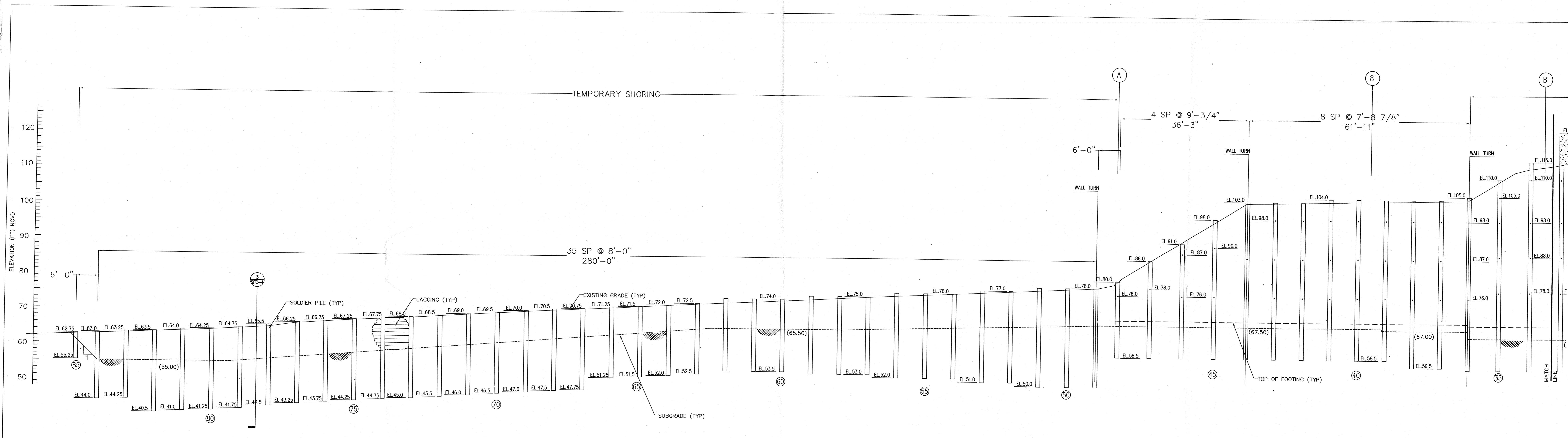
EXCAVATION SUPPORT PLAN	
MAINE MEDICAL CENTER PARKING GARAGE	
Portland, Maine	
Date: 12/10/04	Job Number: 06-3634
Scale: 3/32"=1'-0"	Drawing No: SFC-2

See Plans 1 and B103 in Package F

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**Schnabel** Foundation Company  
Engineers and Contractors  
200 Turnpike Road  
Southborough, Massachusetts  
Atlanta • Boston • Denver • Chicago  
Houston • Los Angeles • Philadelphia



