Maine Testing Laboratory

HOLLIS, MAINE 04042
TEL. 929-6605

BRANCH OFFICE: P. O. BOX 1767 – PORTLAND, MAINE 04104 – TEL. 774-6606 – AREA CODE 207

DESIGN – TESTING – INSPECTION
FOR THE CONSTRUCTION INDUSTRY INTERNATIONAL SERVICE

CONCRETE STRENGTH REPORT

CLIENT Edwards Construction Co., 1230 Congress Street, Portland, Maine

PROJECT Rosada Inn, Portland, Maine

TYPE OF CONCRETE 3/4" Max 3000 PSI

LOCATION OF POUR Lines N to U, 6th tier floor

SPECIMEN IDENTIFICATION 7A

DATE CAST 11-30-73

DATE REC'D. 12-4-73

DATE TESTED 12-7-73

AGE IN DAYS 7

AREA IN SQ. INCHES 28.3

SLUMP IN INCHES

PER CENT AIR

TOTAL CRUSHING LOAD 59,000

COMPRESSIVE STRENGTH-PSI 2087.0

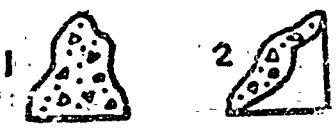
TYPE OF FRACTURE 1

REMARKS:

cc: Dept. Bldg. Insp. 1
Edwards 3

TECHNICIAN:

TYPICAL FRACTURES 1 2 3



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DESIGN - TESTING - INSPECTION
FOR THE CONSTRUCTION INDUSTRY - INTERNATIONAL SERVICE

CONCRETE STRENGTH REPORT

CLIENT Edwards Construction Co., 1910 Congress Street, Portland, Maine

PROJECT Leeds Ind., Portland, Maine

TYPE OF CONCRETE 3/6" Lex ACC 4000 PSI Cook Concrete Co, Portland, Maine

LOCATION OF POUR Floor slab lines H to K 4th tier

SPECIMEN IDENTIFICATION 4A

DATE CAST 11-14-73

DATE REC'D. 11-17-73

DATE TESTED 11-19-73

AGE IN DAYS 7

AREA IN SQ. INCHES 28.3

SLUMP IN INCHES

PER CENT AIR

TOTAL CRUSHING LOAD 55,000 lbs

COMPRESSIVE STRENGTH-PSI 1875.0

TYPE OF FRACTURE 1

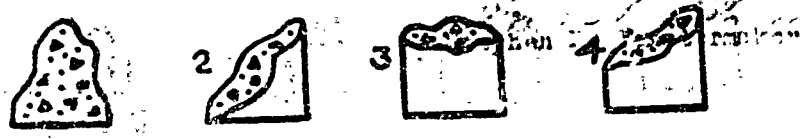
REMARKS:

cc: Edwards Construction 3
Dept. Bldg. Inspection 1

RECEIVED
NOV 27 1973
DEPT. OF BLDG. INSP.
CITY OF PORTLAND

TECHNICIAN:

TYPICAL FRACTURES



Maine Testing Laboratory

HOLLIS, MAINE 04042
TEL. 929-6605

BRANCH OFFICE: P O. BOX 1767 – PORTLAND, MAINE 04104 – TEL. 774-6606 – AREA CODE 207

DESIGN - TESTING - INSPECTION
FOR THE CONSTRUCTION INDUSTRY - INTERNATIONAL SERVICE

CONCRETE STRENGTH REPORT

CLIENT Edwards Construction Co., 1230 Congress Street, Portland, Maine

PROJECT Rerade Inn, Portland, Maine

TYPE OF CONCRETE 7 Bag 3/8" AGG 3000 PSI

LOCATION OF POUR Floor slab lines N to U 4th floor

SPECIMEN IDENTIFICATION	2B	2C
DATE CAST	11-8-73	11-8-73
DATE REC'D.	11-9-73	11-9-73
DATE TESTED	12-6-73	12-6-73
AGE IN DAYS	28	28
AREA IN SQ. INCHES	28.3	28.3
SLUMP IN INCHES	4.50	4.50
PER CENT AIR		
TOTAL CRUSHING LOAD	89,000	60,000
COMPRESSIVE STRENGTH-PSI	3146.0	4183.0
TYPE OF FRACTURE	1	1

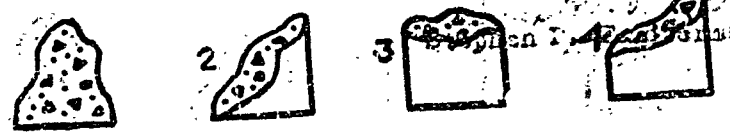
REMARKS: Sampled from truck # 41 at 8:45 A.M.

cc: Edwards Construction 3
Dept. Bldg. Insp. 1

TECHNICIAN: Stephen T. [illegible]

RECEIVED
DEC 11 1973
DEPT. OF BUILDING INSPECTION

TYPICAL FRACTURES



Maine Testing Laboratory

HOLLIS, MAINE 04042
TEL. 929-6605

BRANCH OFFICE: P. O. BOX 1767 – PORTLAND, MAINE 04104 – TEL. 774-6606 – AREA CODE 207

DESIGN - TESTING - INSPECTION
FOR THE CONSTRUCTION INDUSTRY - INTERNATIONAL SERVICE

CONCRETE STRENGTH REPORT

CLIENT Edwards Construction Co., Inc., 1270 Congress Street, Portland, Maine

PROJECT [illegible], Ft. Kent, Maine

TYPE OF CONCRETE [illegible] 3/8" AGG 4000 PSI 6000

LOCATION OF POUR Floor slab [illegible] to V 4th floor Wall or line [illegible]

SPECIMEN IDENTIFICATION	2A	3A
DATE CAST	11-8-73	11-8-73
DATE REC'D.	11-9-73	11-9-73
DATE TESTED	11-15-73	11-15-73
AGE IN DAYS	7	7
AREA IN SQ. INCHES	28.3	28.3
SLUMP IN INCHES	4.50	6.00
PER CENT AIR		
TOTAL CRUSHING LOAD	45,000	55,000
COMPRESSIVE STRENGTH-PSI	1590.0	1945.0
TYPE OF FRACTURE	1	1

REMARKS Sampled from truck # 41 at 8:45 A.M.

cc: Edwards Construction 3
Dept. Bldg. Inspection 1

TECHNICIAN: [illegible]

TYPICAL FRACTURES 1  2  3  4 

Maine Testing Laboratory

HOLLIS, MAINE 04042
TEL. 929-6605

BRANCH OFFICE: P. O. BOX 1767 – PORTLAND, MAINE 04104 – TEL. 774-6606 – AREA CODE 207

DESIGN – TESTING – INSPECTION
FOR THE CONSTRUCTION INDUSTRY – INTERNATIONAL SERVICE

CONCRETE STRENGTH REPORT

CLIENT: Edwards Construction Co., 1230 Congress Street, Portland, Maine

PROJECT: Ramada Inn, Portland, Maine

TYPE OF CONCRETE: 3/4" max. agg. 3000 lbs. Cook Concrete Co., Portland, Maine

LOCATION OF POUR: Lines 11 to A floor slab 5th tier

SPECIMEN IDENTIFICATION: 6A

DATE CAST: 11-26-73

DATE REC'D.: 11-30-73

DATE TESTED: 12-3-73

AGE IN DAYS: 7

AREA IN SQ. INCHES: 28.3

SLUMP IN INCHES:

PER CENT AIR:

TOTAL CRUSHING LOAD: 65,000

COMPRESSIVE STRENGTH-PSI: 2299.0

TYPE OF FRACTURE: 1

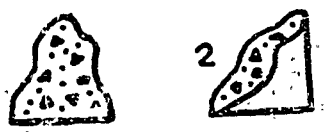
REMARKS:

cc: Edwards Constr. 3
Dept. Bldg. Insp. 1

RECEIVED
DEC 6 1973
DEPT. OF BLDG. INSP.
CITY OF PORTLAND

TECHNICIAN: Stephen P. Fattemaker

TYPICAL FRACTURES



TEL. 929-6605
EVE 929-3903

Maine Testing Laboratory

HOLLIS, MAINE 04042

DESIGN - TESTING - INSPECTION

FOR THE CONSTRUCTION INDUSTRY - INTERNATIONAL SERVICE

JACKSON D. FENSTERMAKER
AND ASSOCIATES

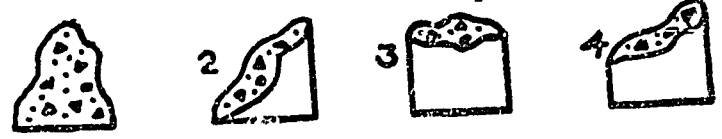
CONCRETE STRENGTH REPORT

CLIENT	Edwards Construction Co. Inc., 1230 Congress Street, Portland, Maine
PROJECT	Ramada Inn, Portland, Maine
TYPE OF CONCRETE	3/4" AGG 3000 PSI Cook [illegible]crete Co., Portland, Maine
LOCATION OF POUR	Pile caps lines 6, 7X, [illegible], E to Q
SPECIMEN IDENTIFICATION	1A
DATE CAST	6-26-73
DATE REC'D.	6-27-73
DATE TESTED	7-3-73
AGE IN DAYS	7
AREA IN SQ. INCHES	28.3
SLUMP IN INCHES	5.00
PER CENT AIR	
TOTAL CRUSHING LOAD	78,000
COMPRESSIVE STRENGTH-PSI	2759.0
TYPE OF FRACTURE	1
REMARKS:	Sampled from truck # 46 at 11:30 AM

cc: 4

TESTED BY Stephen P. Fenster

TYPICAL FRACTURES



From the desk of —
A. Allan Soule

1/2/73

Rear
1194-1230 Compress
St.

File

R. 1196-1224 Congress Street

Jan. 2, 1973

Joseph F. Dugas
Main Street
Merrimac, Mass.

cc to: Merrimack-Portland Trust
2 Prospect Hill
Merrimac, Mass.

Dear Mr. Dugas:

Your application to construct a 6-story motor lodge at the above location as you probably know has been sustained by the Board of Appeals as per my conversation with Mr. Dugas I understand that you would like to have your building permit as soon as possible, therefore, if you will submit to us complete plans of the Motor Lodge as it will be and a plot plan showing parking etc., we will check this against the requirements of the Building Code and ask for approval from the other departments that are necessary before a permit is issued.

If we can be of any further help please do not hesitate to call this office.

Very truly yours,

A. Allan Soule
Assistant Director

AAS:m

Rear
11-2-1330 Congress ... Allen

Main Lodge - Motel

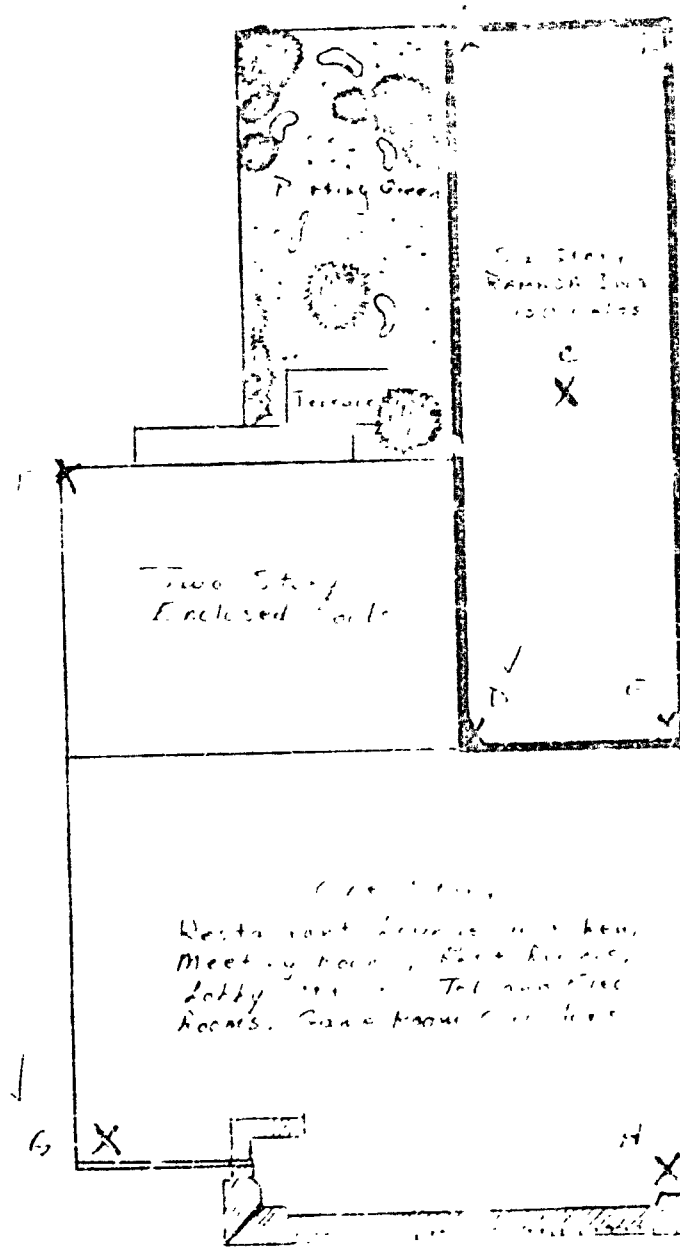
B-2

CHECK LIST AGAINST ZONING ORDINANCE

- Date - 11-2-30
- Zone Location - B-2
- Interior or ~~corner lot~~ -
- 40 ft. setback area (Section 21) - No
- Use - Motel
- Sewage Disposal -
- Rear Yards -
- Side Yards -
- Front Yards -
- Projections -
- → Height - 6 Stories - Approved sustained 12/24/30.
- ~~Lot Area~~ -
- ~~Building Area~~ -
- ~~Area per Family~~ -
- ~~Width of Lot~~ -
- Lot Frontage
- Off-street Parking - Cond will show over 120 parking spaces
- Loading bays -

Frank Brown
for
Bonnie Tosten

RAMADA


Two Story
Enclosed
Meeting
Lobby
Rooms.

