CLARK COUNTY BUILDING DIVISION

IN THE MATTER OF A COMPLAINT FILED AGAINST

Converse Consultants Southwest, Inc.:

and

Scott T. Edberg;

and

Joseph G. Laurente;

by

David L. Durkee, PE Principal Engineer for the Clark County Building Division

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS OF THE HEARING OFFICER

GENERAL INFORMATION

- In accordance with the provisions of the Clark County Building Administrative Code, Section 22.02.560 (2), the Building Official designated a Hearing Officer to conduct an investigation of the facts that are the basis of a complaint filed with the Hearing Officer by David L. Durkee, Principal Engineer of the Department of Building. A copy of the complaint and supporting documentation was sent to Converse Consultants, Scott Edberg, and Joseph Laurente by Certified Mailing on January 29, 2009.
- On February 9, 2009, Certified Mailings were sent to Converse Consultants, Scott Edberg, and Joseph Laurente by the Hearing Officer advising of a Hearing to be held on the matter of the complaint filed by Mr. Durkee scheduled for March 27, 2009.
- On March 10, 2009, a request for continuance was received by the Hearing Officer from Converse Consultants. The request for continuance was granted and the Hearing was rescheduled for May 8, 2009. Meeting notices were again Certified Mailed to Converse Consultants, Scott Edberg, and Joseph Laurente.

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- On May 2, 2009, Converse Consultants requested a second continuance of hearing. Upon receipt of a follow-up email from Deputy District Attorney Clifford Jeffers on May 4, 2009 explaining the basis of the Converse Consultants requests for a continuance and noting that action taken by all interested parties responsible for the construction of the Harmon Tower have addressed the deficient elements and the structural engineer determined that the structure is safe to continue construction up to the 23rd floor. A continuance of hearing was granted and the hearing was rescheduled for June 30, 2009.
- A response to the complaint was received by the Hearing Officer from Converse Consultants dated April 9, 2009. The response included:
 - 1. Written response (18 pages)
 - 2. Appendix A (Affidavits of Converse Consultant employees and Expert Report of William Taylor of GEOTEK, Inc.)
 - 3. Appendix B (Quality System Manual, Converse Consultants Employee's resume/certification documentation, employee training records, Quality System Evaluations, Documents received from Clark County, and CD recording of the October 1, 2008 Mandatory Meeting)
- A supplemental Response to the Complaint dated June 29, 2009 from Converse Consultants was received by the Hearing Officer on June 30, 2009. (Total page content is three, however the attachment Exhibit A does not have reference to the Harmon Tower)
- Pre-hearing conferences were held between Mr. Gregory Gilbert, Attorney for Converse Consultants, Mr. Clifford Jeffers, Deputy District Attorney representing Clark County Building Department, and the Hearing Officer on June 19, 2009 and June 26, 2009. Hearing format, scope of evidence and testimony coverage, witness listings, and record keeping were discussed. It was agreed to limit the questions to the legal representatives for Converse Consultants and Clark County Building. The questions would be limited to only the issue of the Quality Assurance matters and the responsibilities of Converse Consultants as per the Quality Assurance Agreement related to the Harmon Towers. It was further agreed that the record shall be produced by a Court Reporter that was to be provided by Converse Consultants.
- A hearing was conducted by the Hearing Officer as per the procedures agreed to the pre-hearing conferences, however a Court Reporter was not present at the Hearing. Both Parties submitted a Post-Hearing Brief to the Hearing Officer.

POST HEARING INFORMATION

- 1. Because of no electronic recording or court reporting of the hearing proceedings, the Hearing Officer requested additional information from Converse Consultants: (1) proof that Inspectors Edberg and Laurente were on the project during the time represented on the employee time sheets, (2) provide all of the NCR's on the Harmon Project issued by Converse Consultants' Special Inspectors prior to July 15, 2008. In response, Converse provided cell phone records of Converse employees Laurente, Edberg, Bradford, Godley, Selander, Smith and Miller. Converse also provided Pour Reports for Level 16 to Level 20 dated 5/31/2009 to 7/1/2009 at the Harmon Tower, and the time sheets of Laurente and Edberg accompanied by reinforcement inspection sheets for the Harmon Tower.
- 2. Converse submitted a Post-Hearing Brief addressing <u>Direct Questions from the Hearing Officer and Additional Comments and Clarifications</u>. The document was dated July 10, 2009 and delivered to the Hearing Officer on the same date.
- 3. Converse provided Supplemental Remarks to the Professional Review conducted by Mr. William Taylor or Geotek, Inc. dated July 8, 2009 and delivered to the Hearing Officer on July 10, 2009.
- 4. Converse not only provided the NCR's for the Harmon Tower before July 15, 2008, but submitted for the Hearing Officer's review 7,945 documents related to NCR's throughout the City Center Project. These were delivered to the Hearing Officer on July 10, 2009.
- 5. Clark County Deputy District Attorney delivered a Post-Hearing Brief via Email to the Hearing Officer on July 10, 2009.

