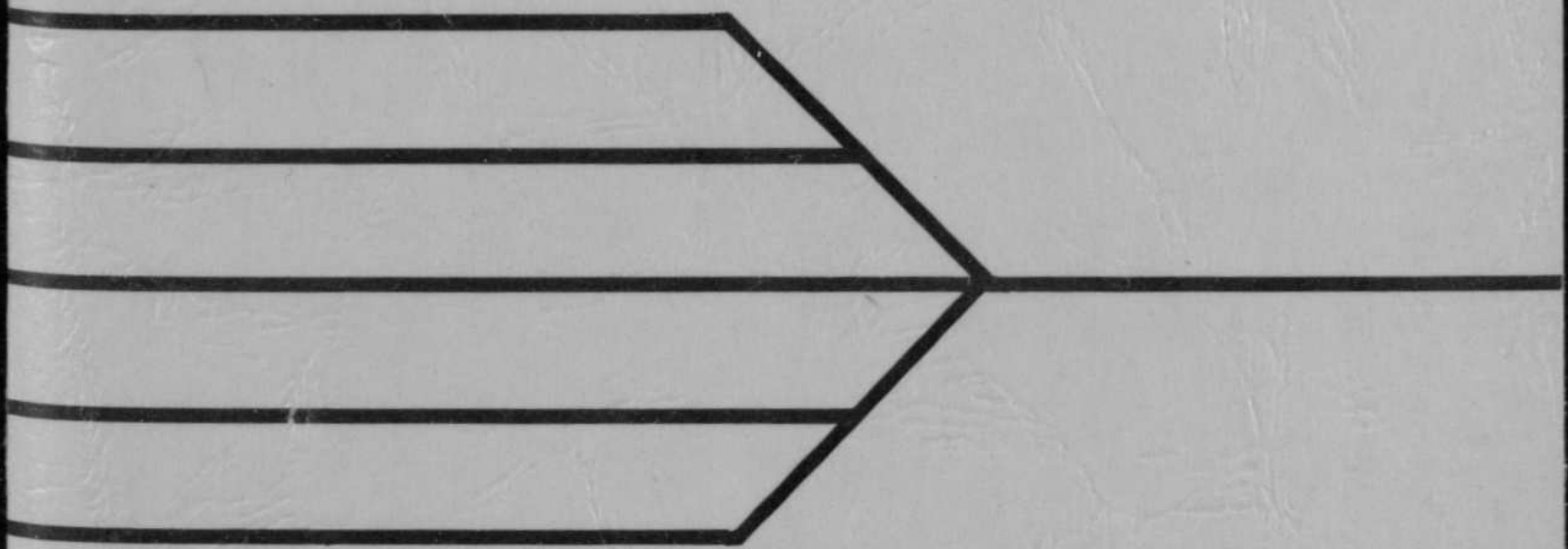


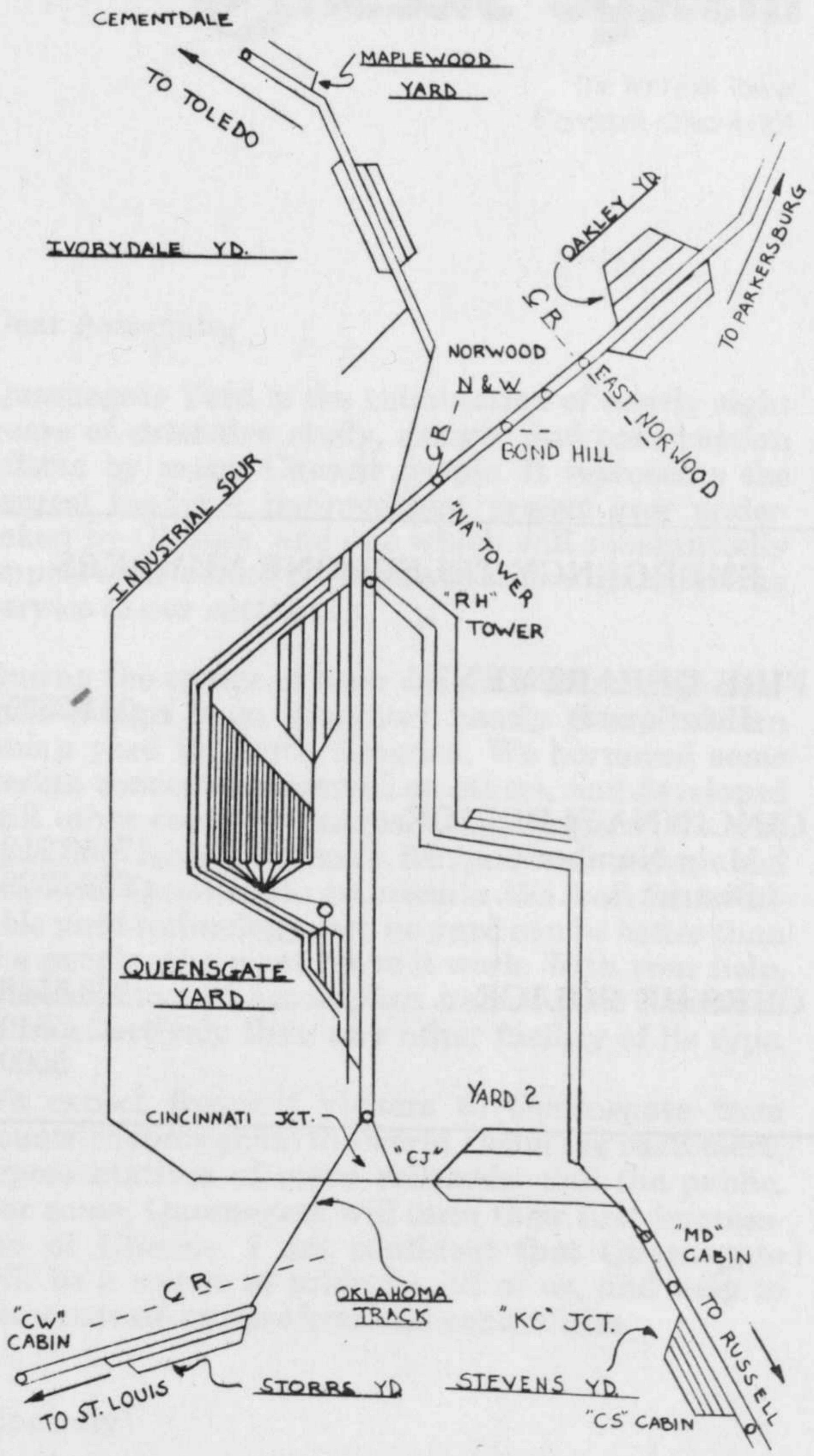


Chessie System

**QUEENSGATE YARD
FIELD MANUAL**

For Information of Employees





SCHEMATIC OF
CINCINNATI TERMINAL

EMERGENCY TELEPHONE NUMBERS

FIRE DEPARTMENT:

(Life Squad) 241-2525

CINCINNATI POLICE:

Main Number 765-1212

District 5 352-3578

CHESSIE POLICE 369-5548

5549

5560

John T. Collinson
President



The Terminal Tower
Cleveland, Ohio 44101

Dear Associate,

Queensgate Yard is the culmination of nearly eight years of extensive study, design, and construction efforts by many Chessie people. It represents the largest roadway improvement project ever undertaken by Chessie, and one which will substantially improve our ability to stay competitive by improving service to our customers.

During the course of their design work, the Queensgate design team inspected nearly every modern hump yard in North America. We borrowed some design concepts, improved on others, and developed still other concepts unique to Queensgate. We also specified high standards for personal safety and comfort. Queensgate represents the best in available yard technology; yet, no yard can be better than the people who must make it work. With your help, Queensgate will accomplish its assigned functions more effectively than any other facility of its type.

We expect frequent visitors to Queensgate from countries throughout the world, including customers, representatives of other railroads, and the public. For some, Queensgate will form their first impression of Chessie. I am confident that Queensgate will be a source of pride for all of us, and help to demonstrate our professional capabilities.

Sincerely

A handwritten signature in cursive script that reads "J. T. Collinson".