TRI-STATE BORING AND EXPLORATION

TOPSHAM, MAINE

FOUNDATION TESTING and SOIL SAMPLING RECORD

PROJECT NAME: Ramada Inn, Tibbytown PROJECT No. 73-12 LOCATION: Portland, Me.

BORING No. C-3 SURFACE ELEVATION ____ RIG No. ____ DATE: From March 5 To Mar 5, 73 19__

BORING LOCATION a... r plan

BORING LOG DEPTH FROM—TO	DESCRIPTION OF MATERIAL Based On Samples Recovered Plus Observation Of Material Returned Between Samples	SAMPLE NUMBER	SPOON SAMPLE AND CORE DATA DEPTH FROM—TO	BLOWS PER 6" ON SAMPLES	ROCK CORE RECOVERED	D=DRY U=UNDISTURBED TYPA W=WASH R=ROD C=COR CORE RECOVD —— NO. PCS. REMARKS *
0'-0" to -0"	Frost	1	5'-0" 7'-0"	5-3-6		
2'-0" to 10'-0"	Wet brown & gray silty clay	2	10'-0" 11'-6"	2-2-3		
10'-0" to 22'06"	Wet soft gray clay	3	15'-0" 16'-6"	1-1-1		
22'-0" to 29'-10"	Wet gray sand	4	20'-0" 21'-5"	W.2.h		
29'-10"	Refusal	5	25'-0" 26'-7"	5-7-15		

BLOWS ON CASING

0-1	1	51-52
1-2		
2-3	33	54
3-4	21	54-55
4-5	15	55-56
5-6	5	6-57
6-7	6	7-58
7-8	6	58-59
8-9	7	59-60
9-10	8	60-61
10-11	4	61-62
11-12	2	62-63
12-13	2	63-64
13-14	4	64-65
14-15	5	65-66
15-16	4	66-67
16-17	6	67-68
17-18	5	68-69
18-19	6	69-70
19-20	8	70-71
20-21	2	71-72
21-22	2	72-73
22-23	3	73-74
23-24	4	74-75
24-25	5	75-76
25-26		76-77
26-27		77-78
27-28		78-79
28-29		79-80
29-30		80-81
30-31		81-82
31-32		82-83
32-33		83-84
33-34		84-85
34-35		85-86
35-36		86-87
36-37		87-88
37-38		88-89
38-39		89-90
39-40		90-91
40-41		91-92
41-42		92-93
42-43		93-94
43-44		94-95
44-45		95-96
45-46		96-97
46-47		97-98
47-48		98-99
48-49		99-100
49-50		100-101
50-51		101-102

GROUND WATER

DEPTH	HOUR	DATE

PIPE AND CASING LEFT IN HOLE

SIZE	AMOUNT	REASON

Distance Hammer Drop 30 Inch
Drive Hammer 300 Lbs.
Spoon Hammer 140 Lbs.
Casing Size 2 Inch
Spoon Size 2 Inch
Size of Core Bit ____ Inch

Sawyers

Crew Chief ____

TRI-STATE BORING AND EXPLORATION

TOPSHAM, MAINE

FOUNDATION TESTING and SOIL SAMPLING RECORD

PROJECT NAME: Ramada Inn, Libbytown PROJECT No. 73-11 PROJECT LOCATION: Portland, Maine

BORING No. B 4 SURFACE ELEVATION _____ RIG No. ____ DATE: From March 5 To March 5, 1973

BORING LOCATION as per plan Hole #3

BORING LOG		SPOON SAMPLE AND CORE DATA					
DEPTH FROM–TO	DESCRIPTION OF MATERIAL Based On Samples Recovered Plus Observation Of Water at Returned between Samples	SAMPLE NUMBER	DEPTH FROM–TO	BLOWS PER 6" ON SAMPLES	ROCK CORE RECOV'D	D=DRY U=UNDISTURBED T-TPAP W=WASH R=ROD C=CORE CORE RECOV'D ——— NO. PCS. REMARKS *	
0'-0" to 2'-0"	Sand, medium brown clay	1	5'-0" 7'-0"	7-9 11-9		Hollow stem auger boring	
2'-0" to 8'-0"	Brown stiff clay	2	10'-0" 12'-0"	4-3 3-2		Refusal hit with auger	
8'-0" to 13'-0"	Soft wet brown clay	3	15'-0" 17'-0"	1-1 1-1			
13'-0" to 35'-0"	Soft wet gray clay	4	20'-0" 22'-0"	1-0 1-1			
		5	25'-0" 27'-0"	1-1 1-2			
	Refusal 35'-0"	6	30'-0" 32'-0"	1-1 1-1			

BLOWS ON CASING			
0–1	51-52	102-103	
1–2	52-53	103-104	
2–3	53-54	104-105	
3–4	54-55	105-106	
4–5	55-56	106-107	
5–6	56-57	107-108	
6–7	57-58	108-109	
7–8	58-59	109-110	
8–9	59-60	110-111	
9-10	60-61	111-112	
10-11	61-62	112-113	
11-12	62-63	113-114	
12-13	63-64	114-115	
13-14	64-65	115-116	
14-15	65-66	116-117	
15-16	66-67	117-118	
16-17	67-68	118-119	
17-18	68-69	119-120	
18-19	69-70	120-121	
19-20	70-71	121-122	
20-21	71-72	122-123	
21-22	72-73	123-124	
22-23	73-74	124-125	
23-24	74-75	125-126	
24-25	75-76	126-127	
25-26	76-77	127-128	
26-27	77-78	128-129	
27-28	78-79	129-130	
28-29	79-80	130-131	
29-30	80-81	131-132	
30-31	81-82	132-133	
31-32	82-83	133-134	
32-33	83-84	134-135	
33-34	84-85	135-136	
34-35	85-86	136-137	
35-36	86-87	137-138	
36-37	87-88	138-139	
37-38	88-89	139-140	
38-39	89-90	140-141	
39-40	90-91	141-142	
40-41	91-92	142-143	
41-42	92-93	143-144	
42-43	93-94	144-145	
43-44	94-95	145-146	
44-45	95-96	146-147	
45-46	96-97	147-148	
46-47	97-98	148-149	
47-48	98-99	149-150	
48-49	99-100	150-151	
49-50	100-101	151-152	
50-51	101-102	152-153	

GROUND WATER		
DEPTH	HOUR	DATE

PIPE AND CASING LEFT IN HOLE		
SIZE	AMOUNT	REASON

Distance Hammer Drop 30 Inch
Drive Hammer ____ Lbs.
Spoon Hammer 140 Lbs.
Casing Size ____ Inch
Spoon Size ____ Inch
Size of Core Bit ____ Inch

Crew Chief J. Myers

TRI-STATE BORING AND EXPLORATION

TOPSHAM, MAINE

FOUNDATION TESTING and SOIL SAMPLING RECORD

PROJECT NAME: Rama da Inn, Lab y town PROJECT No. 73-11 PROJECT LOCATION: Portland, Maine

BORING No. 3 2 SURFACE ELEVATION ____ RIG No. ____ DATE: From March 5 To Mar 5, 1973 19__

BORING LOCATION e. per plan hole "D

BORING LOG		SPOON SAMPLE AND CORE DATA					
DEPTH FROM—TO	DESCRIPTION OF MATERIAL Based On Samples Recovered Plus Observation Of Material Returned Between Samples	SAMPLE NUMBER	DEPTH FROM—TO	BLOWS PER 6" ON SAMPLES	ROCK CORE RECOV'D	D=DRY U=UNDISTURBED T=TRAP W=WASH R=ROD C=CORE CORE RECOV'D — NO. PCS. REMARKS *	
0'-0" to 7'-0"	Stiff brown wet clay	1	5'-0" 7'-0"	8-11 10-11		Hollow stem auger boring	
7'-0" to 14'-0"	Soft brown wet clay	2	10'-0" 12'-0"	3-5 6-6		Probed with 300 lb. hammer, A-rod and probe point from 32'-0" to 32'-6".	
14'-0" to 23'-0"	Soft wet gray clay	3	15'-0" 17'-0"	1-1 2-2		Blow count per 6", 9	
23'-0" to 31'-0"	Small gray rock traces of gray clay	4	20'-0" 22'-0"	2-1 3			
		5	25'-0" 27'-0"	14-9 9-5			
31'-0" to 32'-6"	Hard packed fine gray sand and rock	6	30'-0" 32'-0"	2-3 5-15			
32'-6"	Refusal						

BLOWS ON CASING		
0-1	51-52	G
1-2	52-53	
2-3	53-54	
3-4	54-55	
4-5	55-56	
5-6	56-57	
6-7	57-58	
7-8	58-59	
8-9	59-60	
9-10	60-61	
10-11	61-62	
11-12	62-63	
12-13	63-64	
13-14	64-65	
14-15	65-66	
15-16	66-67	
16-17	67-68	
17-18	68-69	
18-19	69-70	
19-20	70-71	
20-21	71-72	
21-22	72-73	
22-23	73-74	
23-24	74-75	
24-25	75-76	
25-26	76-77	
26-27	77-78	
27-28	78-79	
28-29	79-80	
29-30	80-81	
30-31	81-82	
31-32	82-83	
32-33	83-84	
33-34	84-85	
34-35	85-86	
35-36	86-87	
36-37	87-88	
37-38	88-89	
38-39	89-90	
39-40	90-91	
40-41	91-92	
41-42	92-93	
42-43	93-94	
43-44	94-95	
44-45	95-96	
45-46	96-97	
46-47	97-98	
47-48	98-99	
48-49	99-100	
49-50	100-101	
50-51	101-102	

GROUND WATER		
DEPTH	HOUR	DATE

PIPE AND CASING LEFT IN HOLE		
SIZE	AMOUNT	REASON

Distance Hammer Drop 30 Inch
Drive Hammer ____ Lbs.
Spoon Hammer 140 Lbs.
Casing Size ____ Inch
Spoon Size ____ Inch
Size of Core Bit ____ Inch

Crew Chief J. Myers

TRI-STATE BORING AND EXPLORATION

TOPSHAM, MAINE

FOUNDATION TESTING and SOIL SAMPLING RECORD

PROJECT NAME: Ramada Inn, Libbytown PROJECT No. 73-11 PROJECT LOCATION: Portland, Maine

BORING No. B-1 SURFACE ELEVATION ____ RIG No. ____ DATE: From Mar 5 To March 6, 1973