FINDINGS OF FACT

- 1. Complaint filed by Clark County Building Department Principle Engineer against Converse Consultants on January 9, 2009 in accordance with Clark County Administrative Code Section 22.02.560 (A). The complaint was filed with the Director/Building Official, Ronald L. Lynn.
- 2. Converse Consultants responded to the complaint on April 9, 2009. (Pages 1 through 18)

- 3. As a part of PAC # 07-19475, a Quality Assurance Agency Special Inspection Agreement was issued to the Perini Building Company on June 13, 2007. The provisions of the Agreement list Converse Consultants Southwest, Inc. as the approved Quality Assurance/Testing Agency to provide quality assurance and testing in accordance with the addendum attached to the Quality Assurance Agreement. Converse Consultants Southwest, Inc. was responsible to conduct special inspections and verifications for Concrete construction as required by Sections 1704.2, 1704.4, and table 1704.4 of Chapter 17 of the International Building Code (IBC).
- 4. Table 1704.4 of the IBC requires periodic inspection of reinforcing steel, including prestressing tendons, and placement.
- 5. Section 1702 of the IBC defines Periodic Special Inspection as "The part-time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where the work has been or is being performed and at the completion of the work.
- 6. Mandatory meeting between Converse Consultants and the Clark County Building Department on October 8, 2008:
 - The meeting was held in accordance with the provisions of the Clark County Building Administrative Code (BAC) 22.02.540.
 - Issue in the meeting was to identify and resolve problems that interfere with the proper functioning of the special inspection process.
 - Administrative and Investigative Fees were assessed Converse Consultants, Scott Edberg, and Joseph Laurente by the Building Department as per a letter dated November 10, 2008 from the Department of Development Services Building Division.
 - All assessed fees were paid without a request for a meeting with the Building Division Staff to dispute the fees as per a response by Gregory Gilbert to a question from the Hearing Officer during the Hearing of June 30, 2009.
 - Table 3-H of the BAC sets the amount of the Administrative and Investigative Fees for failing to issue Non-Conformance Reports (NCR's), failing to supervise and perform a review that inspections are performed pursuant to the approved construction documents and technical codes, and failure to insure filing of accurate and complete reports based upon actual inspection and testing results.
- 7. Letter from Trent C. Miller, Associate of Halcrow Yolles dated July 13, 2008. Opening statement of the letter is as follows: "This letter is to address the Harmon Tower construction. At our meeting last week, there has been an acknowledgement by the contractor and third party inspector of quality control problems thus far in the construction of the Harmon Tower."

- 8. Converse Consultants Construction Inspection Reports (CR-1 Through CR-62) dated from March 7, 2008 to July 1, 2008 (CR-8 was not included in the Complaint File). Joseph Laurente signed 17 CR reports from May 31, 2008 to July 1, 2008 and Scott Edberg signed 44 CR reports from March 7, 2008 to May 30, 2008.
- 9. Clark County Department of Development Building Division Notice of Violation (NOV) No.'s 31253, 24844, 24831, 24874, 24876 addressing the inspection process at the Harmon Tower.
- 10. Letter to Jack Sivertson at the Clark County Building Department Inspection Division from Eugene L. Miller, Quality Manager Converse Consultants, dated August 12, 2008 addressing Notice of Violation No. 24831 by listing NCR's 4 through 11 relating to the problem areas noted in NOV No. 24831.
- 11. Converse Consultants Non-Compliance Reports No.'s 4 through 11 dated July 21, 2008 through July 26, 2008.
- 12. Affidavit of Don J. Christiansen: Paragraphs 7, 8, and 9.
- 13. Affidavit of Eugene Lee Miller III: Paragraphs 8, 9, 10, 12, 13, 14, and 15.
- 14. Professional Review by William W. Taylor, P.E. dated April 7, 2009 Exhibit A0023 Through A0029:
 - The issues center on inspection of reinforcing steel for "link" beams in the Harmon Tower.
 - Reinforcing steel in the beams was not finally located in accordance with the Clark County approved plans.
 - Inspectors for Converse Consultants wrote 62 daily reports stating that the reinforcing steel was placed in accordance with the approved plans.
 - Organizational chart for the City Center Project differs from the chart in the QSM.
 - Organizational changes for the City Center were made to support the larger project.
 - Discussions with Mr. Miller regarding the inspection duties of Mr. Laurente and Mr. Edberg on the Harmon Tower (A0026). Mr. Laurente was assigned floor 18 following inspection of floor 17 with Mr. Edberg. Mr. Edberg inspected floors 5 through 16.
 - Discussions with Mr. Laurente (A0027). Mr. Laurente was unaware that the reinforcing steel placement did not comply with the approved plans when he performed the inspection and wrote the reports.
 - Mr. Selander reviewed the inspections reports prepared by Mr. Laurente and Mr. Edberg (A0027).
 - Mr. Taylor's conclusion opening paragraph "Converse Consultant's did not identify the non-conforming reinforcing steel work. This may have been the result of a variety of different causes, including misinterpretation, incompetence,