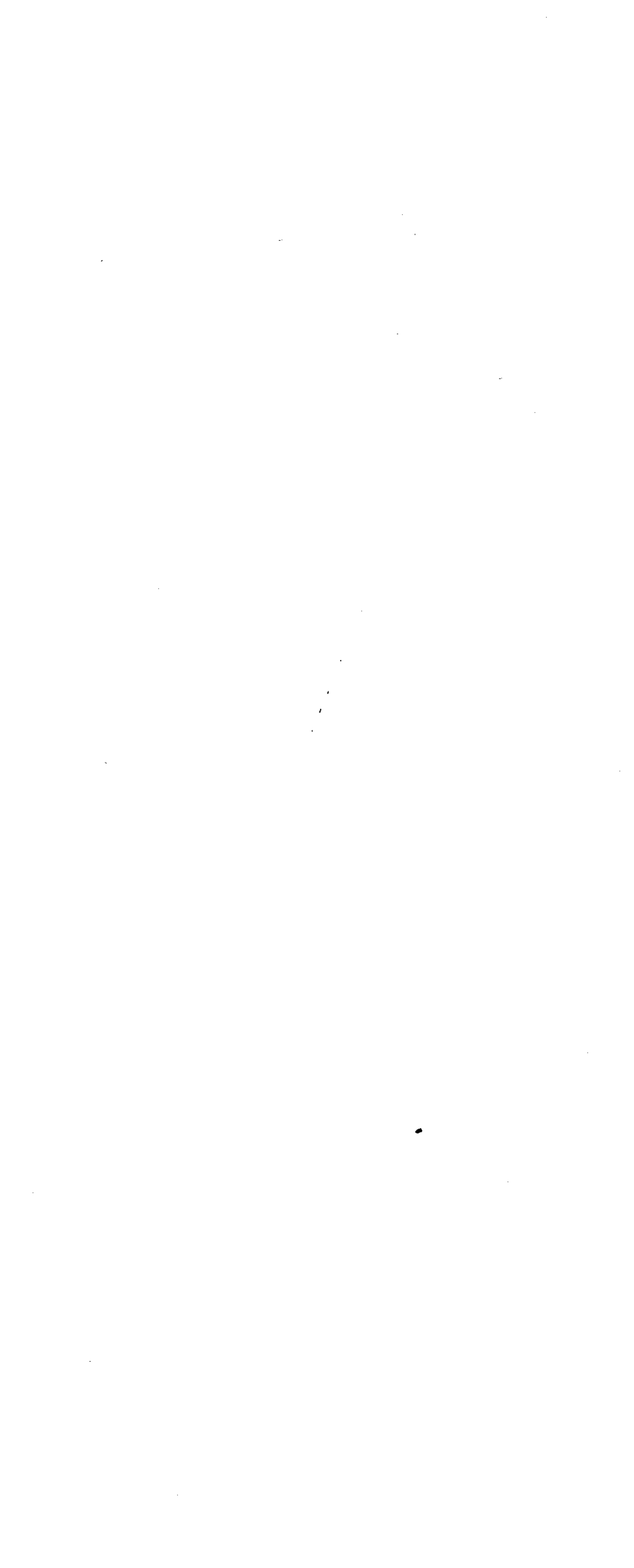


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1.00 PURPOSE

1.01 The purpose of this manual is to acquaint Chessie employees with the functions, facilities, and operating procedures of Queensgate Yard. This information applies to all employees working in or around Queensgate Yard. Nothing in this Manual shall be construed to modify or supersede the Operating Rules, Timetable, Bulletins, Safety Rules, or other Instructions.

2.00 SAFETY

2.01 Safety is of the first importance in the discharge of duty. Obedience to Safety and Operating Rules is essential to safety.

2.02 Queensgate Yard is designed with an emphasis on safety. Built-in safety features include wide track centers for car inspection; interlocked control of blue flags, pushbutton field operation of certain power-operated switches, and interlocks to avoid simultaneous operation from both ends of classification tracks. No feature or operating procedure conflicts with any Safety or Operating Rules, safe job procedures, or proper work practices.

3.00 HOUSEKEEPING

3.01 Regard for personal safety, the safety of fellow employees, pride in ourselves and our company and professional pride require that we maintain our track areas, right-of-way, and other work areas clean and free of debris and refuse. To that end, Queensgate Yard is equipped with numerous receptacles throughout the Yard for discarding refuse, debris and scrap parts.

3.02 It is **ESSENTIAL** that refuse and debris be discarded in receptacles marked "REFUSE AND DEBRIS ONLY" and that scrap parts be discarded in receptacles marked "SCRAP PARTS ONLY." The following are **DO'S** and **DON'TS** concerning good housekeeping:

A. **DO NOT** litter. Refuse, debris, broken tools and other scrap parts must be properly stowed aboard locomotives, cabooses, and on-track and off-track vehicles. **NEVER** throw anything out on the right-of-way. Dispose of all items in appropriate receptacles in the Yard when motion is stopped and it is safe to do so;

B. Any discarded items on the right-of-way should be picked-up and properly discarded;

C. Open fires for burning refuse and debris are prohibited;

D. Lunch rooms and locker rooms are to be maintained in an orderly and clean condition. Food containers, wrappings, leftover food and drinks and other such debris and refuse are to be disposed in receptacles immediately after use; and

E. All working areas in shops, offices, locomotives and cabooses must be kept clean and free of refuse and debris. Any refuse, debris or scrap produced from work activity must be disposed immediately in receptacles.

3.03 Adherence to the basics of good housekeeping will provide safer and more attractive working conditions.

4.00 OPERATING RULES

4.01 Operating Rule 105 will govern train and engine movements on all tracks within Queensgate Yard, except on tracks designated as main tracks or within interlocking limits. See Western Division Timetable and Special Instructions.

5.00 QUEENSGATE - GENERAL

5.01 Queensgate Yard, situated between "CJ" at the south end and "RH" at the north end, is the keystone of the Cincinnati Terminal. The entire complex consists of four sub yards, open tracks, and car and locomotive shops, totalling approximately 70 miles of track.

5.02 Cars are tracked at Queensgate by means of a gravity fed hump under the control of a fully automated Process Control (PC) computer system. This PC system consists of a primary computer and a "hot standby" so that a failure in the primary system will automatically cause the standby computer to immediately assume control. The PC system uses an arrangement of field sensing devices to measure car speeds and calculate their rollability. Based on these calculations, the system automatically controls retarder pressures to enable cars to roll to a safe coupling speed. The PC system also operates automatic hump switches to properly classify cars, and contains the logic for the proper operation of other non-interlocked power-operated hump switches. WHEN AUTOMATIC HUMMING IS IN PROGRESS, THERE ARE NO MANUAL OVER-RIDES EXCEPT FOR EMERGENCY STOP BUTTONS.

5.03 A second system at Queensgate, the Management Information System (MIS), is located in the Terminal Services Center (TSC). Major functions of this system include preparation of

hump lists from consists, maintenance of car inventories for Cincinnati Terminal, generation of car records, classification of cars, preparation and transmission of outbound consists, creation of yard and industrial work orders, and distribution of messages. The PC and MIS systems communicate with each other. MIS passes to PC hump lists for execution by PC, and PC passes to MIS an "as humped report" as each humped car clears the last control point. PC also passes to MIS alarm messages indicating a deviation from normal performance.

5.04 The general sequence for processing cars through Queensgate Yard is:

A. Inbound trains will arrive on one or more receiving tracks as assigned by the HUMP YARDMASTER. TSC will have accumulated as much advance information as possible on inbound trains, but will verify actual consists with a Closed Circuit TV System (CCTV) scan of the incoming train;

B. Arriving trains will be inspected and light repairs made, if possible, while on a receiving track. Meanwhile, TSC will classify the train;

C. When mechanical inspection and clerical work is complete, a hump list is prepared by the Hump Yardmaster and passed from MIS to PC. Trains will be humped according to the priority established by the Hump Yardmaster;

D. Outbound trains will be assembled by moving classified blocks of cars from the classification tracks to a departure track in train standing order;

E. Assembled trains will receive an outbound inspection and brake test prior to departure. Meanwhile, TSC will prepare and transmit an outbound consist; and

F. Outbound trains will depart after completion of mechanical inspection, and with joint approval of Trim Yardmaster and Train Dispatcher.

5.05 Variations will be made to the foregoing sequence as required by train operations.

6.00 SECURITY

6.01 Each employee is responsible for the protection of facilities and personnel from fire, theft, vandalism, trespassing, or other violations to company property and personnel, provided such can be done without risk of personal injury to themselves.

6.02 THE FIRE ALARM SYSTEM at Queensgate Yard consists of these components:

A. PULLBOX STATIONS are located at various points within buildings and at high risk outside areas. Pullboxes within any building are interconnected so that the activation of any one box will sound a local alarm throughout the building;

B. SMOKE DETECTORS are located in normally unoccupied portions of buildings. Activation of a smoke detector will sound a local alarm in the same manner as a pullbox; and

C. CENTRAL ALARM SYSTEM is a computerized fire and security system for all of Queensgate Yard, including the Marshall Avenue office building. The terminal for this monitoring system is located in the fifth floor control room of the Queensgate Administration Building. The operation of any pullbox or smoke detector in Queensgate Yard will create an audible alarm, illuminate a visual indicator, and generate a printout showing the time and location of the activated device.