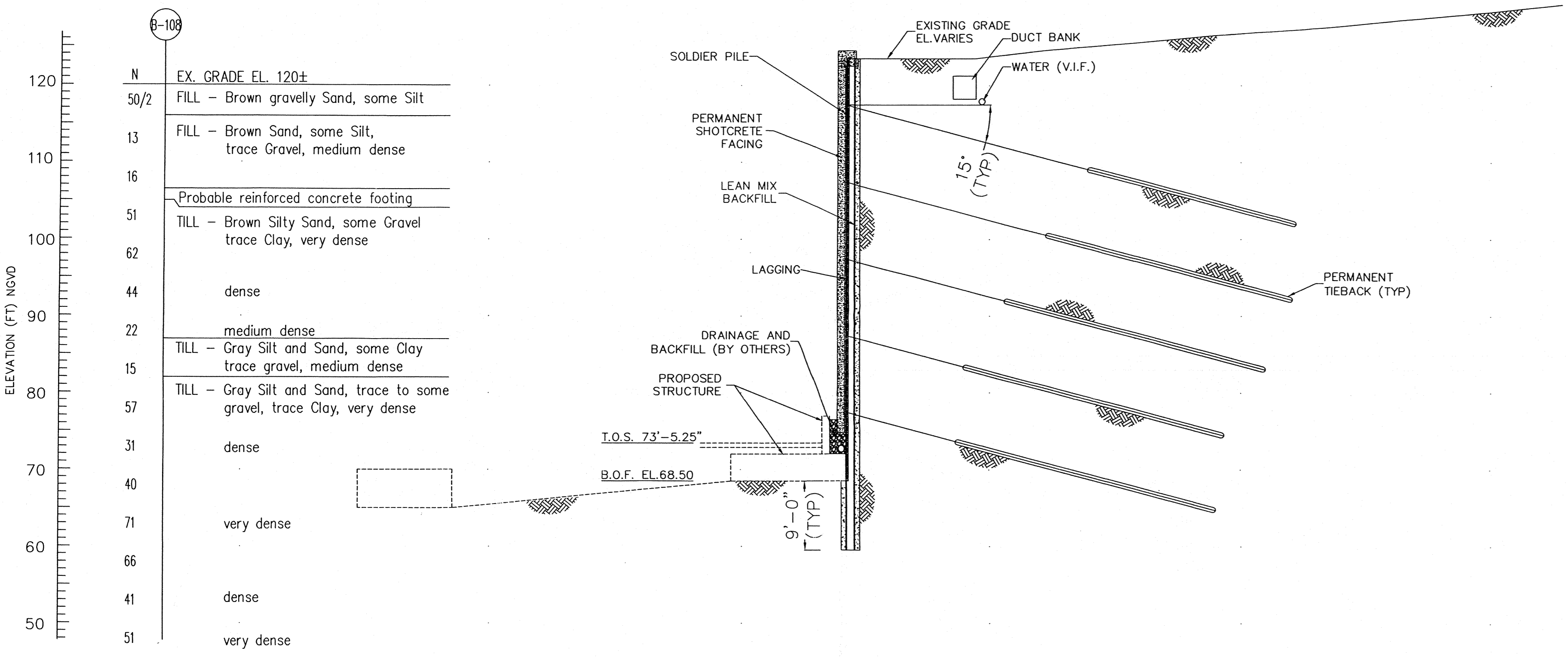


Harry W. Schnabel, P.E.  
Maine P.E. No. 8646

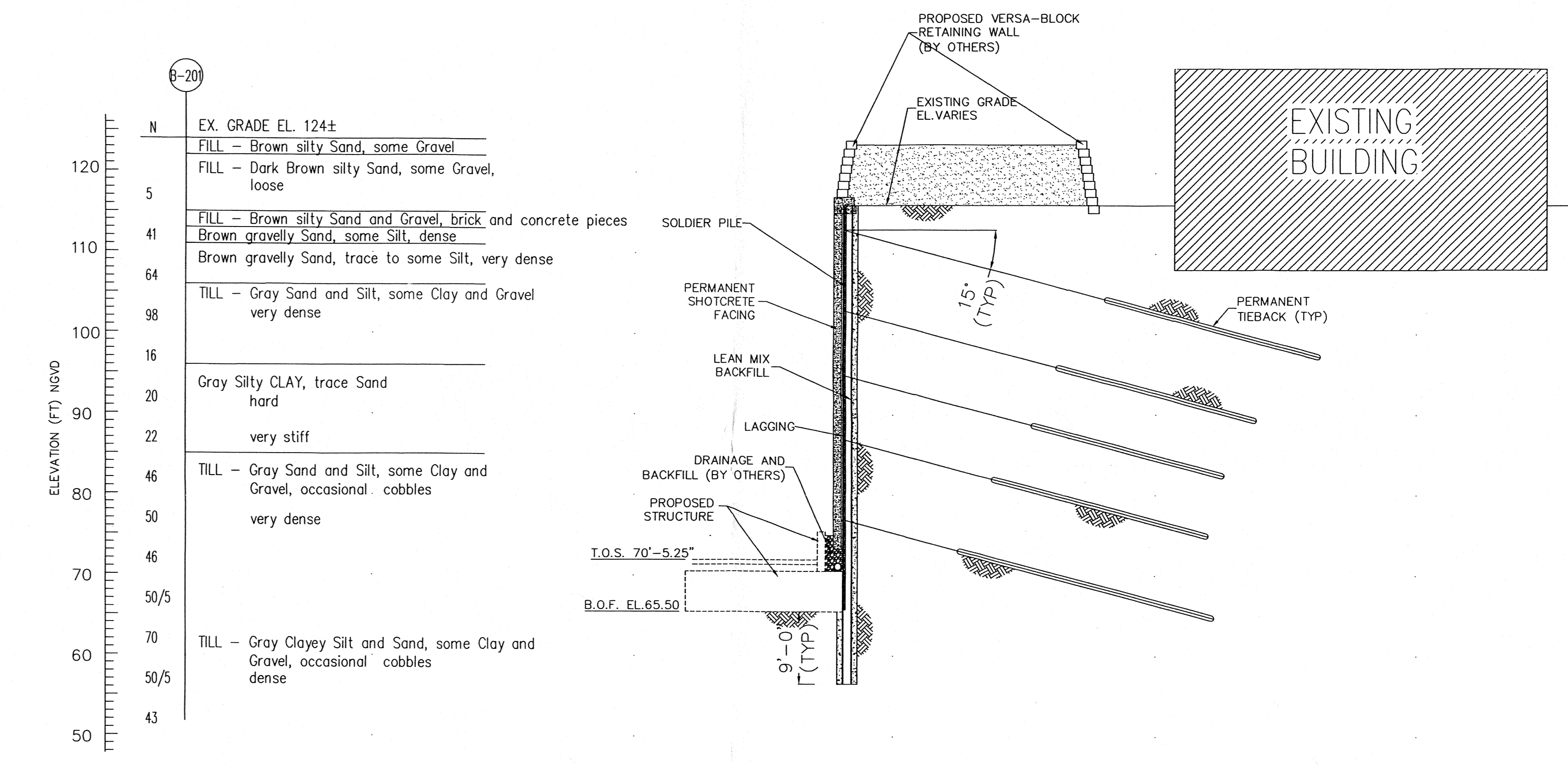
REVISIONS			EXCAVATION SUPPORT ELEVATIONS	
NO	DATE	DESCRIPTION		
1	03/01/05	ENGINEER'S PEER REVIEW COMMENTS	MAINE MEDICAL CENTER PARKING GARAGE	