a mistake, or something more nefarious. Other things, such as reinforcing steel and concrete placement during different shifts, night work, moving of reinforcing steel to facilitate concrete vibration, or accidental or intentional concealment of the problem by others may also have been contributing factors."

- 15. Converse Employee Edberg and Laurente Time Cards (B0558 to B0566). The time recorded on the Converse time record for both employees shows that Mr. Edberg recorded 641.5 hours on the Lifestyles Tower which is 96% of the total recorded time on the Converse Time Record sheets submitted for Mr. Edberg. The total time recorded by Mr. Laurente on the Lifestyles Tower was 327.5 hours which is 50% of the total time recorded on the Time Record sheets submitted for Mr. Laurente. According to the Time Record sheets, Mr. Laurente also spent time on the Auto People Mover and the Harmon Overpass projects.
- 16. Non-Compliance Reports, pages B0780, B0787, B0788, B0794, and B0795 to B0808 contain recorded information regarding Inspectors Edberg and Laurente knowledge of the inspection procedures and the approved plans by the Clark County Building Department.
- 17. Converse Consultants Quality Systems Manual specifically:
 - Organizational Chart (B0027).
 - Construction Inspector (B0041)
 - Project Engineer (B0044)
 - Quality Systems Manager (B0049)
 - Operations Manager (B0050)
 - Inspector Task-Specific (Standard Procedures) (B0108 to B0114)
- 18. Audio Compact Disc of the October 8, 2008 Mandatory Meeting between Clark County Building Department, Converse Consultants, and Joseph Laurente. Converse provided, in the Post Hearing Brief, comments regarding the Mr. Laurente's testimony at the Mandatory Meeting at the Clark County Building Department. Mr. Laurente's capability of reading and understanding construction drawings is supported by the NRC's created by Mr. Laurente on the Harmon Elevator Pit (C2649 to C2702) and other NCR's (C1519), (C6614 and C6615), (C8062), (C8067 to C8080),
- 19. Specific Non Compliance Reports (NCR's) related to reinforcement inspection from Exhibit C. (See attached list) These NCR's were reviewed for content, intention, and the Inspector's knowledge of procedures.
- 20. Pour Sheets signed by Edberg and Laurente releasing the reinforcement on Levels 16, 17, 18, 19 and 20 for final concrete placement.
- 21. Scott Edberg's cell phone records from April 8, 2008 through May 5, 2008 show 40 calls to Joseph Laurente. Joseph Laurente's cell phone records show 46 calls to Scott Edberg in the same time period. The reinforcement inspection period for Joseph

Laurente on the Harmon Tower upper levels started May 31, 2008 on Levels 16/17 East-West Core Walls. Scott Edberg started reinforcement inspection on Harmon Tower on March 7, 2008 on Level 5.

22. NCR's related to the Harmon Tower (C369 to C399) relate to Epoxy Dowels, Mechanical Couplers, Pile Type Change, Concrete Mix Design, Concrete, Reinforcement, Base Plate Grout, and Link Beam (C399 Level 21). Scott Edberg registered five NCR's on the Life Style Tower and Life Style Podium. There were four NCR's for Epoxy Dowels and one NCR for Concrete Mix Design. Joseph Laurente registered five NCR's on the Life Style Podium. There are two NCR's for Plan Revision-Pile Change, one for Reinforcement-Elevator Pit, one for Epoxy Dowels, and one for Base Plate Grout.