6.03 The Central Alarm System WILL NOT notify the Fire Department of a fire. It is the responsibility of the Hump Yardmaster or other designated individuals to ascertain the source of the alarm and notify the Fire Department accordingly. Meanwhile, the Hump Yardmaster will take action as necessary to insure that fire equipment is provided access to the fire. The Fire Department must be notified for any and all alarms at the central monitoring terminal.

6.04 FIRE PROTECTION SYSTEMS consist of these components:

A. HYDRANTS are installed at locations, as required, for the protection of buildings. (See Yard Plan at rear of Manual);

B. HOSE CABINETS are installed adjacent to stairwells in the Administration Building. Fire pumps and hoses are installed in the main bays of the locomotive and car shops;

C. FIRE EXTINGUISHERS are installed at various locations in buildings (Employees should be familiar with their location and operation); and

D. HALON 1301 SYSTEMS are installed in computer equipment rooms in the Adminis-

tration Building and Marshall Avenue office building. Fire in equipment rooms is sensed by a series of smoke detectors, and after an audible warning, the room is flooded with Halon gas. Halon will extinguish fires with no toxic effect to humans. However, in the event of fire, personnel in equipment rooms should promptly vacate the area. WATER OR CHEMICAL FIREFIGHTING AGENTS MUST NOT BE USED IN EQUIPMENT ROOMS.

6.05 Equipment room doors must always be kept closed when not in use.

6.06 RESTRICTED AREAS are:

A. Computer rooms in the Administration Building and Marshall Avenue office building are restricted to access by authorized personnel having a legitimate reason to occupy these areas. Control is maintained by a card lock system to gain access. Every entry into these rooms will be monitored centrally and a record automatically kept of the person entering and time of entry. Attempts at unauthorized or forced entry will be alarmed and recorded;

B. Equipment rooms in various buildings for signal and communications equipment will be kept locked. Access is limited to those employees authorized to maintain the equipment in these rooms; and

C. Control rooms are limited to access by Yardmasters and other personnel assigned to these rooms, maintainers when required, supervisors, and others by invitation only.

6.07 POLICE PROTECTION is provided by Chessie Police Officers in the Cincinnati area 24-hours a day. They are commissioned to preserve order upon the Company's premises and to enforce the law. Any employee who becomes aware of anything which requires police attention should communicate with them by the most expedient method.

6.08 Areas of concern to Chessie Police Officers are:

A. VANDALISM - including stoning of employees, trains, signals, etc; malicious damage to property; tampering with equipment or plant; placing obstructions on the track, and other acts which endanger lives, cause damage or interfere with the operation of the railroad;

B. THEFT - including that involving freight, Company property, or property of employees;

C. Exposure to theft, such as open doors on loaded cars, freight on the ground, broken seals, etc;

D. DISORDER - including acts which interfere with the proper conduct of business, cause undue annoyance, or expose any person to needless peril;

E. TRESPASSING - including any unauthorized person on the premises, or riding trains; and

F. EMERGENCIES of all kinds - such as derailments, fires, accidents, etc., which may require crowd control, traffic control, etc. When an emergency requires action by public agencies, such as fire, rescue, or police, these agencies must be notified immediately.

6.09 Employees should never hesitate to get in touch with the Railroad Police even if only to report mere suspicions. Railroad Police will honor requests for confidentiality.

7.00 QUEENSGATE-SUBYARDS AND TRACKS

7.01 Queensgate Yard consists of four sub yards, the Hump Lead and various Open Tracks.

7.02 THE RECEIVING YARD consists of eight tracks for receiving inbound trains, inspecting cars, and performing light repairs prior to humping. Each receiving track, except RNH, has track centers of not less than twenty feet, with paved inspection roads on both sides. Tracks R1-R3 are divided into two sections (North and South) to permit receiving up to eleven trains.

Table 7-1

RECEIVING YARD

<u>Track</u>	<u>Length</u>				<u>Capacity (55 ft. cars)</u>		
	<u>North</u>	<u>South</u>	<u>Total</u>		<u>North</u>	<u>South</u>	<u>Total</u>
R1N/R1S	7850'	3525'	11,375'	=	143	64	207
R2N/R2S	7550'	3625'	11,175'	=	137	66	203
R3N/R3S	7200'	4075'	11,275'	=	131	74	205
<u>Track</u>	<u>Length</u>				<u>Total</u>		
R4	4200'				65		
R5	3825'				70		
R6	4225'				77		
R7	4638'				84		
R8	5063'				92		
RNH	625'				11		

7.03 At the south end of the receiving yard, Lead No. 1 serves R1 through R3 and the West Open. Lead No. 2 serves the West Open and R4 through R8. The "Receiving Yard Throat" at the north end of the five short receiving tracks leads to the hump. RNH is the "no hump" track for setting out cars which must not be humped.

7.04 All receiving tracks are equipped with non-interlocked power-operated switches with field controls. Each receiving track, except RNH, has remote-controlled blue signal protection which can be applied when both end switches are lined away from the track to be protected. Power-operated derails at the intermediate crossovers provide positive protection when only the north or south ends of R1-R3 have blue signals in effect.

7.05 THE HUMP LEAD is a single track from the Receiving Yard Throat to the first power operated switch (the King Switch) leading to the Bowl. Equipment on the Hump Lead consists of a dragging equipment detector, loose wheel and broken flange detector, weigh-in motion sacle, and master retarder. Hump Lead grades are nominally 3% on the ascending side and 4% on the descending side, with the crest directly over the underpass structure.

7.06 THE BOWL (CLASSIFICATION) YARD has fifty tracks numbered B1 through B50. The capacity of these tracks is determined as the distance between the tangent point retarder at the hump end and the exit (skate) retarder at the trim end. Track capacities in 55 ft. car lengths are:

Table 7-2		BOWL YARD			
Track	Length (ft.)	Capacity	Track	Length (ft.)	Capacity
B1	3535	64	B26	2450	44
B2	3075	55	B27	2350	42
B3	2588	47	B28	2275	41
B4	2488	45	B29	2250	40
B5	2450	44	B30	2275	41
B6	2688	48	B31	2163	39
B7	2588	47	B32	2150	39
B8	2463	44	B33	2125	38
B9	2475	45	B34	2025	36
B10	2500	45	B35	1883	34
B11	2513	45	B36	1875	34
B12	2563	46	B37	1900	34
B13	2575	46	B38	1900	34
B14	3350	60	B39	1775	32
B15	3475	63	B40	1788	32
B16	2588	47	B41	1656	30
B17	2475	45	B42	1550	28
B18	2500	45	B43	1538	27
B19	2638	47	B44	1363	24
B20	2438	44	B45	1363	24
B21	2400	43	B46	1325	24
B22	2575	46	B47	1325	24
B23	2288	41	B48	1425	25
B24	2288	41	B49	1388	25
B25	2375	43	B50	820	14

7.07 The fifty Bowl Tracks are divided into seven Groups, each of which is served by a Group retarder, and three Areas, each of which is governed by an Area Indicator Signal. These Area Indicator Signals permit trim moves at the hump end of the Bowl in any one Area while automatic humping proceeds in the remaining two Areas.

Table 7-3

AREA AND GROUP DESIGNATIONS

Area A	Group 1	B1-B6
	Group 2	B7-B13
Area B	Group 3	B14-B21
	Group 4	B22-B29
	Group 5	B30-B36
Area C	Group 6	B37-B43
	Group 7	B44-B50

7.08 Tracks B1-B3 are equipped with yard air and remote blue signals for train departures in either direction. Tracks B13-B16 are equipped with blue signals for northbound departures. These tracks have wide centers with paved roads along one or both sides.

7.09 Every Bowl Track has an automatic power-operated switch with field control at the hump end, and a hand-operated switch at the trim end. Power-operated switches on the hump are equipped with electric snow melters controlled by the Hump Yardmaster.

7.10 THE TRIM/KEY DEPARTURE AREA consists of eight tracks between the trim end of the bowl near Hopple Street and "RH". These tracks are combined switching leads and departure tracks.