2	05/05/05	ENGINEER'S FINAL PEER REVIEW	Portland, Maine	
3	07/25/05	REVISED SHORING LOCATION	Date: 12/10/04	Job Number: 06-3634
			Scale: 3/32"=1'-0"	Drawing No: SFC-3

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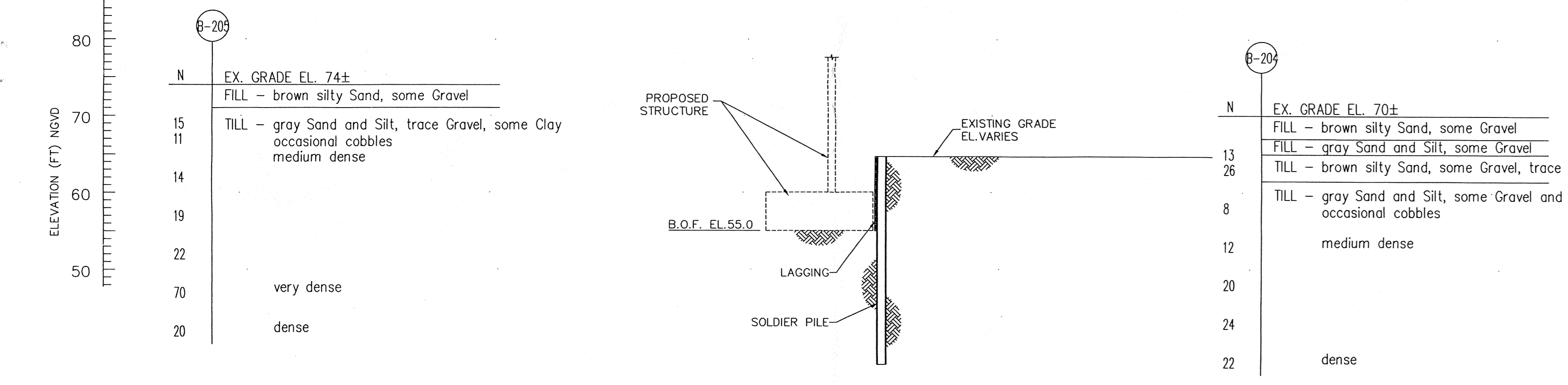