BORING LOCATION as per plan

BORING LOG		SPOON SAMPLE AND CORE DATA					BLOWS ON CASING
DEPTH FROM—TO	DESCRIPTION OF MATERIAL Based On Samples Recovered Plus Observation Of Material Returned Between Samples	SAMPLE NUMBER	DEPTH FROM—TO	BLOWS PER ON SAMPLES	ROCK CORE RECOV'D	D=DRY U=UNDISTURBED T=TRAP W=WASH R=ROD C=CORE CORE RECOV'D — NO. PCS. REMARKS *	0—1 50 51—52 1—2 1 52—53 2—3 21 53—54 3—4 23 54—55 4—5 24 55—56 5—6 8 56—57 6—7 10 57—58 7—8 11 58—59 8—9 12 59—60 9—10 10 60—61 10—11 8 61—62 11—12 9 62—63 12—13 5 63—64 13—14 6 64—65 14—15 7 65—66 15—16 6 66—67 16—17 5 67—68 17—18 4 68—69 18—19 6 69—70 19—20 6 70—71 20—21 9 71—72 21—22 9 72—73 22—23 12 73—74 23—24 13 74—75 24—25 29 75—76 25—26 76—77 26—27 77—78 27—28 78—79 28—29 79—80 29—30 80—81 30—31 81—82 31—32 82—83 32—33 83—84 33—34 84—85 34—35 85—86 35—36 86—87 36—37 87—88 37—38 88—89 38—39 89—90 39—40 90—91 40—41 91—92 41—42 92—93 42—43 93—94 43—44 94—95 44—45 95—96 45—46 96—97 46—47 97—98 47—48 98—99 48—49 99—100 49—50 100—101 50—51 101—102
0'-0" to 2'-0"	Frost	1	5'-0" / 6'-0"	5-6 / 5			
2'-0" to 10'-0"	Soft wet gray clay	2	10'-0" / 11'-6"	w.o.h.		No recovery	
10'-0" to 22'-0"	Real soft gray clay, wet	3	15'-0" / 16'-6"	2-2 / 2			
~~22'~~ 22'-0" to 29'-8"	Wet gray sand, trace of gravel	4	20'-0" / 21'-6"	1-2 / 2			
29'-8"	Refusal	5	25'-0" / 26'-0"	4-5 / 10			

GROUND WATER		
DEPTH	HOUR	DATE
0'-0"		Mar 5

PIPE AND CASING LEFT IN HOLE		
SIZE	AMOUNT	REASON

Distance Hammer Drop 30 Inch
Drive Hammer 300 Lbs.
Spoon Hammer 140 Lbs.
Casing Size 2½ Inch
Spoon Size 2 Inch
Size of Core Bit ____ Inch

Crew Chief J. Libb

TRI-STATE BORING AND EXPLORATION

TOPSHAM, MAINE

FOUNDATION TESTING and SOIL SAMPLING RECORD

PROJECT NAME: Ramada Inn, Libbytown PROJECT No. 73-11 LOCATION: Portland, Maine

BORING No. F B-7 SURFACE ELEVATION RIG No. DATE: From Mar 6 To Mar 6, 1973 19

BORING LOCATION as per plan

BORING LOG DEPTH FROM–TO	DESCRIPTION OF MATERIAL Based On Samples Recovered Plus Observation Of Material Returned Between Samples	SPOON SAMPLE AND CORE DATA: SAMPLE NUMBER	DEPTH FROM–TO	BLOWS PER 6" ON SAMPLES	ROCK CORE RECOV'D
0'-0" to 14'-0"	Hard stiff clay, silt	1	5'-0" 6'-6"	7-5-7	
14'-0" to 17'-0"	Wet soft gray clay	2	10'-0" 11'-6"	1-3-3	
17'-0" to 19'-6"	Wet brown sand	3	15'-0" 16'-6"	1-2-2	
19'-6"	Refusal	4	20'-0" 21'-6"		
		5	25'-0"		

D=DRY U=UNDISTURBED T=TRAP W=WASH P=ROD C=CORE

CORE RECOV'D —— NO. PCS.

REMARKS *

BLOWS ON CASING

0 - 1	16	51-52
1 - 2	0	52-53
2 - 3	10	53-54
3 - 4	15	54-55
4 - 5	13	55-56
5 - 6	16	56-57
6 - 7	17	57-58
7 - 8	14	58-59
8 - 9	15	59-60
9 - 10	17	60-61
10 - 11	13	61-62
11 - 12	15	62-63
12 - 13	14	63-64
13 - 14	17	64-65
14 - 15	15	65-66
15 - 16	13	66-67
16 - 17	19	67-68
17 - 18	23	68-69
18 - 19	32	69-70
19 - 20	50	70-71
20 - 21		71-72
21 - 22		72-73
22 - 23		73-74
23 - 24		74-75
24 - 25		75-76
25 - 26		76-77
26 - 27		77-78
27 - 28		78-79
28 - 29		79-80
29 - 30		80-81
30 - 31		81-82
31 - 32		82-83
32 - 33		83-84
33 - 34		84-85
34 - 35		85-86
35 - 36		86-87
36 - 37		87-88
37 - 38		88-89
38 - 39		89-90
39 - 40		90-91
40 - 41		91-92
41 - 42		92-93
42 - 43		93-94
43 - 44		94-95
44 - 45		95-96
45 - 46		96-97
46 - 47		97-98
47 - 48		98-99
48 - 49		99-100
49 - 50		100-101
50 - 51		101-102

GROUND WATER

DEPTH	HOUR	DATE

PIPE AND CASING LEFT IN HOLE

SIZE	AMOUNT	REASON

Distance Hammer Drop 30 Inch
Drive Hammer 300 Lbs.
Spoon Hammer 140 Lbs.
Casing Size 2½ Inch
Spoon Size 2 Inch
Size of Core Bit Inch

Crew Chief J. Myers

TRI-STATE BORING AND EXPLORATION

TOPSHAM, MAINE

FOUNDATION TESTING and SOIL SAMPLING RECORD

PROJECT NAME: Ramada Inn, Livingtown — PROJECT No. 73-11 — PROJECT LOCATION: Portland, Maine

BORING No. B 6 — SURFACE ELEVATION — RIG No. — DATE: From March 6 To March 6, 1973

BORING LOCATION as per plan Hole #6

BORING LOG		SPOON SAMPLE AND CORE DATA					
DEPTH FROM–TO	DESCRIPTION OF MATERIAL Based On Samples Recovered Plus Observation Of Material Returned Between Samples	SAMPLE NUMBER	DEPTH FROM–TO	BLOWS PER 6" ON SAMPLES	ROCK CORE RECOV'D	D=DRY U=UNDISTURBED T=TRAP W=WASH R=ROD C=CORE CORE RECOV'D — NO. PCS. REMARKS *
0'-0" to 18'-0"	Brown sand, silt and clay	1	5'-0" 7'-0"	6-7 7-9		Hollow stem auger boring
18'-0"	Bricks, rocks, wood, gravel	2	10'-0" 12'-0"	2-4 12-10		
18'-0" to 23'-0"	Packed dark gray sand and gravel	3	15'-0" 17'-0"	3-5 3-7		Probed with AW rod Probe point on 300 lb hammer from 22'-0" to 23'-0".
23'-0"		4	20'-0" 22'-0"	2-2 5-17		Blow count per ft.-17
	Refusal 23'-0"					

BLOWS ON CASING	
0 – 1	51 – 52
1 – 2	52 – 53
2 – 3	53 – 54
3 – 4	54 – 55
4 – 5	55 – 56
5 – 6	56 – 57
6 – 7	57 – 58
7 – 8	58 – 59
8 – 9	59 – 60
9 – 10	60 – 61
10 – 11	61 – 62
11 – 12	62 – 63
12 – 13	63 – 64
13 – 14	64 – 65
14 – 15	65 – 66
15 – 16	66 – 67
16 – 17	67 – 68
17 – 18	68 – 69
18 – 19	69 – 70
19 – 20	70 – 71
20 – 21	71 – 72
21 – 22	72 – 73
22 – 23	73 – 74
23 – 24	74 – 75
24 – 25	75 – 76
25 – 26	76 – 77
26 – 27	77 – 78
27 – 28	78 – 79
28 – 29	79 – 80
29 – 30	80 – 81
30 – 31	81 – 82
31 – 32	82 – 83
32 – 33	83 – 84
33 – 34	84 – 85
34 – 35	85 – 86
35 – 36	86 – 87
36 – 37	87 – 88
37 – 38	88 – 89
38 – 39	89 – 90
39 – 40	90 – 91
40 – 41	91 – 92
41 – 42	92 – 93
42 – 43	93 – 94
43 – 44	94 – 95
44 – 45	95 – 96
45 – 46	96 – 97
46 – 47	97 – 98
47 – 48	98 – 99
48 – 49	99 – 100
49 – 50	100 – 101
50 – 51	101 – 102

GROUND WATER		
DEPTH	HOUR	DATE

PIPE AND CASING LEFT IN HOLE		
SIZE	AMOUNT	REASON

Distance Hammer Drop 30 Inch
Drive Hammer Lbs.
Spoon Hammer 140 Lbs.
Casing Size Inch
Spoon Size Inch
Size of Core Bit Inch

Crew Chief J. Myers

TRI-STATE BORING AND EXPLORATION

TOPSHAM, MAINE

FOUNDATION TESTING and SOIL SAMPLING RECORD

PROJECT NAME: Ramada Inn, Tiburtown — PROJECT No. 73-11 — PROJECT LOCATION: Portland, Maine

BORING No. B-5 — SURFACE ELEVATION — RIG No. — DATE: From March 5 To March 5, 1973 19

BORING LOCATION

BORING LOG DEPTH FROM-TO	DESCRIPTION OF MATERIAL Based On Samples Recovered Plus Observation Of Material Returned Between Samples	SAMPLE NUMBER	SPOON SAMPLE AND CORE DATA DEPTH FROM-TO	BLOWS PER 6" ON SAMPLES	ROCK CORE RECOV'D	D=DRY U=UNDISTURBED T=TRAP W=WASH R=ROD C=CORE CORE RECOV'D — NO. PCS. REMARKS *
0'-0" to 11'-0"	Wet brown silt, sand clay, man made fill	1	5'-0" to 6'-6"	6-9-2		
11'-0" to 13'-0"	Hard stiff clay	2	10'-0" to 11'-6"	4-5-7		
15'-0" to 19'-0"	Wet, gray clay	3	15'-0" to 17'-0"			3" Shelby tube, 2 ft. push
19'-0"	Refusal	4	20'-0" to 21'-0"			

BLOWS ON CASING

0-1	6
1-2	61
2-3	74
3-4	24
4-5	20
5-6	17
6-7	26
7-8	30
8-9	35
9-10	24
10-11	61-62
11-12	62-63
12-13	63-64
13-14	64-65
14-15	65-66
15-16	66-67
16-17	67-68
17-18	68
18-19	69-70
19-20	70-71
20-21	71-72
21-22	72-73
22-23	73-74
23-24	74-75
24-25	75-76
25-26	76-77
26-27	77-78
27-28	78-79
28-29	79-80
29-30	80-81
30-31	81-82
31-32	82-83
32-33	83-84
33-34	84-85
34-35	85-86
35-36	86-87
36-37	87-88
37-38	88-89
38-39	89-90
39-40	90-91
40-41	91-92
41-42	92-93
42-43	93-94
43-44	94-95
44-45	95-96
45-46	96-97
46-47	97-98
47-48	98-99
48-49	99-100
49-50	100-101
50-51	101-102

GROUND WATER

DEPTH	HOUR	DATE

PIPE AND CASING LEFT IN HOLE

SIZE	AMOUNT	REASON

Distance Hammer Drop 30 Inch
Drive Hammer 300 Lbs.
Spoon Hammer 140 Lbs.
Casing Size 2½ Inch
Spoon Size 2 Inch
Size of Core Bit — Inch

Crew Chief J. Myers

TRI-STATE BORING AND EXPLORATION

TOPSHAM, MAINE

FOUNDATION TESTING and SOIL SAMPLING RECORD

PROJECT NAME: RamadaInn, Lrnbytown — PROJECT No. 73-11 — PROJECT LOCATION: Portl nd, Maine

BORING No. B 8 — SURFACE ELEVATION ____ — RIG No. ____ — DATE: From March 6 To March 6, 1973

BORING LOCATION as per plan Hole #A

BORING LOG		SPOON SAMPLE AND CORE DATA				
DEPTH FROM—TO	DESCRIPTION OF MATERIAL Based On Samples Recovered Plus Observation Of Material Returned Between Samples	SAMPLE NUMBER	DEPTH FROM—TO	BLOWS PER 6" ON SAMPLES	ROCK CORE RECOV'D	D=DRY U=UNDISTURBED T-TRAP W=WASH R=ROD C=CORE CORE RECOVD —— NO. PCS. REM. RKS *
0'-0" to 11'-6"	Stiff bro n clay	1	5'-0" / 10'-0"	4-4 / 5-6		Hollow stem auger boring
11'-6" to 30'-0"	Wet soft gray clay	2	10'-0" / 12'-0"			3" Shelby tube 24" Recovery
30'-0" to 32'-6"	Packed grey fine sand and gravel	3	15'-0" / 17'-0"	1-1 / 2-2		
		4	20'-0" / 22'-0"	2-1 / 1-1		Probed from 32'-0" to 32'-6". Blow count per 6" on 300 lb hammer, 7
	Refusal 32'-6"	5	25'-0" / 27'-0"	1-1 / 2-1		
		6	30'-0" / 32'-0"	7-9 / 12-17		