Table 7-4

TRIM/KEY DEPARTURE TRACKS

<u>Track</u>	<u>Length (ft.)</u>	<u>Capacity</u>
E1	3200	58
E2	3210	58
L1	3430	62
K1	2790	50
K2	2690	48
L2	2320	42
L3	5110	92
L4	4830	87

7.11 All Trim/Key Departure tracks have yard air at the north end. These tracks also have non-interlocked power-operated switches with field controls at the north end, and hand-operated switches at the south end.

7.12 Tracks E1 and E2 are extensions of bowl tracks B1 and B2, respectively. They may be used alone for northbound departure, or for departures in either direction when used in conjunction with B1 and B2.

7.13 Track L1 is a switching lead serving B3-B13, a departure track for northbound trains when used alone, or a departure track for either direction when used in conjunction with B3.

7.14 Track K1 is a northbound departure track when used alone, or in conjunction with B13 or B14.

7.15 Track K2 is a northbound departure track when used alone, or in conjunction with B15 or B16.

7.16 Track L2 is a switching lead serving tracks B16-B25, and a northbound departure track when used alone or in conjunction with B15 or B16.

7.17 Track L3 is a switching lead serving tracks B19-B50 and the Departure Yard.

7.18 Track L4 is a switching lead serving tracks B26-B50 and the Departure Yard.

7.19 Trim/Key tracks except L3 and L4 have remotely operated blue flag signals which may be applied by the Car Supervisor when the north switch is lined away from the track to be protected. The south end of these tracks is physically protected by a power-operated derail, which is applied when blue signal protection is established.

7.20 THE DEPARTURE YARD consists of three tracks between Hopple Street and Western Hills Viaduct (D1-D3) and three tracks between Hopple Street and Gest Street (D4-D6). Tracks D4-D6 are divided by intermediate crossovers to permit up to nine outbound trains to be assembled simultaneously.

Table 7-5

DEPARTURE YARD

<u>Track</u>	<u>Length (ft.)</u>			<u>Capacity</u>		
D1	5750			104		
D2	4400			80		
D3	4350			79		

<u>Track</u>	<u>Length</u>			=	<u>Capacity</u>		
	<u>North</u>	<u>South</u>	<u>Total</u>		<u>North</u>	<u>South</u>	<u>Total</u>
D4N/D4S	5100'	5100'	10,200'	=	92	92	184
D5N/D5S	5150'	4925'	10,075'	=	93	89	182
D6N/D6S	5263'	4950'	10,213'	=	95	90	185

7.21 Departure Yard tracks are equipped with hand-operated switches, yard air, field-operated blue signal protection, and shove signals. Blue signal protection is established at the intermediate crossovers with hand-operated derails, and crews must be alert to the position of these derails. Track centers in the departure yard are 14 ft. and 18 ft., with paved inspection roads in the 18 ft. centers.

7.22 THE SUPPORT YARD has 19 tracks plus three tracks at the trailer ramp. Its function is to accommodate bowl track overflows, local and industrial cars, hold cars and Southern Interchange. Support Yard tracks are designated as follows:

Table 7-6

SUPPORT YARD

<u>Track</u>	<u>Length (ft.)</u>	<u>Capacity</u>
S1	1600	29
S2	1700	30
S3	1650	30
S4	1550	28
S5	1500	27
S6	1200	21
S7	1200	21
S8	1400	25
S9	1500	27
S10	1550	28
S11	1650	30
S12	1850	33
S13	1950	35
S14	2100	38
S15	2100	38
S16	2150	39
S17	2250	40
S18	2450	44
*S19	550	10

*relief train track

7.23 The Support Yard is equipped with yard air at the south end of S15-S18 for Southern Interchange. Switches are hand-operated. This yard has no paved roadways or provisions for blue signal protection.

7.24 THE CAR SHOP has ten tracks, the first four of which pass through the shop building.

Table 7-7

CAR SHOP

<u>Track</u>	<u>Capacity</u>	<u>Function</u>
C1	6	Inbound heavy repairs
C2	6	Inbound light repairs
C3	5	Inbound light repairs
C4	6	Caboose servicing
C5	12	Materials/Load adjusts
C6	13	Outbound cars
C7	13	Outbound cars
C8	10	Outbound cabooses
C9	7	Outbound cabooses
C10	7	Outbound cabooses

7.25 The normal flow for cars and cabooses is to enter shop tracks from track B50. Shop personnel will move cars from B50 through the shop and outbound tracks for access by a yard crew. Should a car be unfit for humping, it can be set to an inbound shop track by a yard crew.

7.26 Yard crews must have verbal permission from a Car Foreman to enter shop tracks, and may enter only after blue signal protection is removed by shop personnel. Switches in the car shop area must be restored to their original position after use by yard crews.

7.27 LOCOMOTIVE SHOP facilities include a three track shop building, a two track service platform, service track office, wastewater treatment plant, tank farm, and pump house.

Table 7-8

LOCOMOTIVE SHOP

<u>Track</u>	<u>Length (ft.)</u>	<u>Capacity</u>	<u>Function</u>
P1	296	5	Tank Car loading/unloading
P2	228	4	Sand Car unloading
P3	1,134	20	Service Track
P4	1,066	19	Service Track
P5	590	10	Turntable Lead
P6	262	4	Washing Platform
P7	1,032	18	Make-up Track
P8	590	10	Ready Track
P9	616	11	Ready Track
P10	808	14	Shop Track
P11	750	13	Shop Track
P12	884	16	Shop Track
P13	826	15	Material/Load Box Track

7.28 OPEN TRACKS connect the subyards within Queensgate. These tracks are designated East Open, West Open, and Hump Underpass. The East and West Open Tracks, situated on the east and west side of the Bowl Yard, respectively, extend from Gest Street to "RH". The Hump Underpass extends from the Flank Escape to the East Open via the Car Shop Lead. The Flank Escape extends from the south end of Group One Lead to the first crossover between the Hump Underpass and the West Open.

7.29 Open Tracks are generally intended for arriving and departing trains, light engine moves, handling cabooses, and other intra-yard moves as required. Turnouts on Open Tracks are equipped with non-interlocked power-operated yard switches, except at the Locomotive and Car Shops, the north end of the Departure Tracks, and the north end of RNH. MOVEMENTS OVER OPEN TRACKS MUST BE MADE BY AUTHORITY OF THE TRAIN DIRECTOR. Inbound trains having a signal to move into Queensgate from "RH" or "CJ" Interlockers constitutes Train Director authority to occupy the tracks for which a route is lined, unless otherwise directed.

8.00 QUEENSGATE - FACILITIES

8.01 MAIN ROADS serving Queensgate Yard are the East Road and the West Road. These roads extend from the main entrance at "RH" to the Hump Underpass and connect at the underpass to form a loop. The East Road serves the Car Shop and Administration Building, and the West Road serves locomotive and crew facilities. A third main road from "RH" serves the trailer ramp.

8.02 The SPEED LIMIT on main roads is 20 MPH. Portions of these roads are used by car inspection carts, and drivers must exercise care to avoid these carts, particularly when visibility is poor.

8.03 SECONDARY ROADS are for the use of car inspection carts and authorized personnel as required in the performance of their duties. The South Road extends from the Hump Underpass to Gest Street between tracks R8 and the East Open. The Utility Road parallels #3 Main Track between Gest Street and the north end of R1.

8.04 Employees are not permitted to use the south entrance to Queensgate unless authorized by the Terminal Superintendent. SPEED LIMITS on secondary roads are 15 MPH.

8.05 INSPECTION ROADS in the Receiving and Departure Yards, are for the exclusive use of car inspector carts, except in emergencies when their use by others may be authorized by the Terminal Superintendent.

8.06 PARKING is permitted only in areas designated for that purpose. Queensgate Yard has these parking lots:

A. Trim Lot - 34 spaces for: Trim Yardmasters, Trim and Industrial Crews, Outbound Car Inspectors;

B. South Lot - 9 spaces for: Terminal Officers and visitors;

C. North Lot - 122 spaces for: Car Shop Personnel, Administration Building Personnel, Hump Crews and Road and Yard Crews starting at Crew Building; and

D. Shop Lot - 75 spaces for: Locomotive Shop Personnel, Inbound Car Inspectors, Operators and Visitors.

8.07 OPERATING BUILDINGS AT QUEENSGATE YARD will be normally occupied. These buildings and their functions are:

A. Administration Building:

1st Floor - Crew Callers, lunch, locker and toilet rooms for hump crews.

2nd Floor - Women's crew facilities, signal and communications equipment (restricted access).

3rd Floor - Terminal Offices.

4th Floor - Control Room lockers and toilet facilities.

5th Floor - Control Room (restricted access);

B. Crest Building - Hump Foremen;

C. Trim Building:

1st Floor - Lunch, locker and toilet facilities for crews and outbound car inspectors.