DISCUSSION OF THE FINDINGS OF FACT

- A. The Clark County Building Department is authorized by Chapter 17 of the International Building Code to require special inspections of the construction at the Harmon Tower in the City Center construction project. Construction Permit No. 07-19475 was issued to Perini Building Company upon the execution of a Quality Assurance Agency Special Inspection Agreement naming Converse Consultants of Southwest, Inc. as the approved Quality Assurance Agency.
- B. Converse Consultants is an approved Quality Assurance Agency in accordance with the provisions of Chapter 17 of the International Building Code and the Clark County Building Administrative Code. Converse has been approved by the Clark County Building Department to inspect the installation/placement of steel reinforcement for structural concrete construction.
- C. Converse Consultants assigned Scott Edberg and Joseph Laurente to conduct the steel reinforcement inspections on all building levels above level 4 on the Harmon Tower. Both Edberg and Laurente were qualified by the Building Department to inspect steel reinforcement.
- D. Scott Edberg completed and signed daily inspection reports on Converse Consultants form from March 7, 2008 through and including May 31, 2008. The form was completed by hand-printing. Each form contains the statement that "All reinforcement verified for bar sizes, grades, lap lengths, and clearances prior to concrete placement. The best of my knowledge, work observed per plans and specifications." Inspector Laurente also completed the Converse Consultants daily inspection report form but the text was type-written. The report included the statement "All reinforcements were verified in accordance with sheets/details listed above for bar sizes, grades, lap lengths, clearances and quantities prior to placement.

To the best of my knowledge, work observed per CCBD approved plans and specifications." Some of the wording used by the Inspectors in these statements is included under Section 6 of the Converse Consultants Quality System Manual (B0113).

- E. According to the Professional Review conducted by Mr. William Taylor (A0027) and the Minutes for the Converse Hearing 10/08/08 (B0769), and the compact disc recording of the Building Department/Converse Consultants meeting 10/08/08, Mr. Laurente was unaware that the steel reinforcing did not comply with the CCBD approved plans and that Mr. Laurente was not experienced in reading steel reinforcement plans. Other inspectors helped him read the plans.
- F. Mr. Laurente, according to Resolution of Non-Compliance ROC-P-1 dated January 18, 2008 (B0780) was familiar with the CCBD approved plans procedures. The plans that Mr. Laurente noted in the ROC may not have been related to the steel reinforcement work on the upper floors of the Harmon Tower, but the statement signed by Mr. Laurente suggests that he understood the importance of CCBD approved plans as an inspection reference.
- G. The employee time record sheets show a great difference in inspection time spent on the Harmon Tower between Scott Edberg and Joseph Laurente. (B549 to B566)
- H. Converse Consultants did not provide proof of training for Edberg and Laurente in the inspection of concrete construction steel reinforcement procedures. Training documents were provided by Converse but the training was related to cold weather concrete (no steel reinforcement included) (B0567), warm weather concrete (no detailed information as to the curriculum of the training session) (B0572), cylinder transportation (B0576), air meter usage (B0579), report writing seminar (B0583), vehicle safety meeting (B0587), nuclear training (B0601). Statement by Converse Consultant Mr. Gregory Gilbert in the hearing June 30, 2009 and in the Supplemental Response to the Complaint (Page 2, Question 4) noted that Converse Consultants must, at times, rely upon the certifications by other organizations that the employee who has been issued such a certification of qualification has some knowledge of the discipline in which the certification has been issued. In the matter of Edberg and Laurente, both inspectors were issued certificates of qualification in Reinforced Concrete Special Inspections.
- I. Converse Consultants, in their Response to the Complaint and in a statement by Mr. Gregory Gilbert in the hearing on June 30, 2009, modified the organizational chart on page B0027 to better serve the requirements of the City Center Construction Project (Page 10 of Response to the Complaint). There has been no proof provided by Converse that a notice of change to the quality assurance organization was served upon the Clark County Building Department. As per the statement in the June 30 hearing, it is understood by the Hearing Officer that Converse assigned Field Supervisory positions from the rank of special inspectors listed in the organizational chart (B0027).

J. The Quality Manager did exercise the responsibilities of the position as set forth in Section 6 of the Quality System Manual (B0049). This is evidenced by the audits provided in Converse (B0687 to and including B0726). The audit format used in the audits is a part of the Converse Quality System Manual. Audits on the performance of Scott Edberg and Joseph Laurente, if done, were not included in the Converse Response.