BLOWS ON CASING	
0 — 1	51-52
1 — 2	52-53
2 — 3	53-54
3 — 4	54-55
4 — 5	55-56
5 — 6	56-57
6 — 7	57-58
7 — 8	58-59
8 — 9	59-60
9-10	60-61
10-11	61-62
11-12	62-63
12-13	63-64
13-14	64-65
14-15	65-66
15-16	66-67
16-17	67-68
17-18	68-69
18-19	69-70
19-20	70-71
20-21	71-72
21-22	72-73
22-23	73-74
23-24	74-75
24-25	75-76
25-26	76-77
26-27	77-78
27-28	78-79
28-29	79-80
29-30	80-81
30-31	81-82
31-32	82-83
32-33	83-84
33-34	84-85
34-35	85-86
35-36	86-87
36-37	87-88
37-38	88-89
38-39	89-90
39-40	90-91
40-41	91-92
41-42	92-93
42-43	93-94
43-44	94-95
44-45	95-96
45-46	96-97
46-47	97-98
47-48	98-99
48-49	99-100
49-50	100-101
50-51	101-102

GROUND WATER		
DEPTH	HOUR	DATE

PIPE AND CASING LEFT IN HOLE		
SIZE	AMOUNT	REASON

Distance Hammer Drop 30 Inch
Drive Hammer ____ Lbs.
Spoon Hammer 140 Lbs.
Casing Size ____ Inch
Spoon Size ____ Inch
Size of Core Bit ____ Inch

Crew Chief J. Myers

PH 617-623-8880 (ENGINEER)

NAME _____ SUBJECT _____

SOMERVILLE ENGINEERING INCORPORATED
ENGINEERS • SURVEYORS
400 Highland Ave. - Davis quare
Somerville, Massachusetts

JOB NO. _____ SHEET NO. 1
DATE 21 April 23
COMPUTED BY _____
CHECKED BY _____
SKETCHED BY _____

Structural Design 1 Story Portion

Loading

Snow	= 50 #
T & G	= 7
Metal Deck	= 3
Joist	= 2
Ceiling	= 3
Misc	= 5
Total	= 70 #

Design Deck For a total load of 60 #/sf

Use Canco steel Roof Deck Type A 22 gauge max spacing of joist = 5'-9"

Roof Joist	63'-4	54'-8

@ 5' = 350 #/l.f.

use 36LH10. good for 341

Roof Joist 54'-8"

use 36LH08

Roof Joist 48 use 28LH07

NAME _____

SUBJECT _____

SOMERVILLE ENGINEERING
INCORPORATED
ENGINEERS • SURVEYORS
400 Highland Ave. - Davis Square
Somerville, Massachusetts

JOB NO _____ SHEET NO. 3
DATE 22 April 19 73
COMPUTED BY _____
CHECKED BY _____
SKETCHED BY _____

Structural Design — 1 Story Portion

beam line C span 30'

$70\# \times \frac{43+63.3}{2} = 3900\#/l.f$

say 4 kips

$M = \frac{4 \times 30^2}{8} = 45.7$ kips.

$S = \frac{450 \times 12}{22} = 245$

$V = 4 \times 15 = 60$ Kips

use W 30 x 108

bearing plate.

$\frac{60,000}{8150} = 73.6$ sq. in

∴ need 9"

use bearing plate

8" x 16" x 1"

Roof Steel Area.

Line D $70 \times \frac{48}{2} = 1680$ say 1.7 k/ft

span 32'

$M = \frac{1.7 \times 32^2}{8} = 218$ Ft lbs

$S = 119$ use 21 WF 62

Line 2 & 3 beam DG span 39'.

$31 \times 70 = 2170$ say 2.2 k/ft.

$M = \frac{2.2 \times 31^2}{8} = 264$ Ft lbs

$S = 144$ use 24 WF 68

21 WF 82

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Somerville, Massachusetts

JOB NO. _____ SHEET NO. 3
DATE _____ 19____
COMPUTED BY _____
CHECKED BY _____
SKETCHED BY _____
SUBJECT _____

Line 2,3 beam GL
Span 50'

$M = \frac{2.2 \times 50^2}{8} = 684$

$S = 373$ use 33 WF 130

Line 4,5 $\frac{1}{2}$ load

beam DG $S = 72$ use 18 WF 50

beam GL $S = 186$ use 27 WF 84

Skylight beam.. (tie beam)

Span 32'

load = $70 \times 10 = 700$
say 1K/Ft

$M = \frac{1 \times 32^2}{8} = 128$

$S = 64$ use 18 WF 45

Purlins Spacing 10' max
- Span 32' max
load = 2/Ft

$M = \frac{.7 \times 32^2}{8} = 89.5$ $S = 49$

use 12 x 6 x $\frac{1}{4}$

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Somerville, Massachusetts

JOB NO. _____ SHEET NO. 9
DATE _____
COMPUTED BY _____
CHECKED BY _____
SKETCHED BY _____
SUBJECT _____

Column.

D2 & D3 1.7 x 3.1 = 5.3 K.

2.2 x 14 = 31 "

84 K

use 6 x 6 x 1/4 column.

Footing ✓

84 / 2 = 42 SF

use 7 x 7 x 16
w. 4 #5 e.w.

Column
C2 & C3

2.2 x 14 = 31
2.2 x 25 = 55
86

use same as above

Footing for Exterior walls
63 x 20 / 2 = 2200 lbs/Ft.
Assume solid 8" block @ 16" = 16 x 51 = 810
3000 #/Ft.
use 3' wide footing

with 4 cont. #4 & #4 @ 16" c.c.

SOMERVILLE ENGINEERING
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ENGINEERS
400 Highland Ave. Davis Square
Somerville, Massachusetts

SUBJECT

Steel Deck over Garage

Span 19' 3" design for 6" slab
use Type N Deep Rib Roof Deck
by Granco or equal

Various Beams

5' opening at roof level
Assume 6" at block

6" x 60 = 360 lbs/ft $M = \frac{360 \times 5^2}{8} = 1125$ ft lbs

$S = \frac{1125 \times 12}{22} = 6$

(L-1) use $3\frac{1}{2} \times 4 \times \frac{5}{16}$

(L-2) Span 25'

Roof load 70 x 12 = 1330
Assume 360
1690 lbs/ft

$M = \frac{1.7 \times 25^2}{8} = 133$ ft kips

$S = \frac{133 \times 12}{22} = 725$ use 16 WF 50

SOMERVILLE ENGINEERING INCORPORATED
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400 Highland Ave. - Davis Square
Somerville, Massachusetts

JOB NO. A73-11 SHEET NO. 1 of
DATE 19 August 19 73
COMPUTED BY Casavant
CHECKED BY
SKETCHED BY

SUBJECT

Structural Design & steel portion

Live load

Roof 50 #/sf
Hallway 60 #/sf
Rooms 40 #/sf

Use 6" concrete slab wt 75 #/sf

Floor Slab Loading (Superimposed)

Live Load = 40
Misc Dead Load = 10

Use one way slab design $F_c' = 3000$ psi
Span say 13' simple span.

Strength Design

Live Load 40 x 1.7 = 68
Dead 10 x 1.4 = 14

L = 40 D = 10 w = 82

From page 7-10 CRSI 6" slab.

w = 200 psf > 82 OK $F_c' = 3000$ psi
Grade 60
$\rho = 0.0025$

bottom bar = #5 @ 12" OC.
Top bar = #4 @ 12" OC
Temp bar = #4 @ 19" OC.

Roof slab similar

SUBJECT

SOMERVILLE ENGINEERING INCORPORATED
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400 Highland Ave. - Davis Square
Somerville, Massachusetts

JOB NO ____ SHEET NO 2
DATE ____ 19__
COMPUTED BY ____
CHECKED BY ____
SKETCHED BY ____

Load Foundation

Reduction of live load

$\frac{.08}{100} \times 13 \times 58 = .601$ reduction

Maximum is .60 use .60

reduction in live Load

∴ Load on Foundation

slab & Dk.-	85 × 7	=	595
L.L.-	40 × 6 × .6	=	149
Snow-	50 × 1	=	50

S.F load = 789

789 × 13' = 10300 #/L.F

Conc. Block 52' × 51 = 2660

12960 #/L.F

say 13000 #/L.F.

Allowable 85 psi hollow 175 psi solid

hollow 8" wall good for. 8 × 12 × 85 = 8150 #/L.F.

solid 8" wall good for 8 × 12 × 175 = 16900 #/L.F

Load on each floor-

Roof load 90 + 50 = 140 #/ft or 1820/L.F.

85 × 24 = 109 × 13 = 1420

block 8.5 × 51 = 435

1855

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Somerville, Massachusetts

JOB NO. _____ SHEET NO. 3
DATE _____ 19____
COMPUTED BY _____
CHECKED BY _____
SCALE _____

SUBJECT _____

6th Floor = 3675

5th 5530

4th 7385

3rd 9240

2nd 11095

1st 12950 check 12960

∴ 8" hollow masonry units may be used 3rd, 4th, 5th and 6th Floor walls.

1st & second must be sol. of masonry or reinforced and filled solid

↓ 1820 Roof

↓ 3675 6th

↓ 5530 5th

↓ 7385 4th

↓ 9240 3rd

↓ 11095 2nd

↓ 12950 1st.

12,950 × 58' = 750,000 # total load

use spacing of 19'-4" o.c.

12,950 × 19.33 / 2 = 125,000 #/pile (interior)

K = .5 Max L of Pile = 32

hence KL = .7 × 32 = 22.4

use HP 10×42
with a 10×10×½" cap

Pile Cap use 5'-0" × 2'-6"
depth = 20"
8 - #6 long way
4 - #5 short way

Compute 4' beam × 19.33

Max M = 0.100 w l² = 13^k × 19.33² × .1
= 495 ft kips

V = 0.6 × 13 × 19.33 = 151 K.

b = 16" d = 42" f_s = 24,000 / 9.2 / 1350

K = 204 F = 2.35

then KF = 480

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400 Highland Ave - Davis Square
Somerville Massachusetts

SUBJECT

SHEET 5

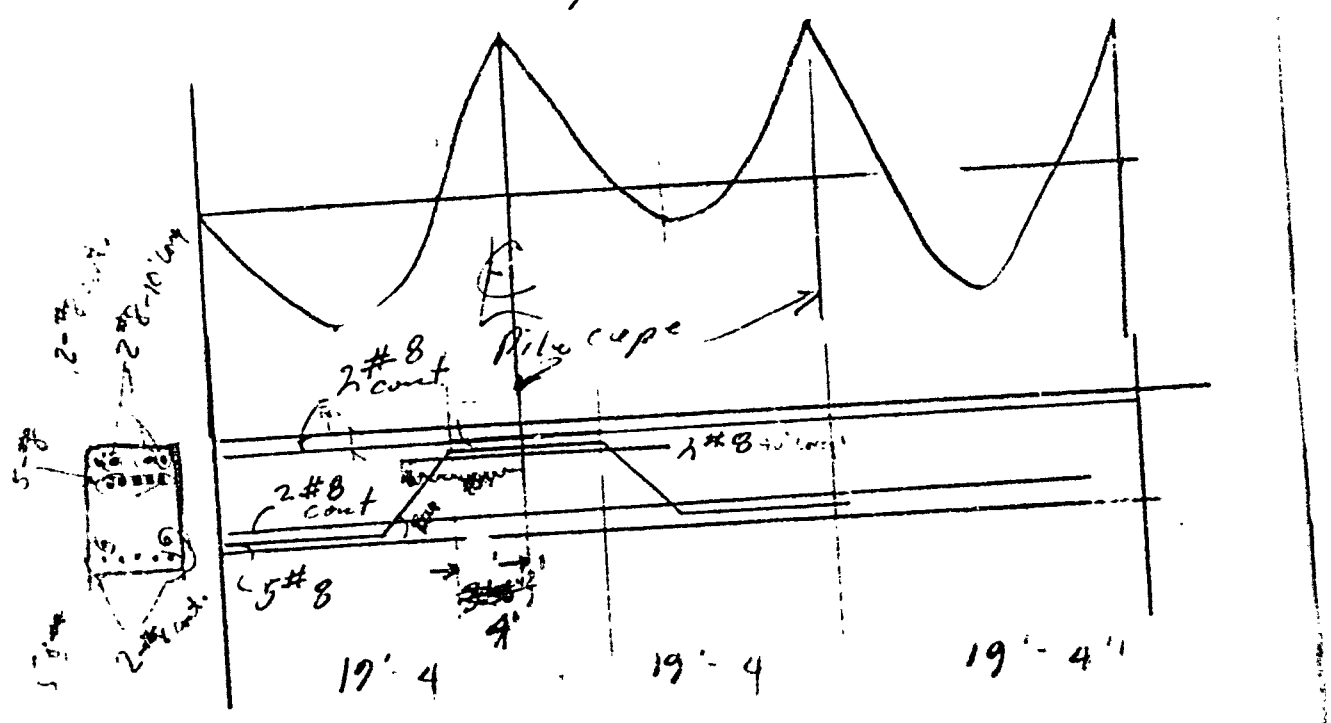
$M - KF = 485 - 430 = 55$

$C = 1.25$ (Table 7)

$A_s' = \frac{55}{1.25 \times 42} = .095$

$A_s \frac{485}{1.76 \times 42} = 6.55$ (x.8 = 5.25) ← Use 7

use q # 8
two rows



SUPPLEMENTARY GENERAL CONDITIONS

1. GENERAL CONDITIONS - These Supplementary General Conditions and the Specifications bound herewith shall be subject to all requirements of the "Standard Form of the General Conditions of the Contract," issued by the American Institute of Architects, except that these Supplementary General Conditions shall take precedence over and modify any pages or statements of the "General Conditions of the Contract" and shall be used in conjunction with them as a part of the General Contract Documents. A copy of these General Conditions of the Contract may be examined at the office of the Architect.