2nd Floor - Car Foreman's Office.

3rd Floor - Locker and toilet facilities for Trim Yardmaster, and signal and communications.

4th Floor - Control Room (restricted access); and

D. THE CREW BUILDING is the reporting location for Road and Yard Crews other than Queensgate Yard Crews. This building contains lunch, locker and toilet facilities for both crews and inbound car inspectors. Operator and inbound Car Foreman's offices are also in this building.

8.08 THE CAR SHOP contains three car repair tracks for light repairs, plus a track for washing and servicing cabooses. Each track within the building has two car spots. All shop tracks except C1 are equipped with under floor "rabbit" systems for moving cars through the shop building. Cars are moved on C1 by means of a track mobile or rubber tire crane, but C1 is designed for future installation of a rabbit system.

8.09 Inbound shop cars may be pulled from B50 by the trackmobile with verbal permission of the Hump Yardmaster, and after opening the exit retarders with the field controls provided for that purpose. When open, B50 is automatically blocked from the hump end. If all cars are pulled from B50, the exit retarder will automatically close, otherwise, it must be closed manually.

8.10 THE LOCOMOTIVE FACILITY has these principal buildings and structures:

A. Shop Building:

- (1) Three tracks holding two units each. Tracks P10, P11 are equipped with pits and platforms, and P12 is equipped with a wheel drop table;
- (2) Truck shop and support area;
- (3) Storeroom;
- (4) First-Aid Room and offices for shop foremen and stockmen;
- (5) Shop locker, lunch and toilet facilities; and
- (6) Offices for Locomotive Department, Materials Management Department and Road Foreman of Engines;

B. Service Tracks:

- (1) Two-track service platform to service up to four units on each track. Platform is equipped with fuel, lube oil, compressed air, coolant and electricity;
- (2) Standing facility serving two tracks immediately ahead of service platform;
- (3) Service building containing foremen's offices, lockers, laboratory and storage;
- (4) Fuel tank (400,000 gal.), fuel and oil loading/unloading facilities, and pump house;
- (5) Wash rack;
- (6) Turntable; and

C. Wastewater Treatment Plant:

- (1) Influent tanks for dirty water from service track, shop buildings, washrack, turntable pit and general area of locomotive facility;
- (2) Chemical tanks and building for treatment process;

- (3) Treated wastewater tank for locomotive and caboose washing; and
- (4) Sludge basins.

8.11 Engine Crews will handle their own locomotives between the locomotive facility and inbound or outbound trains. Inside hostlers will move locomotives within the locomotive facility for servicing and consist makeup.

8.12 For units not equipped with Chessie radio frequencies, talk-back speakers are provided at each exit from the locomotive facility to obtain permission from the Train Director to occupy an Open Track.

9.00 SUPERVISORY AND OPERATING POSITIONS

9.01 The operation of Queensgate Yard is under the immediate supervision of an Assistant Terminal Trainmaster, located in the fifth floor Control Room of the Administration Building. Other supervisory and operating positions in this control room are:

A. **HUMP YARDMASTER** is responsible for the supervision of hump crews. His duties include assignment of receiving tracks, yarding of inbound trains, assignment of blocks for classification tracks, establishment of humping priorities, supervision of the humping operation, and control of the use of all open tracks. He will perform short-range planning, while others under his supervision are executing plans as they become operative;

B. **TRAIN DIRECTOR** has remote control of all power-operated switches in Queensgate Yard, including those at "CJ" except automatic hump switches. He also has supervisory control of entrance switches at "RH", such that he and the Train Dispatcher must agree on the position of a switch. No moves may be made into or out of Queensgate without the concurrence of both the Train Director and Train Dispatcher. This position is responsible for the execution of moves as planned by the Hump or Trim Yardmasters. His duties include routing inbound trains into the proper track, lining away switches in the receiving yard and key departure area prior to establishing blue signal protection, control of train and engine moves on open tracks, and establishing a route for departing trains;

C. **CAR SUPERVISOR** is responsible for coordinating all train-yard car inspection and repair activities. His duties include appli-

cation and removal of blue signal protection in the receiving and Key Departure Areas; assignment of inspection work in accordance with operating priorities and effective utilization of Carmen; coordination with the Car Shop for inbound and outbound cars; and record keeping as required. Car Foremen in the field will report to the Car Supervisor;

D. HUMP INVENTORY CLERK supports TSC in maintaining accurate car inventories by visual inspection and close coordination with the Hump Yardmaster and Hump Crews. His duties include adjusting MIS inventories as required by errors in the Hump List, trim moves, and work orders. Other duties are to observe light weights of revenue weighers and provide others in the Administration Building with inventory data as required. If there is no Inventory Clerk in the Trim Building, the Hump Inventory Clerk will handle inventory functions for all of Queensgate Yard; and

E. HUMP FOREMAN-Queensgate Yard is designed to operate with two Hump Crews, with each crew having its own Hump Foreman. The PC console in the Crest Building has dual controls and communications devices to permit humping by either Hump Foreman. The principal duties of the Hump Foreman are to control the activities of their respective crews, and insure that cars are humped exactly in accordance with the Hump List displayed on their dynamic CRT. Should deviations occur between the Hump List and cars approaching the crest, the Hump Foremen have controls on their console to make the necessary corrections. Other important controls on the Hump Foreman's console include hump and trim signal aspects, hump engine speed, track blocking and alarm acknowledgements. Hump Foremen also have supervisory controls to prohibit moves between B1 and B3 and the Flank Escape.

9.02 The two positions located in the fourth floor control room of the Trim Building are:

A. TRIM YARDMASTER supervises the activities of Trim Crews and other Yard Crews working in the Trim/Departure Areas and the Support Yard; and Industrial Crews working in the Queensgate area. His overall responsibility is to assemble classified blocks of cars into outbound trains. Specific duties include assignment of tracks in the Departure Areas and Support Yard, coupling and trimming of Bowl Tracks, moving cars from the Bowl to Departure Areas, and reswitch local and industrial cuts as required. When working in Bowl

Tracks, the Hump and Trim Yardmasters must carefully coordinate their work. The Hump Yardmaster will establish priorities for access to the Bowl Tracks; and

B. TRIM INVENTORY CLERK assists TSC and the Trim Yardmaster in maintaining accurate inventories as moves are executed in the Trim and Departure Areas. Unlike the hump end of the Bowl, there is no provision here for automatic movement of inventory records. By observation and communications with the Trim Yardmaster and TSC, the Trim Inventory Clerk must verify that work orders for Trim/Departure and Support Areas are properly executed and move inventories accordingly. He will also assist the Trim Yardmaster by providing inventory data as required.

10.00 POWER-OPERATED SWITCHES

10.01 Queensgate Yard is equipped with three types of power-operated switches. Interlocked switches have even numbers, non-interlocked switches have odd numbers, and automatic hump switches are numbered according to the tracks they serve:

A. Interlocked switches are located within the interlocking plants at "CJ" and "RH". These switches are equipped with electrically operated dual control switch machines. "RH" is controlled by the Train Dispatcher, and "CJ" is controlled by the Train Director at Queensgate. Movement through interlocked switches is governed by Operating Rules 605-670 and other Operating Rules pertaining to interlocking;

B. Non-interlocked switches are located on receiving tracks, open tracks, and the north end of the trim/key departure area. No signal protection is provided on these air-operated switches, but their operation immediately ahead of or beneath a locomotive or car is prevented by electronic presence detectors. Switch position indicator lights provided at each switch have these indications:

Green - Normal
Yellow - Reverse

The Train Director may relinquish control of non-interlocked power switches to the field as conditions require. In this case, switches may be operated by means of a spring-loaded toggle switch mounted near each switch machine. Care must be exercised to keep feet

or other objects away from the switch points, and to ascertain that the switch point is in its proper position with the indicator lamp illuminated before moving through the switch; and

C. Automatic Hump Switches are identical to non-interlocked power switches, but without indicator lights. These switches are controlled by a PC computer when in the hump mode, or by the Hump Foreman when in the trim mode. When in area mode, hump switches north of group retarders are field controlled.

11.00 SIGNALS

11.01 Interlocking signals governing movements through "RH" and "CJ" display aspects in accordance with Operating Rule B-280.