CONCLUSIONS

It is concluded that:

- The appointment of the Hearing Officer by the Building Official was in compliance with Section 22.02.560 of the Clark County Administrative Code, and
- the complaint and supporting documents were served upon Converse Consultants, Joseph Laurente, and Scott Edberg, and
- the hearing on June 30, 2009 was conducted without an official record, and
- the post-hearing briefs clarified previous supporting documents and added documents supporting specific areas of the inspection procedures employed by Converse on the Harmon Tower, and
- the post-hearing brief filed by the Clark County Deputy District Attorney upholds the County Building Department's complaint against Converse Consultants asserting that the 62 Daily Inspection Reports filed by Converse Special Inspectors were flawed and that the primary purpose of the presence of Special Inspectors on the project was to add another layer of safeguards to assure compliance with the construction drawings approved by the Clark County Building Department, and
- the Construction Reports filed by Special Inspectors Laurente and Edberg on the Harmon Tower for work observed from floor 5 through floor 20 included the statement "All reinforcement verified for bar sizes, grades, lap lengths, and clearances prior to concrete placement" (Edberg) and "All reinforcements were verified in accordance with sheet/details listed above for bar sizes, grades, lap lengths, clearances and quantities prior to placement" (Laurente) which suggests to the Clark County Building Department that the if an area of reinforcement is

prepared to receive concrete, the reinforcement is installed in accordance with the approved plans and specifications, and

- the three pour sheets signed by Scott Edberg and the fifteen pour sheets signed by Joseph Laurente gave the appearance that the steel reinforcement on levels 16 through 20 was installed in compliance with the Building Department approved plans and specifications, and
- the evaluation conducted by Mr. William Taylor of the operations of Converse Consultants presented a fair and unbiased review of the Converse employees inspection activities and procedures, and
- the Converse Special Inspectors Joseph Laurante and Scott Edberg have a cursory understanding of the terms and provisions of the Converse <u>Quality</u> <u>Systems Manual</u>, and construction drawings and specifications of the Harmon Tower, and
- and the assessments against Converse Consultants, Scott Edberg and Joseph Laurente was not considered disciplinary action by payment of expenses generated by the Clark County Building Department in conducting the investigation of the Harmon Tower complaint, and
- Converse Special Inspectors did not discover the errant steel reinforcement placement on level 5 through level 20 on the Harmon Tower until the flawed reinforcement placement was discovered by the engineer of record, and
- subsequent to this discovery, Converse Consultants replaced the Special Inspectors on level 21 which resulted in the first Non-Conformance Report to be issued for errant steel reinforcement placement on levels above the fourth level, and
- Converse Consultants delivered over 3,000 Non-Conformance Reports written by Special Inspectors on the Harmon Tower and other construction sites of the City Center Project which clearly showed that the Converse Consultant Special Inspectors could read and understand specifications and plans related to a full spectrum of construction activities, and
- as per Findings of Fact No. 22, Special Inspector Edberg wrote five Non-Conformance Reports on the Harmon Tower and Joseph Laurente wrote five Non-Conformance Reports on the Harmon Lifestyle Podium and records submitted by Converse Consultants of all of the Non-Conformance Reports written by Converse Consultants Special Inspectors on the City Center Project reflects that no Non Conformance Reports were written by Inspectors Edberg and Laurente on the Harmon Tower reinforcement placement for Levels 5 through 20, and

- Converse Consultants Special Inspectors were familiar with the Clark County Building requirements related to no critical structural construction can be allowed without Clark County Building Department approved plans on the project and the construction of critical structural components must be done in compliance with those approved plans, and this conclusion is supported by the text of many of the Non Compliance Reports filed as supporting documents (see attached list) in Exhibit C of Converse Supplemental Response To the Complaint, and
- the language set forth in the Quality Assurance Agreement naming Converse Consultants as the Quality Assurance Agency assigns to Converse Consultants the responsibility of Section 22.02.525 (A.2) of the Clark County Building Administrative Code and by reason of this assigned responsibility to the Quality Assurance Agency, the Clark County Building Department relies upon the accuracy and completeness of all reports and filings by the Quality Assurance Agency on the work performed by the Permittee on the construction project, and
- because of the language of the Quality Assurance Agreement, Converse Consultants accepted the inspection and quality assurance duties for concrete construction as follows: "the special inspections and verifications for concrete construction shall be as required by Sections 1704.2, 1704.4 and as amended and Table 1704.4", and
- concrete reinforcement as required by Table 1704.4 of the International Building Code requires the inspection of the reinforcement to be "part time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where the work has been or is being performed and at the completion of the work.", and
- by reason of reinforcement flaws in the 18 link beams on each of the 15 floors of the Harmon Tower, Periodic Inspection as per Table 1704.4 of the International Building Code was not performed in a manner that supports Special Inspection procedures as required by any Clark County approved Special Inspection Agency, and
- the performance of Converse Consultants management staff was below the standard set by the Converse Consultants <u>Quality Systems Manual</u>, and
- Special Inspectors on the Harmon lacked the support of supervisory oversight of inspection activities on the Harmon Tower levels 5 through 20.