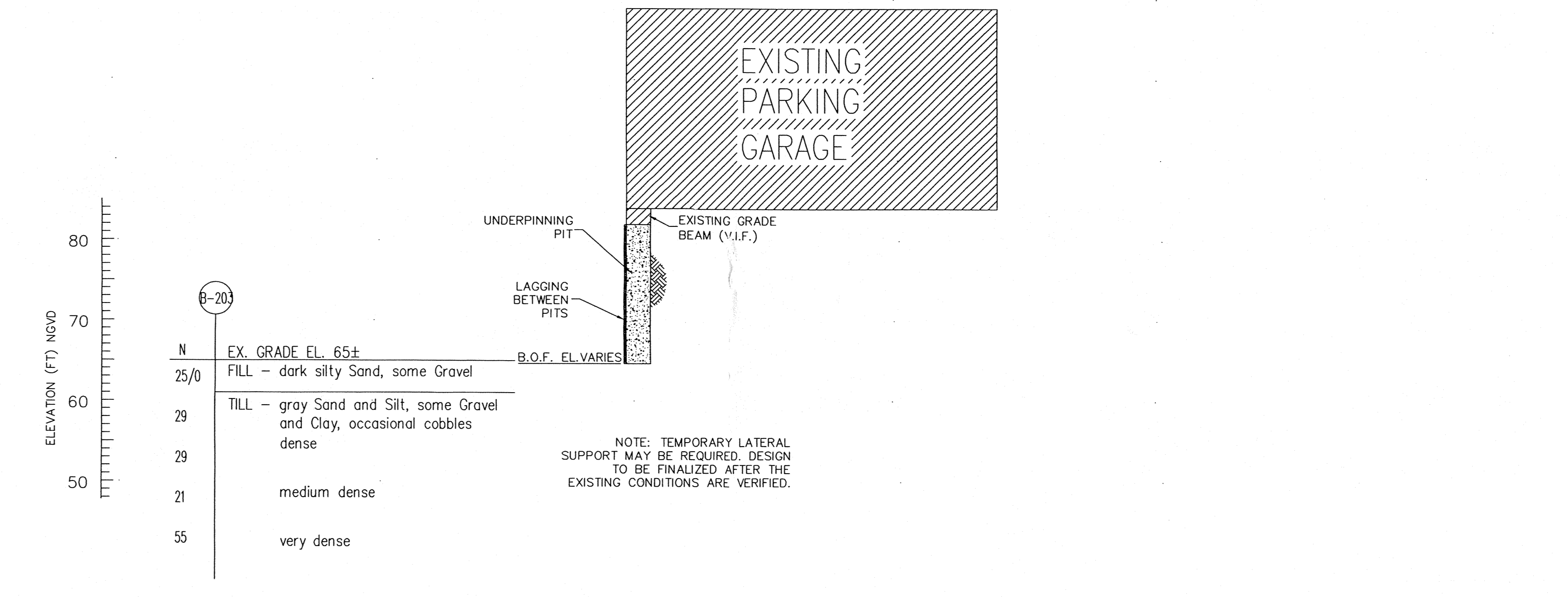
SECTION 1



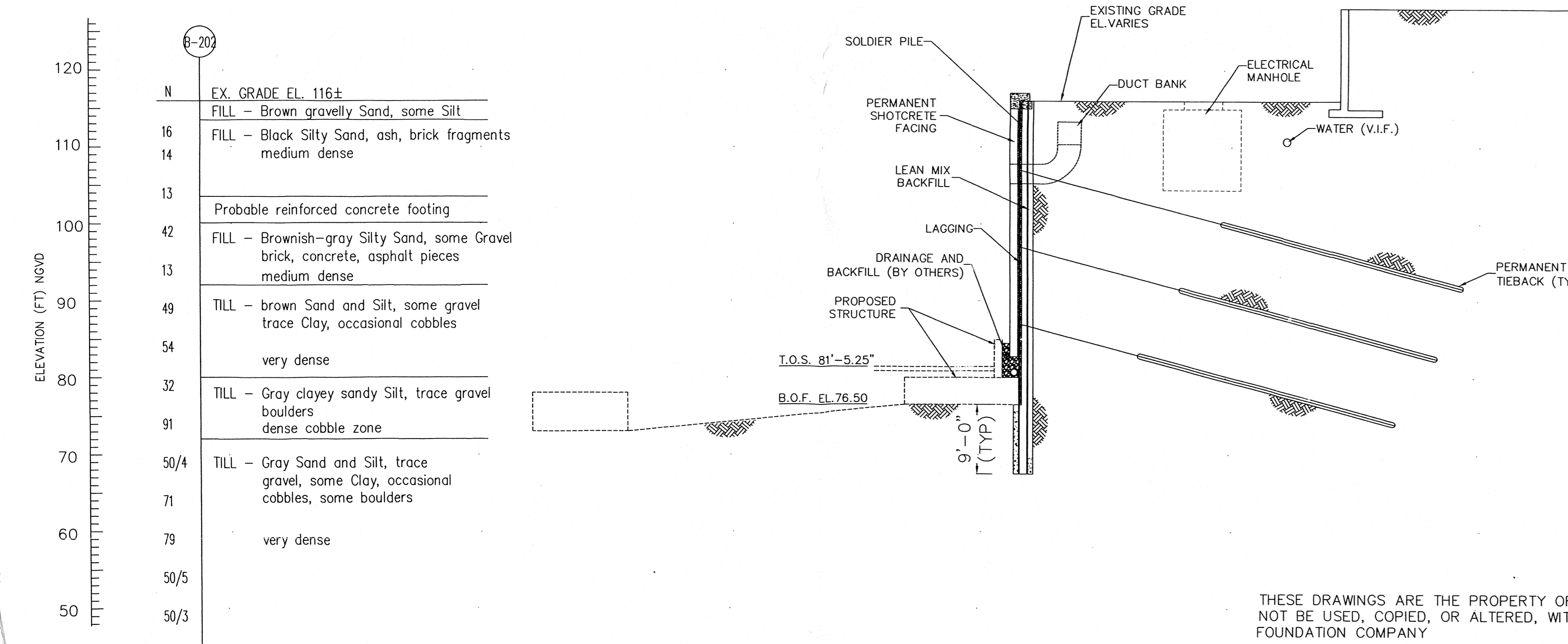
SECTION 2



SECTION 3



SECTION 4



SECTION 1A

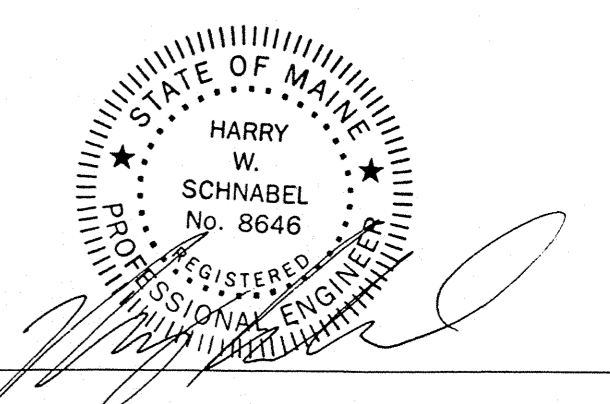
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REVISIONS

NO	DATE	DESCRIPTION
1	03/01/05	ENGINEER'S PEER REVIEW COMMENTS
2	05/05/05	ENGINEER'S FINAL PEER REVIEW
3	07/25/05	REVISED SHORING LOCATION

EXCAVATION SUPPORT SECTIONS	
MAINE MEDICAL CENTER PARKING GARAGE	
Portland, Maine	
Date: 12/10/04	Job Number: 06-3634
Scale: 3/32"=1'-0"	Drawing No: SFC-4

**Schnabel** Engineers and Contractors  
 200 Turnpike Road  
 Southborough, Massachusetts  
 Atlanta • Boston • Denver • Chicago  
 Houston • Los Angeles • Philadelphia  
 Foundation Company



Harry W. Schnabel, P.E.  
 Maine P.E. No. 8646