11.02 Hump Signals are displayed near the crest of the hump in a southward direction. The indication displayed on the hump signal is repeated on the crest console, Hump Yardmaster's console, and in the cab of the equipped hump engines when under control of the PC system. Hump signal aspects and indications are:

Table 11-1

HUMP SIGNAL

Red	-	STOP
Flashing Red	-	Pull South
Yellow	-	Hump Automatic
Flashing Yellow	-	Hump Manual
Green	-	Approach Hump

11.03 TRIM AND AREA SIGNALS govern moves between any track in the Bowl and the hump crest. The Bowl is divided into three areas.

Table 11-2

AREA DESIGNATIONS

Area A	Bf-B13
Area B	B14-B36
Area C	B37-B50

11.04 Each Area is governed by an Area Indicator Signal displaying yellow when trim moves are permitted with an Area, or red when trim moves are not permitted within an Area. When an entrance switch to an Area is blocked, Area moves may be permitted in one Area with simultaneous humping in other unprotected Areas.

11.05 Crews may work in the clear in any Bowl Track when the Area Indicator displays red, provided the hump end of that track is blocked through the PC or MIS systems.

11.06 The Trim Signal, located at the Crest, consists of three sets of two vertical light units. Each set of light units, which corresponds to an Area, may display a yellow or red aspect. Trim signals display these aspects:

Table 11-3

TRIM SIGNAL

RED	- Movements are not permitted between the designated areas and crest.
YELLOW	- Movements are permitted between the designated area and crest.

11.07 Only one yellow trim aspect may be displayed at any given time. When a trim signal displays yellow, the corresponding Area Signal will display red. The two signals are to be read together as "yellow over red", thereby permitting moves from the designated Bowl Track to the Crest.

11.08 **SHOVE SIGNALS** are located at the north end of each of the six Departure Tracks. Each shove signal being visible in both directions. The purpose of shove signals is to enable cars to be shoved into the north end of the Departure Yard without having to ride the lead end of the cut. Shove signals will display these aspects:

- A. On tracks D1-D3:
 - LUNAR WHITE LIGHT** - Cut is not at end of track;
 - DARK** - Cut is at end of track; and
- B. On tracks D4-D6:
 - TWO VERTICAL LUNAR WHITE LIGHTS**
Cut is north of intermediate crossovers;
 - ONE LUNAR WHITE LIGHT** - Cut is south of crossover, crossover lined reverse, or a blue signal derail is applied; and
 - DARK** - Cut at crossover if lined reverse, at derail if applied, or at south end of track.

11.09 Shove signal circuits are arranged to allow sufficient space for five locomotive units when a cut is shoved to the "end of track".

11.10 **BLUE FLAG SIGNALS** are located at both ends of every track for which blue signal protection can be applied remotely or in the field. Each signal is bi-directional and mounted between the rails. These signals display two aspects:

YELLOW - Blue signal protection not in effect; and
BLUE - Blue signal protection in effect.

11.11 PINPULLER SIGNALS are located on each side of the Hump Lead, with duplicate information displayed on each signal. Each signal consists of four rows of two white lights plus one red light. The rows indicate the size of the next four cuts (one or two cars), and index as cuts are humped. A red light after the cut size indicates that special instructions are required before proceeding. All red lights will be illuminated when the hump signal displays STOP.

11.12 An alarm bell will sound for two seconds when the hump signal is placed at STOP.

11.13 Emergency stop buttons are located on the mast of each pinpuller signal. Operation of these buttons will place the hump signal at STOP, and also stop a hump engine when in "Tower Automatic".

12.00 DETECTION EQUIPMENT

12.01 Equipment for the detection of broken flanges, loose wheels, and dragging equipment is located on the hump lead. Actuation of this equipment will cause hump and cab signals to display STOP, and stop a hump engine when in "Tower Automatic".

12.02 When this equipment is actuated, the offending car must not be humped until inspected by a car inspector. To resume humping, a Hump Foreman must reset the hump signal.

13.00 EXIT RETARDERS

13.01 Each Bowl Track is equipped with an exit retarder near the trim end of the track. These retarders are designed to stop free rolling cars in the Bowl to prevent fouling trim leads. Exit retarders are normally in the closed position, but may be opened by the Trim Yardmaster, or by crews in the field with the Trim Yardmaster's verbal permission.

13.02 Exit retarders are interlocked through the PC computer to prohibit access to a Bowl track when its exit retarder is open. If all cars are pulled from the trim end of a Bowl track, the exit retarder will automatically close, thereby releasing the track for humping. Otherwise, the exit retarder must be closed manually.

14.00 SCALE

14.01 An electronic weigh-in-motion scale is located between the crest and master retarder. This scale will automatically provide revenue weights for all single car cuts, and weights for tonnage purposes for multiple car cuts. Car weights will be passed from the Scale to MIS via PC. Tare weights for revenue weighers will be available from UMLER, but must be verified by the Inventory Clerk at the hump. Operation of the scale will be transparent to hump crews, except that the Hump Foreman will have a display indicating revenue weighers to insure single car cuts.

14.02 Overweights and eccentric loads will be identified and can be routed to an alternative track, if desired, by the Hump Yardmaster.

15.00 COMMUNICATIONS SYSTEM

15.01 The Queensgate communications system consists of radios, talk-back speakers, CRT communications units, intercom units, and telephones. All components of the communications system are interconnected through a microprocessor communications switching system to permit access to the various systems through the same device, and to provide the flexibility to meet changing requirements.

15.02 RADIO will be the primary means for communications in the field. Channels assigned to Queensgate Yard and vicinity are:

Table 15-1

RADIO CHANNELS

<u>Channel</u>	<u>User</u>	<u>Monitored by</u>
1	End to End	
2	Dispatcher	
3	Yard	Hump and Trim Yardmaster, Train Director
4	"NA"	
5	Hump Crews	Hump Foreman, Hump Crews
C	Car Inspectors	Car Supervisor, Car Inspectors, Car Superintendent
C1	Car Shop	Shop Personnel
T1	Trim Crew #1	Trim Crew #1
T2	Trim Crew #2	Trim Crew #2
T3	Trim Crew #3	Trim Crew #3
8	Engineering	

15.03 Portable radios will be issued to hump crews at the Crew Callers' Office, to trim crews at the Trim Building, and to other Yard and Road Crews at the Crew Building.

15.04 TALKBACK SPEAKERS are strategically located throughout Queensgate Yard as a supplement to radios, or for use by Crews not equipped with radios.

Table 15-2

TALKBACK LOCATIONS

<u>No.</u>	<u>Location</u>	<u>Access</u>
1	CJ	Hump Yardmaster
2	South Rec.	Hump Yardmaster
3	South Dep.	Trim Yardmaster
4	Rec. Throat	Hump Yardmaster
5	Mid Dep.	Trim Yardmaster
6	Pinpuller	Hump Yardmaster
7	Service Truck	Hump Yardmaster
8	Flank Escape	Hump Yardmaster
9	Outbound Shop	Car Shop
10	Middle Shop	Car Shop
11	Inbound Shop	Hump Yardmaster
12	So. Interchange	Trim Yardmaster
13	North Dep.	Trim Yardmaster
14	South Supt.	Trim Yardmaster
15	North Rec.	Hump Yardmaster
16	North Supt.	Trim Yardmaster
17	No. Interchange	Trim Yardmaster
18	RH	Trim Yardmaster
19	Colerain Ave.	Hump Yardmaster

15.05 Talkbacks having access to the Hump Yardmaster will be identified by an "H", those having access to the Trim Yardmaster will be identified by a "T", and those having access to the car shop will be identified with a "C". Hump and Trim Yardmasters will have access to any of the 19 talkbacks.

15.06 COMMUNICATIONS UNITS are provided for all control room personnel except inventory clerks. These units permit access to all communication modes through a single device, including intercom lines. The CRT display has features which include identification of incoming calls, call forwarding, selection of call priorities, and directory information. Positions having CRT communications units have separate back-up telephones, should the primary system fail.

15.07 INTERCOM UNITS are provided for inventory clerks, TSC, car foremen and others. These units have five buttons for direct access to designated persons, plus a key pad for access to other intercom numbers. Positions equipped with intercoms also have telephone desk sets, as required.

16.00 CAR INSPECTION

16.01 INBOUND trains and cars arriving at Queensgate will be inspected in the Receiving Yard, except that occasionally trains may be inspected in the Departure Yard or on Main Tracks, as conditions warrant. Inbound Car Inspectors are headquartered and dispatched from the Crew Building. Duties of Inbound Car Inspectors include performing "A" and "C" inspections, bleeding cuts, and making light repairs to the extent possible.

16.02 OUTBOUND trains and cuts will have air hoses connected and brake tests made by car inspectors, headquartered at the Trim Building.