2. MATERIALS - Unless otherwise noted, the Contractor shall provide and pay for all materials, labor, tools, equipment, etc., necessary for the execution of the work and its completion.

Unless otherwise specified, all material shall be new and all workmanship and materials shall be of best quality.

3. PERMITS - The Contractor shall pay for all building permits, fees and licenses necessary for the execution of the work.

4. PROTECTION - The Contractor shall provide and maintain adequate protection of all his work from damage and shall protect the owner's property from injury or loss during the period of the execution of the contract. He shall protect adjoining property as required by ordinances and these documents.

5. SUPERINTENDENT - The Contractor shall keep on the work during its progress a competent foreman, who shall be familiar with all drawings and specifications and who shall be responsible for the proper cooperation among the various subcontractors.

6. CASH ALLOWANCES - The Contractor shall carry in his proposal the sum of Eight Hundred Dollars ($800.00) to provide all Finishing Hardware including thresholds and kick plates for Doors 1, 2, 4, 6, 7, 10, 16 and 19. Hardware will be selected by the Owner and purchased by the Contractor to the limit of the allowance sum. Any portion of the sum not used will be credited to the Owner. No demand for expenses or profit other than those included in the Contract Sum shall be allowed.

7. CONTRACTOR'S INSURANCE - The Contractor shall maintain the following insurance during the life of the contract:

(a) Workmen's Compensation Insurance, covering all people employed at the site.

(b) Public Liability and Property Damage Insurance, in the following amounts, including contingent liability and property damage to protect the contractor from claims arising from the operations of subcontractors:

7. Contractor's Insurance (Continued)

Public Liability - $300,000 each person
$500,000 each accident

Property Damage - $100,000 each accident

8. FIRE INSURANCE - The Owner shall effect and maintain fire insurance upon the whole structure on which the work of the Contract is to be done, and upon all materials, on or adjacent thereto, intended for use thereon, to at least 80 per cent of the value thereof. Any loss is to be made adjustable with and payable to the parties as their interests may appear.

9. PAYMENTS - The Owner shall pay the contractor sums due under this contract within fifteen days after itemized requisitions are submitted to the Architect. The Owner will withhold 10% of all requisitions until final payment. Final payment will be 92 days after all work of the contract is complete or until the Contractor furnished proof that all bills are paid and the work is free from all possible liens.

10. SEPARATE CONTRACTS - The Owner reserves the right to let other contracts in connection with this work and the contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work.

11. CLEANING UP - The Contractor shall at all times keep the premises free from accumulation of trash material or rubbish caused by his employees or work. At the completion of the work, he should remove all his rubbish, tools, scaffolding, and the like and shall have the building broom clean.

12. BOND - The Owner reserves the right to request from the successful bidder before contracts are signed a Surety Bond in the amount of 100 per cent of the Contract Sum as security for the faithful performance of the Contract. The Owner will pay all fees in connection with this bond.

13. OR EQUAL - Where a trade name is specified, the words "or equal" are implied; however, any substitution must be approved by the Architect before proposals are submitted. All materials shall be installed in exact accordance with manufacturer's recommendation and directions.

14. TEMPORARY SCAFFOLDS, STAGING AND SAFETY DEVICES - The General Contractor shall provide, erect, maintain and remove when directed, all scaffolding, staging, platforms, temporary runways, temporary flooring, guards, railings, stairs, etc., as required by local and state codes or laws, for the protection of workmen and the public. The construction, inspection and maintenance of the above items shall comply with all safety codes and regulations as applicable to the project.

15. TEMPORARY WATER - The General Contractor shall provide a temporary water service for the use of all trades until such time as the permanent water service is available for construction purposes. He shall pay for all temporary water connections and all meter and other charges until final acceptance by the Owner.

16. TEMPORARY ELECTRICITY - The Owner will run and connect all lines for temporary electricity.

Temporary power requirements beyond the ordinary will be the responsibility of the trade requiring same. The General Contractor shall provide all lamps required and pay the cost of all energy consumed. All costs for installing and maintaining the temporary service shall be paid by the Owner.

EXCAVATION, FILLING & GRADING

SECTION 1

1.1 SCOPE - The work of this section includes all labor, material and equipment required to perform all excavation, backfill, fill for grade slabs, grading, and clearing as shown, within the contract limits.

1.2 BENCH MARKS - Maintain carefully all bench marks, monuments and other reference points; if disturbed or destroyed, replace as directed.

1.3 CLEARING AND GRADING

(a) Remove all topsoil or loam and stockpile within the contract limits as directed. Cut and fill as indicated by contour lines. All excavated material shall be used on the site to establish grades as shown.

(b) Basic rough grading insofar as practical shall be done prior to any construction. Within the area of the building all stumps and soil to a depth of 12" shall be removed to provide solid bearing for gravel fill.

1.4 EXCAVATION - Excavate to depths indicated for all foundations, plumbing lines, sewers, water service, underground electric service, driveways, walks, manholes, etc., as shown.

(a) Dimensions: Excavate to elevations and dimensions indicated; allow additional space as required for construction operations and inspecting foundations.

(b) Drainage: Contractor shall control the grading around buildings so that ground is pitched to prevent water from running into the excavated areas or damaging the structures. Maintain all pits and trenches where footings are to be placed, free of water at all times. Provide all pumping required to keep excavated spaces clear of water during construction. Should any springs or running water be encountered in the excavation, the Architect shall be notified and the Contractor shall provide free discharge of it by trenches and drain to an appropriate point of disposal as directed. If permanent provision must be made for disposal of water, the contract price will be adjusted.

1.4 Excavation (Continued)
(c) Frost Protection: Do not place footings or slabs on frozen ground. Where freezing temperature may be expected, do not excavate to the full depth indicated, unless the footings or slabs can be placed immediately after the excavation has been completed. Protect the bottoms, so excavated, from frost if placing of concrete is delayed.

1.5 LEDGE - Ledge removal, if required, shall be the subject of an addition to the Contract in accordance with the unit prices named in the Proposal. Ledge quantities will be measured in place. Ledge in trenches shall be considered to be one yard wide. Blasting shall not be performed until the amount of ledge has been surveyed for quantity and such quantity approved by the Architect.

1.6 FILLING - Using well graded clean gravel in conformance with State Highway Dept. specifications, place and compact of thickness shown, all backfill along foundation, under slabs and fill for paving. All gravel shall be obtained from a single source.

(a) If, by necessity, the source is changed the Architect shall be notified immediately and time allowed for required testing of the new material. The cost of pit testing the new material will be paid by this contractor.

Tests shall be conducted to establish Proctor density, optimum moisture content and percentage of stone content as required by working conditions and will be paid for by the Contractor. Copies of test results will be sent to the Architect and be approved before any gravel is placed.

(a) All fill within the limits of the building; 8" minimum below all slabs on grade; full depth for backfill at walls, trenches, columns, etc. Place and compact in 6" layers.

(b) All areas to be paved; concrete walks and paved drives, 12" minimum but full depth of trenches. Place and compact in 6" layers.

(c) Provide a 4" leveling bed for all pipes in trenches.

1.7 COMPACTION

(a) Sand, gravel and borrow fill shall be compacted to a 95 per cent of densities obtained at optimum moisture content using the modified AASHO method.

1.7 Compaction (Continued)

(b) Compaction equipment: It will be the responsibility of the Contractor to provide the necessary equipment to secure the degree of compaction required. The water content of the fill material may be reduced when necessary by discing, harrowing, tilling, or other procedure appropriate for attaining or promoting aeration. The water content may be increased by the addition of water on the fill or in the borrow area. In either case, the added water must be evenly distributed throughout the fill material prior to compaction. No fill shall be placed until suitable equipment for aeration and addition of water is on the job and is demonstrated to be in satisfactory working condition.

1.8 TESTING - The acceptability of the compaction will be established by test. The Owner will select a testing laboratory which will perform all necessary compaction tests. The unit weight of the compacted material will be established by in-place density tests conducted by the sand-volume or balloon volumeter procedures.

Compaction tests shall be taken in locations as directed by the Owner. The contractor shall pay for twenty tests which shall prove satisfactory. Unsatisfactory tests shall not be included in the count.

Where tests indicate that fill does not conform to the compaction density specified, it shall be removed and replaced with conforming material without additional cost to Owner. The costs of testing replaced material will be paid by the Contractor.

SEEDING AND PAVING

SECTION 2

2.1 SCOPE - The work of this division includes all labor, materials and equipment necessary to do all paving of bituminous concrete as shown and specified. All spreading of loam, seeding and landscaping will be done by the Owner.

2.2 WORK NOT INCLUDED

(a) Concrete paving.

(b) Gravel fill for paved areas, except as noted.

2.3 PAVING - Pave all areas as shown on Sheet 1 with bituminous concrete.

(a) Gravel fill for all paving is placed and compacted under Section 1. This contractor shall do all final shaping including placing of additional gravel if required to come to finish grades as shown. He shall compact and roll to densities as specified in Section 1.

(b) Bituminous concrete shall be equal to and in accordance with the State of Maine, State Highway Commission, Standard Specifications for Highways and Bridges, Revision of June, 1963. Both courses shall be thoroughly rolled and compacted for a smooth dense surface.

(1) Base or binder course shall be 1-1/2" thick, after compaction. Material shall meet gradation requirements of Grading C.

(2) Top or surface course shall be 1" thick after compaction. Material shall meet gradation requirements of Grading D.

(c) Where shown on the Drawings provide and install pre-cast concrete curb, Type B as manufactured by Maine Cement Products.

CONCRETE WORK

SECTION 3

CONCRETE

SECTION 3

3.1 SCOPE - The work of this division is to include the providing of all labor, materials, and equipment necessary to construct all plain and reinforced concrete work, including footings, walls, slabs-on-grade, topping, grade beams and piers, sumps, pits, pads, and all other concrete required by the mechanical trades, and all other items shown on the drawings or called for in the Specifications as concrete, together with all forms, staging, runways, bracing, and removal of same; reinforcing steel, accessories, non-shrink grout, floor hardeners, vapor barriers, placing of anchor bolts, inserts, and all other related items.

3.2 WORK NOT INCLUDED - All sleeves for pipes and conduits for mechanical trades shall be furnished and set by the respective trades.

3.3 ACI and ASTM SPECIFICATIONS - The latest revisions of these specifications and standards applicable to this work are hereby made a part of this division as if fully set forth herein.

3.4 MATERIALS

(a) The concrete for all sections shall be ready-mixed type, mixed at a central plant and delivered in agitator-type trucks. All mixing and delivery shall be done in strict accordance with ASTM C 94, latest revision.

(b) Cement shall be an American-made Portland cement meeting all the requirements of the latest revision of the Standard Specifications of the American Society for Testing Materials (ASTM) Serial Designation C150-62, Type II.

(1) The same brand shall be used throughout the entire work.

(2) Cement that has hardened or partially set shall not be used.

(c) Admixtures shall not be used, except as follows:

An air-entraining agent shall be used for all concrete which, in the finished structure, will be exposed to the weather. The air-entraining agent shall be used in strict accordance with the manufacturer's recommendations, and it shall be added at the batching plant. The air-entraining agent shall conform to ASTM C260 and shall entrain (in the field) 5 per cent plus or minus 1 per cent air. It shall be as manufactured by Dewey & Almy Chemical Division, Sika Chemical Corporation, or A. C. Horn Co.