RECOMMENDATION TO THE BUILDING OFFICIAL

In the matter of Scott Edberg, Special Inspector

Based upon the complaint and documentation submitted by the Clark County Building Department to the Building Official on January 9, 2009, and the 42 Daily Inspection Reports signed by Scott Edberg, and the three "pour sheets" also signed by Scott Edberg, and the removal of Mr. Edberg from the list of qualified Special Inspectors by Clark County Building Department, it is the recommendation of this Hearing Officer that the Special Inspector qualifications of Mr. Scott Edberg be revoked.

In the matter of Joseph Laurente, Special Inspector

Based upon the complaint and documentation submitted by the Clark County Building Department to the Building Official on January 9, 2009, and the 17 Daily Inspection Reports signed by Joseph Laurente, and the 15 "Pour Sheets" also signed by Mr. Laurente, and Non Conformance Reports issued by Mr. Laurente on the Harmon Tower Podium, Elevator Shaft, and Pile related installations, it is the recommendation of this Hearing Officer that the Special Inspector qualifications issued to Mr. Laurente by the Clark County Building Department be suspended until Mr. Laurente is requalified to conduct Special Inspections by the Clark County Building Official under the provisions of 22.02.520 of the Administrative Code.

In the matter of Converse Consultants

By reason of the Findings of Fact and Conclusions, it is the recommendation of this Hearing Officer that the Building Official suspend the Quality Assurance Agency qualifications of Converse Consultants immediately for failure to perform the duties designated for a Quality Assurance Agency. The suspension should be conditioned to run until all of the 276 Non Conformances (LBR-NCR-CR-1 to LBR-NCR-CR-276) issued by Converse Consultants on the Harmon Tower Link Beams are cleared by the Building Department.

Dated this 17 day of July, 2009.

Charles M. Thomas, P.E. Hearing Officer

NCR LIST --- FINDINGS OF FACT ITEM 19

NCR Number	Exhibit C Page Number
CR-1, CR-2	C405 to C408
CC1 – CC11	C409 to C450
CR1 – CR11	C462 to C494
CR1 – CR11	C523 to C557
CP1 – CP6	C559 to C630
ROC – CR1	C1107 to C1108
CR1 – CR34	C1201 to C1264
CE1 – CE15	C1425 to C1457
PO1	C1519
CR1 – CR17	C1522 to C1555
CE1 – CE18	C1558 to C1603
CR1 – CR33	C1617 to C1679
CE1 – CE28	C1682 to C1752
CR1 – CR43	C2000 to C2089
CR1 – CR22	C2131 to C2168
CP4 – CP5	C2181 to C2206
PT1 – PT5	C2445 to C2447
CR1 – CR4	C2451 to C2462
CR1	C2513 to C2517
CR1 – CR10	C2649 to C2702
CR1 – CR44	C2987 to C3106
CP1 – CP5	C3184 to C3190
CR1 – CR3	C3209 to C3213
CR1	C3360 to C3362
CR1 - CR10	C3498 to C3618
CR1 – CR9	C4996 to C5072
CR1 – CR12	C5119 to C5249
CR1 – CR5	C6459 to C6492
CR1 - CR10	C6573 to C6603
PO1	C6614 to C6615
CR1	C6657 to C6659
CR1 – CR6	C6698 to C6716
CR1 – CR2	C7467 to C7476
CR1	C7485 to C7489
CR1	C7579 to C7576
CR1	C7631 to C7632
CR1 – CR13	C7846 to C7876
CR1 – CR5	C8041 to C8048
CR2, CR19	C8060, C8062
CR1 – CR3	C8067 to C8080
CR1	C8183 to C8191
CR1	C8250
CR1 – CR3	C8297 to C8307
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