16.03 If conditions warrant, Inbound Inspectors will be assigned to outbound trains and vice versa. Inspection work will be supervised by Car Foremen, but the assignment of work, and effective utilization of inspectors is the responsibility of the Car Supervisor. Inspectors must promptly report any car given a shop tag to the Car Supervisor, who will arrange to have the car reclassified.

16.04 INSPECTION VEHICLES of two types will be provided to eliminate the need to walk trains for bleeding and inspection. Type 1 is a light duty vehicle capable of operating on all inspection roads for inspection, bleeding and connecting air hoses. Type 2 is a heavier vehicle, equipped with repair tools and parts for use in the receiving yard only. These vehicles will be maintained in the Car Shop, but may be serviced at either the Car or Locomotive Shop.

16.05 BLUE SIGNAL PROCEDURES consist of the following methods, depending on the track to be protected:

A. Remote blue signal protection is provided on all receiving tracks and trim/key tracks except L3 and L4. The Car Supervisor may apply blue signal protection on these tracks from his console, but if car inspectors are assigned to a protected track, he may not remove this protection until authorized to do so by the assigned car inspectors;

B. Remote blue signal protection also applies to Bowl Tracks B1-B3 and B13-B16 for trains occupying one of those tracks, as well as a key departure track. However, before blue signal protection is applied, any intermediate cross-overs providing coupling access must be lined normal and a carman's lock applied. When

inspection on these tracks is completed, the assigned car inspectors must remove their switch locks before authorizing blue signal protection to be released;

C. To apply blue signal protection on B1-B3, B13-B16 only, the assigned Car Inspector must first line the trim end switch away from the track to be protected, apply a carman's lock, and leave a blue signal. Both ends of the cross-overs must be lined and locked where necessary. He must then open the exit retarder of the track to be protected, if not already opened by the Trim Yardmaster. The assigned Inspector may then request the Car Supervisor to apply blue signal protection. The sequence is reversed to remove blue signal protection on the seven Bowl Tracks so equipped;

D. Field blue signal devices are provided in the Departure Yard. Car Inspectors here must protect themselves by lining and locking switches away from the track to be protected, or apply and lock derails as required. When a track is physically protected, a blue signal may be illuminated by a carman's keylock device mounted adjacent to the switch stand or derail;

E. Car and Locomotive Shop personnel will protect themselves with the blue signals and derails provided for that purpose; and

F. Manual blue flag/signal procedures apply to all tracks within Queensgate Yard not described in subparagraphs 16.05 (A—E) above.

16.06 Car Inspectors must first obtain verbal permission from the Car Supervisor before establishing blue flag/signal protection on any track within Queensgate Yard.

17.00 YARD CREWS

17.01 Queensgate Yard will normally operate with two Hump and three Trim Crews, but crew assignments will vary as conditions warrant.

17.02 To maintain the integrity of yard inventories, most work performed by Yard Crews will be based on written yard or industrial work orders issued from MIS. These orders will be available to Queensgate crews at the Crest Building, Trim Building, CJ Office, or the field printers located near Hopple Street and RH. Crews will be directed to the appropriate location to receive work orders.

17.03 HUMP CREWS will report to work at the Administration Building, where facilities are provided for that purpose. Their duties include actual humping of cars, trim moves at the hump end of the Bowl, switching hump cuts in the Receiving Yard as required, pulling outbound cars from the Car Shop, and handling cabooses as required. Normally, one crew will be humping, while the other hump crew is preparing the next cut, or handling miscellaneous assignments. One or two members of the hump crew will serve as pinpullers, as directed by the Hump Foreman.

17.04. TRIM CREWS will report to work at the Trim Building. Their duties include coupling Bowl Tracks, assembling outbound trains in departure tracks, handling Southern Interchange, placing cabooses on outbound trains, and switching in the Support Yard.

17.05 INDUSTRIAL AND TRANSFER CREWS starting at Queensgate Yard, but working in other areas of the Terminal, will start at either the Trim Building or Crew Building, depending on the assignment. Starting locations will be determined by the Terminal Superintendent.

18.00 HUMP LOCOMOTIVES

18.01 Five SD-20-2 Locomotives, Numbers 7700-7704, are assigned to hump service at Queensgate Yard. The normal consist for each Hump Crew is two units, with the fifth unit assigned for back-up.

18.02 Units 7700, 7702 and 7704 are equipped with cab signals and PC speed control equipment. When in the automatic mode, cab signals and locomotive speed are controlled by the PC computer, based on a speed selected by the Hump Foreman, or by the computer. When humping in the manual mode, the hump locomotives will operate at a speed controlled by the enginemen. Regardless of mode, enginemen always have full control of their locomotives. All five units are also equipped with a hump control rehostat.

18.03 Failure of a locomotive to receive and verify any transmitting cab signal causes the cab signal of that locomotive to display STOP. Should the cab signal of the locomotive go blank when in the automatic mode, this blank aspect shall also mean STOP, unless superseded with verbal instructions from the Hump Yardmaster or Hump Foreman.

19.00 HUMPING PROCEDURES

19.01 When the Hump Yardmaster issues instructions to shove a train from the receiving yard to the crest and initiate humping, a Hump Foreman will take these steps:

A. Depress the appropriate cab signal button on his console to select the locomotive to be placed under automatic control;

B. Push the Approach Hump Signal Indicator button. The PC System will verify that a switch list is available, that the control system is functioning properly, and that switches to the hump are properly lined. (The system is unable to ascertain that the locomotive being addressed is on the proper track.) When verification is complete, the system will display an approach hump indication on the hump signal and a "hump fast" indication on the cab signal of the locomotive;

C. An Approach Hump indication on the hump signal and a "hump fast" indication on the cab signal will bring the cut toward the hump until the hump approach track circuit is occupied. The hump and cab signals will then display Hump Automatic and Hump Slow, respectively, provided all Trim and Area Signals display red;

D. If a yellow Area Signal is displayed, the Hump Foreman may activate automatic humping by setting the hump and cab signals to Hump Automatic and Hump Slow, respectively. The hump and cab signals will go to STOP when a car destined for that area reaches the crest;

E. If a trim signal is displayed, hump and cab signals will go to STOP when the approach circuit becomes occupied;

F. When hump and cab signals go to STOP for any reason, a Hump Foreman must acknowledge the indication by pushing the STOP button before any other aspect can be displayed; and

G. After Hump List is fully executed, pushing the "End List" button clears the system for the next list.

19.02 PC System operating details are provided in a separate Queensgate Operations Manual.

20.00 ROAD TRAINS AND TRANSFERS

20.01 Unless otherwise provided, yard and

transfer crews operating out of Queensgate will report for duty and be relieved at the Crew Building. An operator there will issue train orders, control the use of radios, and handle time slips. Also, Bulletins, Notices, Call Boards, and other pertinent information is available there.

20.02 Transportation will be provided between the Crew Building and rest facilities for away from home crews.

20.03 INBOUND TRAINS arriving at Queensgate will normally have an inbound route to the proper receiving track lined by the Train Director. However, inbound trains approaching "RH" and "CJ" must verbally confirm their track assignments with the Train Director or Hump Yardmaster. Trains must also have the Train Director's permission to occupy an Open Track. When radio is not available, communications may be made by talkback speaker or telephone.

20.04 After a train is properly yarded, engine-men must handle their power to the locomotive facilities or designated tracks, in accordance with instructions from the Train Director.

20.05 It is the responsibility of inbound conductors to insure that waybills are left with the operator at the Crew Building, unless other arrangements are made by the Hump Yardmaster.

20.06 OUTBOUND crews will handle their own locomotives from a ready track to their trains, when so instructed. Locomotives may not enter an Open Track without permission of the Train Director, who will authorize a route to the Departure Area.

20.07 Waybills will be picked up by the conductor at the Crew Building, if available at the call time. Otherwise, Waybills will be delivered by a TSC messenger.

20.08 After an outbound train is inspected and brake tests made, the Car Inspector will notify the Engineer, Conductor, and Car Supervisor that the train is ready to depart. Trains may depart after obtaining authority from the Train Director, who will have concurrence of the appropriate Yardmaster and Train Dispatcher.

20.09 Crews of trains leaving the Departure Yard must line their own hand-operated switches, but are not required to restore them to their original position.

21.00 GLOSSARY

ACTIVE HUMPS LIST — A hump list is considered to be active from the time of the first car being displayed on the dynamic CRT until the end list is completed for that list.

ALTERNATE TRACK ASSIGNMENT — That track assignment that becomes the primary track when the originally assigned primary track is no longer available for humping.

AS-HUMPED — The status attained by a car when its last axle has reached a classification track and is no longer under PC control.