3.4 Materials (Continued):

(d) Aggregates shall conform in all respects to the "Specifications for Concrete Aggregate, ASTM C33".

(e) Maximum size of aggregates shall not be larger than 3/4 of the minimum clear spacing between individual reinf. bars. Maximum size of any aggregate shall not exceed 1-1/2 inches.

(f) Mixing water shall be clean and free from oil, acid, alkali, organic matter, or other deleterious substances.

(g) Grout shall be non-shrink grout and shall be "Embeco" as manufactured by The Master Builders Co., or Vibro-Foil as manufactured by W. R. Grace & Co.

(h) Premoulded expansion joint filler strips, if called for on the drawings, shall be 1/4 inch thick of premoulded, resilient, compressible, re-expanding, non-extruding bituminous and fiber material, made with cane fibers, uniformly saturated with not less than 35 per cent and not more than 50 per cent by weight of asphalt.

(i) Metal reinforcement. Reinforcing bars shall be new intermediate grade, and shall conform to the requirements of the "Standard Specifications for Minimum Requirements for the Deformations of Deformed Steel Bars for Concrete Reinforcement" (ASTM 305) and of the "Standard Specifications for Billet-Steel Bars for Concrete Reinforcement" (ASTM A15).

(j) Welded wire fabric for concrete reinforcement shall conform to the requirements of the "Standard Specifications for Welded Steel Wire Fabric for Concrete Reinforcement" (ASTM A185).

(k) Form oil: Forms, if oiled, shall be treated with Slippit as manufactured by Park Chemical Co., College Park, Georgia, or Formfilm as manufactured by W. R. Grace & Co..

(l) Vapor barrier: Below all concrete slabs provide a vapor barrier of 4-MIL black polyethylene "Visqueen" or equal, as made by Monsanto Chemical Co.; joints, the full length of all runs; form side seams overlapping 6" of each edge into a three-fold seam.

(m) Concrete floor hardener: Exposed concrete floors as scheduled shall have applied three (3) coats of floor hardener. Floor hardener shall be Kornolith or Kornstone as manufactured by W. R. Grace & Co., or Lapidolith as manufactured by Sonneborn Chemical & Refining Corp.

3.5 FORMS

(a) Forms of wood shall be made and erected with sufficient strength, bracing, and ties to conform to the shapes, lines, grades, and dimensions of the concrete called for on the drawings, and shall remain in correct position during and after depositing of concrete so as to produce a plumb, true, and even concrete surface.

(b) Form ties and spreaders shall be of such type as to leave no metal closer than one (1) inch from exposed concrete surfaces. Cutting ties back from the surface will not be permitted.

(c) Removal of forms:

(1) The removal of forms shall be carried out in such a manner as to assure the complete safety of the structure. In no case shall shores of supporting members be removed before the concrete is set hard and has sufficient strength to safely carry its own weight and all additional loads upon it, or that will be put upon it.

(2) The following table may be used as a guide in the removal of forms:

	Temperature (F.)				
	Over 95°*	70°-95°	60°-70°	50°-60°	Below 50°
Walls	5 days	1 day	2 days	3 days	**
Grade Beams	8 days	4 days	5 days	6 days	

*Where exposed surfaces of concrete can be effectively sealed to prevent loss of water, these times may be reduced to the 70°-95° times.

**Do not remove forms until site-cured test cylinders develops 50% of 28-day strength.

(3) The Contractor shall be responsible for safe practice in removing forms and shoring and placing adequate temporary supports as required.

3.6 PROPORTIONING AND CONCRETE STRENGTH - The mixes for all of the specified strengths of concrete shall be prepared by a competent concrete designer. Designs will be in compliance with ACI 613, latest edition. Maximum water-cement ratio shall not exceed 5-1/2 gal. per bag of cement (94 lbs. net) for any concrete exposed to the weather and is air entrained. Proposed mixtures shall be submitted to the Architect for his approval at least 10 days in advance of the beginning of footing pours. These mix designs shall not be deviated from without written permission from the Architect.

3.6 Proportioning and Concrete Strength (Continued)

The slump of the concrete shall be the minimum that is practicable for proper placing and shall not under any circumstances exceed 4" as measured in accordance with ASTM C143.

3.7 MIXING

(a) Ready-mixed concrete shall be mixed and delivered in accordance with the requirements set forth in "Specifications for Ready-Mixed Concrete" (ASTM C94-62).

(b) Transit-mixed concrete shall be delivered in high-lift trucks to enable it to be easily deposited in the forms.

(c) The transit-mixing trucks shall be of an approved design and shall be equipped with a separate container for holding the mixing water.

(d) The concrete shall be mixed in the drums of the truck at not less or more than 5 rpm. Mixing shall continue at the place of deposit of concrete prior to dumping, if necessary to fulfill the requirements as specified. The mixing shall be continuous after the water has been added to the mix in the drum, but no concrete shall be placed in the forms more than 60 minutes after the water has been added.

(e) The mixing drums shall not be loaded beyond their rated capacities as given by the manufacturer.

3.8 CONCRETE PLACEMENT

(a) Before the reinforcement is in position and before any concrete is placed in any particular location, the Contractor shall notify all whose work is in any way connected with or influenced by the concrete work, and give them reasonable time to complete all portions of their work that must be placed before concrete is deposited.

(b) Immediately before concrete is placed, the Contractor shall inspect all forms to be sure that they are in proper position, sufficiently rigid, thoroughly clean, properly oiled, and free from foreign materials, and that all reinforcement is in proper position. He shall notify the Architect and/or Engineer or their representatives before concrete placement is begun.

11/1/73
Wet pour in
Rain
7" + slump.

3.8 Concrete Placement (Cont'd):

(c) Concrete shall be [illegible] from the mixer to the place of final deposit by methods which will prevent the separation or loss of the materials. No concrete shall have a free fall exceeding four feet. The use of chutes, or tremies, shall be used at all times. Methods for placing as recommended in ACI 614-59 shall be used at all times.

(d) Concrete shall be deposited as nearly as possible to its final position to avoid segregation due to rehandling or flowing. No concrete that has partially hardened or been contaminated by foreign material shall be deposited on the work, nor shall retempered concrete be used.

(e) When concreting is once started, it shall be carried on as a continuous operation until the placing of the panel or section is completed.

(f) All concrete shall be thoroughly compacted by suitable means during the operation of placing, and shall be thoroughly worked around reinforcement, embedded fixtures, and into the corners of the forms.

(g) Where conditions make compacting difficult, or where the reinforcement is congested, batches of mortar containing the same proportion of cement to sand as used in the concrete shall first be deposited in the forms. The concreting shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the spaces between the bars.

(h) Water shall be removed from excavations before any concrete is deposited. Any flow of water into an excavation shall be diverted through proper side drains to a sump, or shall be removed by other approved methods which will avoid washing the freshly deposited concrete. No pumping shall be done while the concrete is being placed.

3.9 VIBRATION

(a) Internal vibrators shall be employed so that thorough consolidation is secured throughout the entire volume of each layer of concrete. Time of vibration shall be such that reinforcement is completely embedded and compaction accomplished without separation or segregation of the concrete ingredients. Vibrators shall be inserted at intervals to effect vertical settlement within each unit's area, and shall not be used to push or distribute concrete laterally, and shall be withdrawn completely before being moved to the next point of application.

(b) External vibrators shall be applied only long enough to embed the coarse aggregate and to bring enough mortar to the surface to assure a satisfactory finish.

3.10 CURING

(a) The importance of proper curing of the new concrete cannot be over-emphasised. The requirements given in paragraphs (b) and (d) inclusive, hereinafter are considered the minimum good practice. Any other method may be submitted to the Architect and/or Engineer for consideration.

(b) For atmospheric temperature over 50 degrees F., slabs shall be covered, after initial set, with a layer of wet burlap. The surface shall be kept continually wet for at least 7 days, although the burlap may be removed after being in place for 72 hours.

(c) For slabs with overhead cover and for all slabs being cured when temperatures are below 50 degrees F and above 40 degrees F., the surfaces need not be covered with burlap but they must be kept continuously wet for at least 7 days.

(d) Concrete walls shall be cured as carefully as the slabs. However, instead of covering the sides with burlap, it will be satisfactory if the forms are loosened after the concrete has hardened, and the wall sprinkled with water and kept continuously wet for at least 7 days.

(e) Other means of curing shall be submitted to the Architect and/or Engineer for approval before being used.

3.11 COLD WEATHER

(a) Adequate equipment shall be provided for heating the concrete materials and protecting the concrete during freezing or near freezing weather. No frozen materials or materials containing ice shall be used.

(b) All concrete materials and all reinforcement, forms, fillers, and ground with which the concrete is to come in contact, shall be free from frost. Whenever the temperature of the surrounding air is below 40 degrees F., all concrete placed in the forms shall have a temperature of between 50 degrees F. and 70 degrees F., and adequate means shall be provided for maintaining a temperature of not less than 50 degrees F. for three days after placing. The subsequent cooling of the concrete to outdoor temperature shall be controlled to provide for gradual adjustment.

(c) No salt or other chemicals for the prevention of freezing shall be used.

3.12 CONSTRUCTION JOINTS

(a) Construction joints shall be located so as to least impair the strength and watertightness of the structure. Where a joint is to be made, the surface of the concrete shall be thoroughly cleaned and all laitance removed. In addition to the foregoing, the vertical joints shall be thoroughly wetted but not saturated, and slushed with a coat of neat cement grout immediately before the placing of new concrete.

(b) Construction joints in slabs-on-grade shall be made using JAHN SCREED KEY JOINT; depths to be 1/2" less than slab thickness; 24" support stakes (or less if required over ledge); stakes spaced as required to maintain screed firm and plumb. Plain steel dowels, not deformed bars, 12" long, placed 1' o.c. thru screed knockouts.

(c) Reinforcement shall be continuous through all wall construction joints.

(d) Sawn control joints shall be as indicated.

(e) Construction joints in walls shall not be more than 60 feet apart in any direction.

3.13 ANCHORS, TIES, SLEEVES, INSERTS, ETC. - This Contractor is to build into his work anchors, ties, sleeves, inserts, etc., as specified herein or furnished by other contractors.

3.14 OPENINGS - The Contractor is to ascertain definitely where openings for drains, pipes, conduits, ducts, and all other openings needed for the various trades are to be located and provide for same.

3.15 REINFORCING STEEL

(a) Cleaning, bending, and placement of reinforcement shall be in accordance with ACI 315 and ACI 318. Metal shall be clean and free from loose scale or flake rust or any coating that destroys or reduces the bond to the concrete.

(b) Splicing of reinforcement and concrete protection shall be in accordance with ACI 318, unless noted or shown on the drawings.

3.16 PROTECTION OF WORK

(a) Concrete that has taken its initial set shall not be walked upon or subjected to loads for a period of 12 hours. Until all concrete has attained its full 28-day strength, care shall be taken to avoid overloading with materials, forms, or equipment.

3.16 Protection of Work (Continued).

(b) Where fresh concrete is exposed to damage from rain, it shall be protected in a manner to prevent segregation of materials or washing or roughening of cement. This provision shall apply especially to floor slabs where no subsequent cement finish is to be applied and the monolithic slab is to receive the flooring material or be left exposed.

3.17 CUTTING AND PATCHING

(a) This Contractor is to promptly render assistance to the other mechanics and is to do all cutting and jobbing which may be necessary to enable them to properly fulfill their several contracts.

(b) Clean away and remove all concrete droppings and form rubbish entirely from the premises on completion of this part of the work.

3.18 WELDED WIRE FABRIC - All concrete slabs-on-grade shall have 6 x 6 x 6/6 welded wire fabric reinforcement unless noted otherwise. Reinforcing shall be at the midpoint of slab with 6" minimum side and end laps. Reinforcing shall be continuous through sawn control joints and shall stop at stop-pour joints where Jahn-Screed is used.

3.19 CONCRETE FLOORS

(a) Concrete floors to be covered with ceramic tile and concrete floors that are to have concrete topping shall, before the concrete has hardened, be thoroughly cleaned of scum and laitance by brushing with a stiff broom after the concrete has sufficiently set to prevent serious imprints.

(b) Concrete floors to be covered with resilient flooring and interior floors to be left exposed shall be treated as follows.

(1) Floor slabs shall be screeded and floated at the proper levels to remove all humps and hollows, leaving a true, even surface. After all the bleeding water has disappeared from the surface, and after the concrete has hardened sufficiently to prevent upward movement to the surface of the fine aggregate particles, it shall be floated and steel troweled to a smooth, hard, and impervious surface. An approved type of mechanical trowel with rotating steel blades may be used for this operation.

(2) After the surface has hardened sufficiently to ring under the trowel, it shall again be troweled with a steel hand trowel to a hard, dense surface free from blemishes. A mechanical trowel will not be permitted for this operation.

3.19 Concrete Floors (Continued):

(3) Variation from the level shall be held within the following tolerances:

In any ten feet.....1/4 inch
In any six feet.....1/8 inch
In any three feet.....1/16 inch

(c) Exterior exposed slabs, walks and stairs shall be finished with a wood float and then given a broom finish.

3.20 FINISHING OF CONCRETE

(a) It is the intent of this Specification to require forms, mixtures of concrete, and workmanship so that permanently exposed concrete surfaces will require no patching or finishing.

(b) As soon as the forms have been stripped, defective concrete and honeycombed areas of concrete where ordinary wood or plywood forms were used shall be chipped down square and at least one (1) inch deep to sound concrete by means of cold chisels or pneumatic chipping hammers. If honeycomb exists around reinforcement, chip to provide a clear space at least 3/8" all around the steel to afford a proper ultimate bond thereto. For areas less than 1-1/2" deep, the patch may be made in the same manner as described for filling form tie holes, care being exercised to use adequately dry (non-trowelable) mixtures and to avoid sagging. Thicker repairs will require building up in successive 1-1/2" layers on successive days, each layer being applied as described above. To aid strength and bonding of the multiple layer repairs, a non-shrink metallic aggregate is recommended as an additive as follows:

Material	Volume
Cement	1.0
Non-shrink Metallic Aggregate	0.5
Sand	1.5

For very heavy (Generally, formed) patches, pea gravel may be added to the mixture and the proportions modified as follows:

Material	Volume
Cement	1.0
Non-shrink Metallic Aggregate	0.5
Sand	1.0
Pea Gravel	1.5

(c) Form tie holes shall be plugged solid with a mortar of the same color and texture as the concrete.

3.20 Finishing of Concrete (Continued)

(d) Any concrete which is not formed as shown on the plans for any reason is out of alignment or level, or shown a defective surface, shall be corrected as directed by the Architect.

(e) All fins and other projections on interior and exterior concrete shall be removed and offsets leveled. Surfaces shall be rubbed with a carborundum sufficiently to provide reasonably smooth and level planes. All exposed concrete shall have a smooth rubbed surface.

3.21 FLOOR HARDENER - Concrete floor surfaces shall be thoroughly cured, clean, dry and free of all dust, dirt, grease, oil, paint, or other foreign matter, and then hardened with three (3) coats of liquid floor hardener mixed as directed by the manufacturer. The solution shall be flushed and spread uniformly over the entire surface with a soft fiber broom, squeegee, or mop at the rate recommended by the manufacturer. Do not permit solution to accumulate in depressions, and remove all surface excess after 10-15 minutes. Allow floor to dry between coats. Between coats and after the final coat, remove all whitish deposits which may appear.

3.22 PADS, EXTERIOR WALKS, CONCRETE LINTELS, ETC. - Verify with architectural and mechanical drawings for size, location, and details of thresholds, pipe sleeves, concrete pad for fuel oil tank, transformer vault slab, and all other architectural or mechanical equipment requiring concrete.

3.23 REINFORCING STEEL ACCESSORIES - All reinforcing for slabs, beams, etc., shall rest on galvanized wire bar supports. The number and amount of bar supports shall be in accordance with the CRSI Recommended Practice for Placing Reinforcing Bars, latest edition.

3.24 TESTS OF CONCRETE

(a) Test cylinders shall be made throughout the operation at the rate of three cylinders for [illegible] cubic yards and/or each placement of each different section of the building. All specimens shall be made and stored as prescribed by the current ASTM C31 "Method of Making and Curing Concrete Compression and Flexure Test Specimens in the Field" and ASTM C39 "Method of Test for Compressive Strength of Molded Concrete Cylinders". At the prescribed times, these cylinders shall be sent to the laboratory for testing, and the results shall be transmitted to the Architect in duplicate. Cost of all testing shall be included in the cost of the concrete.

(1) Samples from which compression test specimens are molded shall be secured in accordance with ASTM C172, "Sampling Fresh Concrete".

3.24 Tests of Concrete (Continued)

(b) In all cases where the average strength of the cylinders shown by these tests for any portion of the structure falls below the minimum ultimate compressive strengths called for, the Architect and/or Engineer shall have the right to order a change in the mix or in the water content for the remaining portion of the structure, and may require load tests to be made, at the Contractor's expense, on the portions of the building so affected.

(c) If the average strength of any set of 28-day test specimens is less than the requirements, the Architect and/or Engineer may require core samples from the portion of the structure determined by the Engineer as represented by the deficient 28-day test specimens.

(d) If the strength of any of the core samples is less than the requirements, the Architect and/or Engineer may require the Contractor, at his own expense, to conduct further curing of said portion for the period of not more than ten days, after which additional core samples may be taken and/or the mix modified for subsequent work.

(e) If the average strength of such additional core samples is less than the requirements, the Architect and/or Engineer may require the Contractor, at his own expense and as directed by the Engineer, to strengthen adequately or to replace said portion.

(f) An accurate daily record of the locations in which concrete is placed shall be maintained by the Contractor. He shall furnish copies of this record to the Architect weekly.

3.25 INSULATION - Around the entire exterior perimeter of the building, below floor line as shown, provide a 2" x 24" and a 1" x 4" strip of type SM Styrofoam as made by Dow Chemical Co. One inch thick Urethane, of equal insulating value, may be used in lieu of Styrofoam.

MASONRY

SECTION 4

4.1 SCOPE - The work of this section includes all labor, material and equipment necessary to erect masonry in exterior walls, interior partitions, storm water drains and sewers, and to build in all insulation, flashing, anchors, bolts, plates, etc., as shown or specified.

4.2 SAMPLES - Before starting any masonry this contractor will furnish a sample of both the scored block and the ribbed split block for approval.

4.3 MATERIALS

(a) Concrete Block - shall be produced from aggregate conforming to ASTM C 33 designation; shall be uniform in texture and appearance, and shall be modular in dimensions. All shapes and sizes required, as shown on the plans, shall be two-core load-bearing units, and shall have a maximum linear shrinkage (potential) of 0.065% when tested for drying shrinkage in accordance with Tentative Method of Test: ASTM Designation: C 426-65T. All units shall be a minimum of 28 days old after having been steam cured, and shall conform to ASTM Designation C 90-64T for Grade F-I moisture-controlled units. They shall be as manufactured by the Besser Super-Vibrapac process as produced by Maine Cement Products Co., or approved equal. All units shall be protected from the elements when stored at the job site. Manufacturer shall provide notarized certification that units supplied conform to these requirements.

(b) Ribbed Split Block - shall comply with the above specification. Units shall have 7 flutes in the length of the block and be split along the flutes. Color as selected shall be added to the mix. Provide corner block as required.

(c) Scored Block - shall comply with the above specification. Face of block shall be scored 3/8" wide, 3/8" deep, with 2 score lines in length of block.

(d) Concrete Brick - shall be produced from aggregate conforming to ASTM C 33-55T designation. Units shall conform to all physical properties of ASTM C56-55 designation for Grade A, except that the maximum allowable tolerance shall be 1/16".

(e) Mortar - shall be made from Dragon Cement Mor ar or Brixment, conforming to ASTM Spec. C-91-60 Type II.

(1) Sand for mortar shall conform to ASTM Spec. C-144 (52T), clean, sharp, free from loam, acids and organic matter.

(2) Water shall be from the City mains.

4.3 Materials (Continued)

(f) Sealant - shall be unicrylic 60 construction sealant as made by Pecora Chemical Corp.

4.4 STORAGE OF MATERIALS - Store materials under cover in a dry place and in a manner to prevent damage or intrusion of foreign matter. During freezing weather protect all masonry units with tarpaulins or other suitable materials. Store concrete masonry units under covers that will permit circulation of air and prevent excessive moisture absorption. Store cement, lime and air-setting mortars in water-tight sheds with elevated floors. Protect reinforcement from the elements; immediately before placing, reinforcement shall be free from loose rust, ice or other foreign coatings that will destroy or reduce the bond. Concrete masonry units shall be protected against wetting prior to use.

4.5 GENERAL REQUIREMENTS

(a) Do not lay masonry when the temperature of the outside air is below 40 degree F. unless suitable means as approved by the Architect are provided to heat materials, protect work from cold and frost and insure that mortar will harden without freezing. (No anti-freeze ingredient shall be used in the mortar).

(b) Protect facing material against staining, and keep tops of walls covered with non-staining waterproof coverings when work is not in progress. When work is resumed, top surface of work shall be cleaned of all loose mortar and, in drying weather thoroughly wet, except for concrete masonry units.

(c) Before closing up any pipe, duct or similar inaccessible spaces or shafts with masonry, remove all rubbish and sweep out the area to be enclosed.

(d) Provide level and solid bearing in masonry walls directly under poured concrete slabs, structural steel beams, trusses, and steel joists. Solid bearing shall be of sizes and thickness indicated and consist of at least 6 courses of brick or 2 courses of solid concrete masonry units, bond beam or 2 courses of hollow units with voids filled.

(e) The open space at control joints shall be kept free of mortar by using a continuous wood or metal strip temporarily set on the wall.

(f) Consult other trades and make provisions that will permit the installation of their work in a manner to avoid cutting and patching. Build in work specified under other sections, as necessary, and as the work progresses. Set steel lintels in bed of mortar. Fill spaces around jambs and heads of metal door bucks and frames solidly with mortar.

4.6 FLASHING - Build in all flashing as furnished in Roofing and Sheet Metal, Section 8, as specified below.

(a) Thru wall flashing to be furnished in rolls. All end joints to be lapped 4" and bedded in sealant. Form accurately to drain out over lintels and cap flashings and turned up 1" at inside terminal.

(b) Cap flashing at loading dock roof. Use 6" end laps bedded in sealant.

4.7 JOINT REINFORCEMENT

(a) All interior concrete block walls and partitions shall be reinforced with heavy Dur-O-Wall, of appropriate widths. Reinforcement shall occur at joints that are 2', 4', 6' and above floors. At doors without lintels reinforce joint at head of opening with a length 4' longer than opening.

(b) Reinforce all exterior walls with extra heavy galvanized Dur-O-Wall for 12" thickness in alternate block joints.

4.8 LAYING CONCRETE BLOCK - Using concrete block and mortar specified erect all block walls and partitions as shown, of thickness indicated. Build in all door frames, bucks, lintels, anchors, etc.. Set all units plumb and true to line, with level horizontal joints, constant thickness joints - tooled as directed. Provide all special shapes as shown and required including bond beam units. Cavity must be kept clean and free of mortar and other debris for satisfactory placement of insulation. Stop wall at 8' for first application of insulation.

(a) Lay hollow concrete masonry units with full mortar coverage on horizontal face shells. Lay solid units with full head and bed joints. Make joints uniform, approximately 3/8" thick unless indicated otherwise.

(b) Provide continuous vertical control joints in concrete masonry unit walls, partitions and furring as locations indicated on drawings. Form joints as detailed. Joint reinforcement shall not continue across control joints unless it is indicated on drawings. Control joints on the outside face of exterior walls shall be raked out and left ready for sealant. Control joints on exposed interior faces of interior walls and partitions shall be raked to a depth of 3/8" and neatly tooled square and smooth.

(c) Cut and grind all units as required for building in electric boxes, ducts, etc.. Units exposed in finish work shall be cut with an approved type power saw.

4.8 Laying Concrete Block (Continued)

(d) Grout in solid with mortar at all metal door frames.

(e) Form bond beams and lintels and provide reinforcing bars as shown. Reinforcing shall be as specified in Concrete, Section 4. Concrete for bond beams and filling voids in block shall be as specified in Section 3, 3000# mix using maximum 3/8" aggregate size. Thoroughly rod all concrete used for bond beams, lintels and block filling. Do not carry block coursing more than 16" without filling voids. Block voids shall be filled where noted on the drawings.

(f) Scored block shall be laid in running bond with score lines staggered and in approximately the same location in every other course.

(g) Ribbed split block shall be laid with the ribs stacked. Finish joints flush with the block surface.

4.9 JOINT FILLERS, ETC. - Provide as shown and specified joint fillers of Homex as made by the Homosote Co.. Widths as shown or required; 1/4" thick at expansion and control joints.

4.10 SEWER PIPE - Pipe for exterior storm sewers and sanitary sewers where noted A-C shall be asbestos-cement Transite sewer pipe as made by Johns-Manville, Class 2400, with Ring-Tite gasketed joints, adapters to fit cast iron and fittings as required. Pipe shall be set in a bed of compacted sand and installed in strict conformance with manufacturers directions. Observe caution when back filling the trench to avoid damaging pipe or joints.