AS-HUMPED REPORT — A report sent to MIS from PC telling MIS into what tracks cars from an active hump list were actually placed.

BACKUP MODE — A yard mode in which a reverse movement cab signal is sent to the hump engine.

BLUE FLAG — A railroad procedure used to physically indicate that entry into a given track is prohibited. (Usually a large blue "flag" or blue signal is used.)

CAB SIGNAL — A signal transmitted by radio from the PC System and displayed on board a hump engine.

CAR CONTROL — The process of automatically routing cars by controlling their speed and destination. Car control begins when the second axle passes the hump speed wheel detector on the crest and continues until the car reaches its final Bowl track destination.

CAR SPACE — (Usually referred to in feet or average car lengths). Distance remaining on a Bowl Track that is still available for "to-be-humped" cars.

CAR TRACKING — Sometimes synonymous with car control. The process control system software to track, route and regulate a hump car (cut).

CATCH UP — A condition that results when two cars simultaneously occupy the same switch or retarder track circuit, i.e., the track circuit did not go unoccupied between the two rolling cars.

CLASSIFICATION — The sorting of cars based on their destination.

CLEARANCE POINT — The point on a track at which there is sufficient space to permit free movement of cars on an adjacent track.

CPU — Central Processing Unit. That portion of a computer where instructions are executed.

CRT — A video device for displaying computer inputs/outputs.

CUT — A group of one or more coupled cars.

CUT LENGTH — The measured distance from the first coupler to last coupler of a cut.

CUT LENGTH RADAR — Used with other field sensing devices and computer software; this radar device is used to determine a car (cut) length.

DATA LINK — A communications channel between two different computer systems.

DATA LINK MODE — When data link communication has been established between two different computer systems and both are capable of communicating via the data link, the systems are in data link mode with respect to one another.

DISTANCE TO GO — The last valid measured distance from the designated measuring point up to the nearest stationary car (or track shunt) on a given track minus the lengths of cars currently rolling on the track.

DISTANCE TO COUPLE — The distance that a cut must travel on a given Bowl Track to couple with the car ahead.

DYNAMIC HUMP DISPLAY — The CRT display that shows the standing order of up to the next ten cars to be humped. Additional classification yard information may also be displayed on the remaining portion of this display.

EXIT RETARDER — A control device used to prevent free rolling cars from rolling beyond the trim end of bowl tracks.

FAILOVER — The process of automatically switching control from the on-line CPU to the hot-standby CPU.

FIELD SENSOR — The whole class of field detection equipment, including track circuits, presence monitors, wheel detectors, radar, photocells, etc.

FREE ROLLING CAR — An uncoupled car moving between the apex of the crest and the point of no motion within the yard.

GROUP — A set of Bowl Tracks fanning out from one track with a retarder at the entrance.

GROUP BLOCK — A hardware and/or software lock to prevent cars from entering a group. The cars are switched away.

GROUP RETARDER — A speed control device at the entrance to each group of Bowl Tracks.

HOLD TRACK — A classification yard track that has been assigned to receive cars that require further processing or sorting.

HUMP LIST — A list of cars with pertinent information, including code and/or Bowl Track assignments, for each car.

HUMPING — The process of pushing and detaching cars so that they begin to roll freely down an inclined slope through various devices to provide classification track switching and deceleration as needed.

LSR — Locomotive Speed Regulation. Refers to the system for remote controlled stop and forward speed regulation of a hump engine.

MASTER CLASS TRACK TABLE — A table containing all Queensgate classifications and their respective track assignments. This table is maintained in the MIS computer.

MASTER RETARDER — A speed control device located near the crest for initial speed control of all cars being humped.

MIS — Management Information System. The computer system responsible for maintaining yard inventories, receiving and transmitting consists, and other administrative functions.

PC — Process Control. The computer system which uses field input and manipulates field output to automatically control the hump operation.

PHOTO-CELL — A photo-electric sensing device used near the crest to detect the front coupler of freight cars so that a car length measurement may be initiated.

PRESENCE MONITOR — A current loop device which shows occupancy when its inductive properties are changed by a car occupying a given section of track.

PRIMARY TRACK ASSIGNMENT — The first choice destination Bowl Track derived from a classification code for a specific car.

SOFTWARE — A set of instructions which tell a computer what to do.

STALL — If a freight car (cut) fails to traverse the distance between two field sensors within a calculated time limit, then it is considered to be stalled.

STALL PROTECTION — Software control system logic that detects a stalled car (cut) in the hump area and aligns the switches leading toward the car in such a manner as to protect it from following cars.

TANGENT POINT RETARDER — A speed control device near the beginning but starting past the clearance point of the straight section of a Bowl Track.

TRACK BLOCK — A hardware and/or software lock which prevents cars from entering a given track. The entrance switch is positioned away from the track to be blocked.

TRACK FULL — A condition which exists when a car is detected by car space equipment and software logic to be within some predetermined distance of the clearance point.

TRACK NEAR LIMIT — A condition based on regular car space equipment readings and software control system logic to indicate the inability of a track to accept more than a predefined number of average length cars.

TRIM MODE — A computerized classification yard mode used for indicating to the control system software that a non-tracking of movement in this area is to be applied.

WEIGH RAIL — A weight sensing device capable of determining the following weight classes: Light, Medium, Heavy, Extra Heavy.

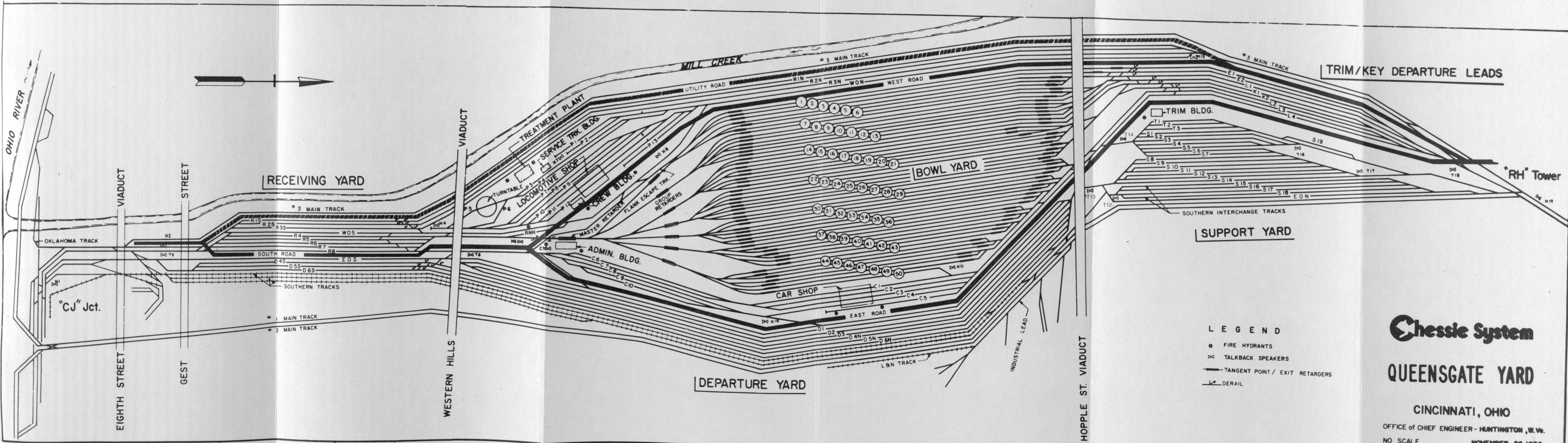
WEIGHT CLASSES — The terms used to refer to a range of car weights for process control:

Light 14 to 35 Ton
Medium 35 to 52 Ton
Heavy 52 to 110 Ton
Extra Heavy ... 110 Ton and Over

WHEEL DETECTION — An electronic sensing device which senses a passing wheel.

WORKING CLASS TRACK TABLE — An extraction from the Master Class Track Table containing classifications and track assignments being used in the current hump list.

YARD MODE — The particular state or condition of a freight classification yard, i.e., full hump, full trim, backup, etc.



TRIM/KEY DEPARTURE LEADS

SUPPORT YARD

DEPARTURE YARD

RECEIVING YARD

LEGEND

- FIRE HYDRANTS
- ⊗ TALKBACK SPEAKERS
- TANGENT POINT / EXIT RETARDERS
- ⊥ DERAIL

Chessie System

QUEENSGATE YARD

CINCINNATI, OHIO

OFFICE of CHIEF ENGINEER - HUNTINGTON, W. Va.

NO SCALE

NOVEMBER 26, 1979