4.11 CLEANING - All exposed masonry surfaces shall be cleaned in an approved manner as soon as possible after erection. If cleaning of block work is delayed, this contractor shall be responsible for all rubbing or grinding as required to provide a satisfactory paint base.

4.12 SEALING - Using Unicrylic 60, neutral color, a one-part acrylic polymeric sealant as made by Pecora Chemical Corp. seal and make water tight the following:

Window frame perimeter to masonry.
Jamb and head of exterior doors.
Exterior masonry control joints.
Perimeter of plaster ceilings at Entrances

Sealant shall be installed in strict accordance with manufacturers directions to surfaces that are clean and dry. Generally sealant shall be gun applied. Surface of the joint shall be tooled to compress the sealant into the joint and leave a smooth appearance.

Install Pecora Round Joint Filler No. 89, closed cell butyl to provide proper depth of sealant joint and to allow sealant to be applied under pressure.

4.12 Sealing (Continued)

Sealant depth in the joint shall be equal to the width, minimum 1/4", maximum 1/2".

This Contractor shall exercise care not to damage or soil the work of other trades and shall clean up any misplaced sealant.

4.13 PRECAST CONCRETE LINTELS - Furnish and install precast concrete lintels at all typical windows as indicated. Provide all reinforcing as shown or required. All units shall be shop fabricated, as made by Maine Cement Products in accordance with the standards of the American Concrete Institute.

4.14 PRECAST ROOF DECK - Roof deck over Loading Dock shall be Span-Deck as manufactured by Bancroft & Martin. Hollow-core units shall be machine cast, 8" thick nominal 3' widths, with pretensioned reinforcing designed for a minimum allowable superimposed load of 50#/s.f.

Installation of Span-Deck units shall be by the manufacturer or under his supervision. Units shall be aligned, leveled and the keys grouted with a sand-cement grout.

4.15 WALL INSULATION - Fill entire cavity of exterior masonry wall with foamed-in-place UFC Urea-Formaldehyde foam as made by U. F. Chemical Corp.

Installation shall be by licensed applicators only using equipment specially designed for this material.

Where shown on the drawings at the bond beam at top of wall and inside face of wall at Entrances 1 and 2 and elsewhere, install 3/4" Thurane, foamed urethane board carefully fitted and bonded to block using mastic approved by manufacturer.

STRUCTURAL STEEL & MISCELLANEOUS STEEL

SECTION 5

5.1 SCOPE - The work of this section includes furnishing all labor, materials and equipment necessary to complete the entire structural steel work, beams, angles, columns, lintels, bearing plates, connections, wall anchors, anchor bolts, clip angles, base and cap plates for columns and all other small or special structural sections required to complete this Contract, including all header angles for roof openings; and all miscellaneous steel as specified herein.

5.2 WORK NOT INCLUDED

(a) Metal roof deck.

(b) Open web steel joists, bridging and joist anchors.

5.3 SHOP DRAWINGS

(a) Submit to the Architect, for approval, shop and erection drawings. Drawings shall be complete in all details. No work shall be fabricated without this approval.

(b) The approval of shop drawings will be for size and arrangement of principal and auxiliary members and strength of connections. Any errors in dimensions shown on the drawings shall be the responsibility of the Contractor.

(c) The shop drawings shall show clearly the location and details of all members. Each piece shall be plainly marked with suitable erection marks which also shall be shown on the erection drawings.

(d) The size and length of all welds shall be shown on the drawings.

5.4 MATERIALS

(a) Steel for structural steel shall be ASTM Specifications A36 with a minimum specified yield point of 36,000 psi.

(b) Shop paint shall be Stanrust 66 Red Oxide Primer as manufactured by Stanley Chemical, or TNEMEC 99 Red Metal Primer as manufactured by TNEMEC Co., or Zinc Chromate Primer by Benjamin Moore & Co.

5.5 HANDLING - The steel shall be handled with cranes as far as practicable. Steel shall not be dumped off cars or trucks, nor treated in any manner likely to cause injury to the steel.

5.6 STORING - Steel shall be placed upon skids and not on the ground. It must be placed and blocked up so that it will not become bent or otherwise injured.

5.7 FABRICATION AND ERECTION

(a) All design, fabrication, and erection of structural steel shall be in accordance with the specifications for the "Design, Fabrication & Erection of Structural Steel for Buildings" of the AISC, latest edition.

(b) All workmanship throughout shall be equal to the best practice in modern structural work. All holes shall be punched or drilled. Burned holes and drifting to enlarge unfair holes will not be allowed.

(c) All welding shall be done in strict accordance with the American Welding Society and the AISC.

(d) Certified Welders: Welds shall be made only by operators who have been qualified by tests as prescribed in the "Standard Qualification Procedure" of the American Welding Society, to perform the type of work required, and shall be certified by the State of Maine for positions required on the job.

(e) Connections:

(1) All shop fabricated structural steel shall be welded, or as noted. Welding electrodes shall conform to "E60" Series, ASTM A233. The use of gass welding will not be permitted.

(2) All angle connections shall be the sizes called for in Manual of Steel Construction, Part 4, of the AISC, or as noted.

(3) Field connections shall be made by bolting, unless noted. Bolts shall be ASTM A325 with the maximum number of bolts possible for a framed beam connection, unless noted. High strength bolts shall be installed by calibrated torque wrenches or by the "Turn-of-Nut" method in accordance with the ASTM A325 Spec. Minimum bolt tension shall be as follows:

Bolt Size	Min. Bolt Tension (lbs.)
1/2	12,000
5/8	19,200
3/4	28,400

5.7 Fabrication and Erection (Continued)

(f) Set all structural steel as required for, plumb and true to line and grade. Provide for bracing, bridging, and equipment required for the erection of the steel. Temporary bracing shall be designed to take all erection and wind stresses. Such bracing shall be left in place as long as may be required for safety.

(g) Erection stresses: Wherever piles of materials, erection equipment or other loads are carried during erection, proper provision shall be made to take care of stresses resulting from the same.

5.8 LINTELS - Lintels that are shown on the architectural plans and in the door schedule for doors, windows, etc. are to be furnished under this division of the Specifications. All lintels are to have a minimum of eight (8) inches of bearing unless otherwise noted.

5.9 ROOF STEEL - Provide all header angles shown for roof openings, bases for mechanical equipment etc..

5.10 MISCELLANEOUS STEEL - Furnish all items as listed below to the job for erection by others, prime painted as previously specified. Finish items to have joints welded and ground smooth.

(a) Steel ladder from floor to roof in warehouse: 1 ½" x 1" rails 18" o.c., 5/8" round rungs 12" o.c., 4" x 6" x 6" clip angles to wall not over 6' o.c., 3/4" bolts to secure ladder to wall, all to be welded ground smooth and prime painted.

(b) Channels, hanger rods and angles at the head of toilet partitions.

(c) Exterior handrails of 1½" I.P.S. steel pipe at east and south entrances and at loading dock. Provide with wall flanges to bolt to masonry and intermediate brackets as required. Provide sleeves for loading dock verticals.

(d) Steel jambs at overhead doors.

(e) At storm water outfall - ½" galvanized wire mesh screen with a ¼" x 2" flat bar frame, welded; four stainless steel anchor bolts, near corners - ½" x 6"

(f) Wooster #150, Alumogrit, 1½" x ½" abrasive curb bars with concrete anchors at edge of loading dock and at south entrance.

5.10 Miscellaneous Steel (Continued)

(g) Brackets as detailed for lavatory counter in Room 11.

(h) Rail brackets - provide all rail brackets for wood rail as shown at Entrance 1. Brackets shall be bent from 1/4" steel plate with all edges and corners neatly eased

STEEL JOISTS

SECTION 6

6.1 SCOPE - The work of this section includes all labor, materials and equipment necessary to install all open web steel joists, bridging, etc., as shown and specified.

6.2 GENERAL - All steel joists, fabrication, erection, etc., shall be in strict conformance with the "Standard Specifications for Open Web Steel Joists" as issued by the Steel Joist Institute, latest edition. All joists shall be fabricated by a member firm of the Steel Joist Institute.

(a) Header and Trimmer angles for openings in steel joist construction are specified under Structural Steel.

(b) Bridging - and bridging anchors shall all be in accordance with **Institute standards.**

(c) Spacing shall be as shown except for minor adjustments as required to avoid conflict with openings, plumbing, etc..

(d) Bearing - All joists are shown bearing on steel angles, beams or plates. Where possible the bearing angle shall be set to receive the joist seat square or else slightly pitched. Where joists bear on steel beams provide full bearing of seat to seat by filling with weld. All joists shall be welded at bearings in accordance with the Steel Joist Institute standards.

6.3 SHOP DRAWINGS

(a) Submit for approval, shop and erection drawings. Drawings shall be complete in all details, showing sizes of all members. No work shall be fabricated without this approval.

(b) The approval of shop drawings will be for size and arrangement of members. Any errors in dimensions shown on the shop drawings shall be the responsibility of the Contractor.

6.4 MATERIALS

(a) Steel for open web steel joists shall be in accordance with the Steel Joist Institute Standard Specifications for "H" series joists.

6. Materials (Continued)

(b) Shop paint for open web steel joists where no ceilings occur shall be Standard Red Oxide Primer as manufactured by Stanley [illegible] or THERMEC 99 Green Metal Primer as manufactured by THERMEC Co., or Standard of the joist manufacturer [illegible] to that specified. The name of the paint supplied shall be stated on the shop drawings. Joists above ceilings may be primed with a dip coat of black asphaltum.

6.2 STEEL JOISTS

(a) All open web steel joists shall be standard types and sizes called for, and shall be manufactured in accordance with the Steel Joists Institute.

(b) Joists shall be reinforced for any concentrated loads as indicated on the drawings.

(c) The number of rows of bridging for all open web steel joists shall conform to the requirements of the Steel Joist Institute. Angles shall be used for [illegible] bridging.

(d) All open web steel joists parallel and adjacent to walls shall have horizontal bridging carried to these walls and securely anchored [illegible].

(e) Bridging shall be completely installed before any construction loads are placed upon the joists.

(f) Bearing ends of open web steel joists shall be so proportioned that the unit pressures per square inch shall not exceed 250 pounds for solid masonry, or 600 pounds for poured concrete. Where steel joists rest on steel supports minimum length of bearing shall be according to the Steel Joist Institute.

6.6 ERECTION OF OPEN WEB STEEL JOISTS

(a) Open web steel joists shall be erected in accordance with the requirements of the Steel Joist Institute.

(b) Care shall be exercised at all times to avoid damage through careless handling during unloading, storing, and erecting.

(c) Joists shall not overhang truck in transportation, and shall be supported at two points when handled by crane. Care shall be exercised in unloading, piling, and handling steel joists to prevent bending or distortion.

(d) Fasten all joists to steel bearings by welding with a minimum of 2" weld on both sides of each joist.

STEEL ROOF DECK

SECTION 7

7.1 SCOPE - The work of this section includes all labor, materials and equipment necessary to furnish and install steel roof deck over the entire building as shown or specified including all accessories.

7.2 MATERIAL - Steel deck shall be as manufactured by Wheeling Corrugating Co.. Types and gauges shall conform to the following design provisions, 20 gauge, type F deck.

7.3 DESIGN - Maximum fiber stress shall not exceed 20,000 psi under a total dead and live load of 50 pounds per square foot. Deflection shall not exceed 1/240th of the span under a live load of 40 pounds per square foot.

Section properties are to conform to the "Specifications for the Design of Light Gage Cold Formed Steel Structural Members" as published by the American Iron and Steel Institute and to the specifications of the Steel Deck Institute.

Where possible deck sheets shall extend over three or more supports.

7.4 SHOP FINISH - Shop finish shall be baked on enamel.

7.5 FIELD PAINTING - After erection this contractor shall touch up all surfaces of the deck where the shop finish has been destroyed in transit or by welding, etc..

7.6 ERECTION - Shall be in strict conformance with the manufacturer's recommendations. Electric arc welding shall be used for securing deck to structural supports and for securing all accessories. This contractor shall supply setting diagrams for approval, before deck sheets are cut. These diagrams shall show typical installation details and setting instructions for accessories. Cut for all roof openings.

7.7 ACCESSORIES - Furnish and install the following accessories of galvanized steel, 14 gauge or as noted:

(a) Flat plate reinforcing, 20" x 20", at all plumbing vents and pipes.

(b) Flat plate reinforcing, 30" x 30", for all roof drains.

(c) At all periphery edges, and all edges at openings, this contractor shall provide reinforcing angles or channels, welded in place, to provide a firm solid deck throughout.

(d) Provide rubber closures in flutes of deck at partition between Warehouse and Offices.